Critical Release Notice

Publication number: 297-8021-351
Publication release: Standard 12.02

Attention!

****

The North America DMS-100 Data Schema Reference Manual, 297-8021-351, will continue to be updated and provided in the North America - DMS NTP collection.

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The content of this customer NTP supports the SN09 (DMS) software release.

Bookmarks used in this NTP highlight the changes between the NA015 baseline and the SN08 (DMS) release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the NA015 baseline remains unchanged and is valid through the SN08 (DMS) release.

Bookmark Color Legend

Black: Applies to content for the NA015 baseline that is valid through the current release.

Red: Applies to new or modified content for NA017 that is valid through the current release.

Blue: Applies to new or modified content for NA018 (SN05 DMS) that is valid through the current release.

Green: Applies to new or modified content for SN06 (DMS) that is valid through the current release.

Purple : Applies to new or modified content for SN07 (DMS) that is valid through the current release.

Pink: Applies to new or modified content for the SN08 (DMS) that is valid through the current release.

Orange: Applies to new or modified content for SN09 (DMS) that is valid through the current release.

Attention!

Adobe ® Acrobat ® Reader ™ 5.0 or higher is required to view bookmarks in color.

Publication History

***Note**: Refer to the NA015 baseline document for Publication History prior to the NA017 software release.*

January 2006

Standard NTP release 12.02 for the SN09 (DMS) software release.

Volume 1

Modified data schema – AMAOPTS (A00009252)

Volume 4

Modified data schema – ESAPXLA (Q01228425-01)

Volume 6

Modified data schema – IPNETWRK (Q01215905 and Q01227402)

Volume 7

Modified data schema – LNSMTCE (Q00959081)

Volume 9

New data schema – PATHSET (modified by Q01077097)

New data schema – SBSRMINV (Q01063949)

Volume10

New data schema – SERVRINV (Q01063949)

Volume12

Deleted the term TBD, which occurred in two places in this volume.

September 2005

Preliminary NTP release 12.01 for the SN09 (DMS) software release.

Volume 1

Modified data schema – AMAOPTS (A00009252, A00009508); ANNMEMS, ANNPHLST (A00009013)

Volume 8

Modified data schema – OAFUNDEF (A00009012)

Volume 9

Modified data schema – SCAICOMS (A00009078)

Volume 11

Modified data schema – TOPSFTR (A00009012)

Volume 12

Modified data schema – TRKSGRP type ISDN (Q01112597)
Modified data schema – XPMIPMAP (A00009011)

August 2005

Standard NTP release 11.03 for the SN08 (DMS) software release.

Volume 5

Modified data schema – IBNFEAT feature SimRing

Volume 6

Modified data schema – KSETFEAT feature SimRing

Volume 7

Modified data schema – LTCINV

Volume 11

New data schema – TOPSMCDB
Modified data schema – TOPSTOPT

June 2005

Standard NTP release 11.02 for the SN08 (DMS) software release.

The following Data Schema content is updated for the SN08 (DMS) release. Content provided in this NTP is not superceded by content provided in the replacement NTP as indicated for the Preliminary release.

Volume 3

New data schema – CUSTSTN option CNDBO

Volume 4

Modified data schema – EADAS

Volume 6

New data schema – KSETINV
New data schema – LCMINV

Volume 8

New data schema – NSCDEFS
New data schema – NSCPMAP

March 2005

Preliminary NTP release 11.01 for the SN08 (DMS) software release.

The following updated Data Schema content is provided in the Carrier VoIP Operational Configuration: Data Schema Reference NTP, NN10324-509. The content provided in NTP 297-8021-351 is superseded by the content provided in NTP NN10324-509.

ACDMISPL
CGBLDADD
CGBLDDGL
CGBLDDIG
CGBLDNI
CGBLDPI
CGPNBLDR
CUSTSTN_OPTION_DBO
EDAS
IBNLINES
ISERVOPT
KSETINV
TLDSIAMAOPTS
TRKSGRP_TYPE_C7UP

The following new Data Schema content is provided in the Carrier VoIP Operational Configuration: Data Schema Reference NTP, NN10324-509. This content will not be provided in NTP 297-8021-351.

CGBLDSIN
LOGTHROT
NTPOLL

October 2005

Standard release 10.04 for software release SN07 (DMS). Updates made in the North American Data Schema Reference Manual are shown below

Volume 2

Table BEARNETS description added for CR Q01083765.

Volume 3

Table DESDATA description added for CR Q01083765.

Volume 4

Table DPTRKMEM was created as part of activity A59015739 in an earlier release. Documentation updated for CR Q01083781.

Volume 5

Table IHEADRR description added for CR Q01083765.

Volume 8

Table NET2NET description added for CR Q01083765
Table NETBRDGE description added for CR Q01083765
Table NETPATH description added for CR Q01083765

Volume 9

Table PCEMENTT was created as part of activity A00007196 in an earlier release. Documentation updated for CR Q01077110.

Table PCEMFEID was created as part of activity A00007196 in an earlier release. Documentation updated for CR Q01077137.

Table PRSUDATA description added for CR Q01083765.

Table PVDNCHAN description modified for CR Q00806759/Q01207784

Volume 10

Table SELDEFS and table SETDEFS descriptions added for CR Q01083765.

December 2004

Standard release 10.03 for software release SN07 (DMS). Updates made in the North America Data Schema Reference Manual are shown below

Volume 9

Table PECINV amended for CR Q00900178

Standard release 10.02 for software release SN07 (DMS). Updates made in the North America Data Schema Reference Manual are shown below

Volume 1

AINPRESC (new), ACDENLOG, ACDGRP, ACDLOGIN, ANNS

Volume 2

No changes

Volume 3

CMIPADDR, CUSTSTN option AINDENY

Volume 4

No changes

Volume 5

IBNFEAT feature ACD, IBNFEAT feature SUPR

Volume 6
IPAPPL (new), KSETFEAT feature SUPR, KSETFEAT feature IPCLIENT, KSETLINE feature ACD

Volume 7
No changes

Volume 8
MULTITM (new), OAFUNDEF, OANODINV

Volume 9
PADDATA, QMSMIS

Volume 10
No changes

Volume 11
TOPSFTR, TOPTDROP, TRIGINFO, TRIGITM, TRKAIN

Volume 12
No changes

September 2004

Preliminary release 10.01 for software release SN07 (DMS). Updates made in the North America Data Schema Reference Manual are shown below

Volume 1
ACDENLOG, ACDGRP, ACDLOGIN

Volume 2
AUTHCDE

Volume 3
CUSTN, CUSTN option VOWDN (new)

Volume 4
DIRPOOL2 (new), DIRPPOOL, DNROUTE, DNROUTE feature VOWDN (new)

Volume 5
IBNFEAT feature ECM, IBNXLA

Volume 6
ISUPTRK, KSETFEAT feature ECM

Volume 7
LIUINV, LTCINV, MNHSCARR, MSCIDMAP (new), MSCINMAP (new)

Volume 8
MUMRTAB

Volume 9
RESFEAT

Volume 10
TDBDAOPT, TMTMAP

Volume 11
TOLLTRKS, TOPSFTR, TOPSPARM, TOPSTLDN

Volume 12
TRKOPTS, VOWINV (new), XLABILL (new), XLACLASS (new)

March 2004

Standard release 09.03 for software release SN06 (DMS). Updates made in the North America Data Schema Reference Manual are shown below.

Volume 1
DCA references changed / made obsolete

Volume 2
CARRMTC, C7UPTMR

Volume 3
DCA references changed / made obsolete

Volume 4
DNROUTE, DNROUTE feature DISA

Volume 5-6
No changes

Volume 7
LNPOPTS, LTDATA

Volume 8
OPTOPT

Volume 9
PADDATA, RDTINV

Volume 10
SUSHELF, SYNCLK, DCA references changed / made obsolete

Volume 11-12
No changes

September 2003

Standard release 09.02 for software release SN06 (DMS). Updates made in the North America Data Schema Reference Manual are shown below.

Volume 1
No changes

Volume 2
BCCODES

Volume 3
CSEDPMAP

Volume 4
DSLIMIT, FNPACONT.RTEREF

Volume 5

HNPACONT.RTEREF, IBNFEAT feature MWT, IBNLINES option MDN, IBNLINES option STN, IBNRTE selector CND, IBNRTE selector NOT, IBNXLA, IBNXLA selector FTR type LSPKP

Volume 6
ISDNPARM, ISERVOPT, KSETLINE

Volume 7
LENLINES, LTCINV, MNMGPIP

Volume 8
OFRT selector CND, OFRT selector NOT

Volume 9
No changes

Volume 10
STDPRTCT.STDPRT selector E911

Volume 11
TODHEAD, TONES, TRKGRP E911, TRKGRP type IT

Volume 12
TRKOPTS, VFGDATA, VIRGRPS

June 2003

Preliminary release 09.01 for software release SN06 (DMS). Updates made in the North America Data Schema Reference Manual are shown below.

Volume 1
ACRTE, ALMSC, ALMSCGRP, ALMSD, ALDSDGRP, ANNAUDID (new), ANNMEMS, ANNPHLST (new)

Volume 2
No changes

Volume 3
CSEDPMAP (new), CUSTN option CFIND, DEFDATA

Volume 4
FNPACONT

Volume 5
HNPACONT, IBNFEAT feature CFIND, IBNLINES, IBNRTE selector CND, IBNRTE selector NOT

Volume 6
ISERVOPT, KSETLINE

Volume 7
LRGPINV (new), LTDATA, MNCKTPAK, MNIPPARM (new), MNNODE

Volume 8
OFRT selector CND, OFRT selector NOT

Volume 9
PADDATA, REXSCHED

Volume 10
SERVSINV, SPMECAN, SPMLDVAL (new), STDPRTCT.STDPRT selector E911

Volume 11
TODHEAD, TONES, TRKGRP E911, TRKGRP type IT

Volume 12
TRKMEM, TRKOPTS, TRKSGRP, VFGDATA, VIRTGRPS

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DMS-100 Family

North American DMS-100

Customer Data Schema Reference Manual Volume 7 of 12

Data Schema LENLINES-MSRTAB

LET0015 and up Standard 05.02 May 2001

NORTEL NETWORKS™

DMS-100 Family

North American DMS-100

Customer Data Schema Reference Manual Volume 7 of 12

Data Schema LENLINES-MSRTAB

Publication number: 297-8021-351
Product release: LET0015 and up
Document release: Standard 05.02
Date: May 2001

Contents

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Data Schema LENLINES-MSRTAB

NTP Summary Contents

1 Data schema tables

The following pages contain the data schema tables.

LENLINES

Table name

Line Assignment Table

Functional description

Table LENLINES contains the following data for each datafilled line:

- the site name assigned to the remote location (if the line is remote)
- the line equipment number (LEN)
- the party to which the directory number (DN) is assigned
- the ring code assigned to the directory lines
- the DN
- the signal type
- the index into table LINEATTR (Line Attribute)
- options assigned to the line
- the Serving Numbering Plan Area (SNPA) of the DN associated with the line

Party types are assignable as shown in the following table.

Party types and associated information

Party type	Abbreviation	Assignable to
SINGLE	S	Single-party lines
RING1	R1	Two-, four-, eight-, and ten-party lines
RING2	R2	Four-, eight-, and ten-party lines
RING3	R3	Eight- and ten-party lines
RING4	R4	Eight- and ten-party lines
RING5	R5	Ten-party lines
TIP1	T1	Two-, four-, eight-, and ten-party lines
TIP2	T2	Four-, eight-, and ten-party lines
TIP3	T3	Eight- and ten-party lines
TIP4	T4	Eight- and ten-party lines
TIP5	T5	Ten-party lines

LENLINES (continued)

The following table shows the correspondence between ring codes and ringing types. For international switches, the ring code is 0 (zero) for regular ringing cadence. The cadences for the other values are not currently defined.

Ring codes and ringing types

	Ringing type		
Ring code	**Coded ring code**	**Superimposed ring code**	**Frequency selective ring code**
0			Primary
1	1	1-	1
2	2	1+	2
3	3	2-	3
4	4	2+	4
5	5		5

The following table shows the correspondence between line class code (LCC), line card type, and ring code.

Line class code, line card type, and ring code

		Coded Ringing		Superimposed ringing		Frequency selective ringing	
Line class code	**Ringers**	**Line card**	**Ring code**	**Line card**	**Ring code**	**Line card**	**Ring code**
1FR	Bridged	A	0 (note 1)	A	0 (note 1)	A	0 (note 1)
	Divided					B	1 - 5
2 FR	Divided	A	0 (note1)	A	0 (note 1)	B	1 - 5
2 FR	Bridged	-	-	-	-	A or B (note 2)	1 - 5
4FR	Divided	-	-	B	1-4	B	1 - 5

Note 1: If a ring code of 0 (zero) is entered by table editor or service order, a type A line card must be associated with the service concerned.

Note 2: A type A line card is recommended for these applications.

Line class code, line card type, and ring code

		Coded Ringing		Superimposed ringing		Frequency selective ringing	
Line class code	**Ringers**	**Line card**	**Ring code**	**Line card**	**Ring code**	**Line card**	**Ring code**
4FR	Bridged	-	-	-	-	A or B(note 2)	1 - 5
8FR	Divided	B	1-5	B	1-4	B	1 - 5
10FR	Divided	B	1-4	-	-	-	-

Note 1: If a ring code of 0 (zero) is entered by table editor or service order, a type A line card must be associated with the service concerned.

Note 2: A type A line card is recommended for these applications.

If the ringing type is frequency selective, the ringing and frequencies are defined in table LMRNG (Line Module Ring Code). The following table indicates the available frequencies and access ring code for each type of frequency ringing. Each line module can handle four of the five frequencies.

Access ring codes and associated frequencies

Ring code	Decimonic	Harmonic	Synchronic 16	Synchronic 20
0	Primary	Primary	Primary	Primary
1	20	16-2|3(17)	16	20
2	30	25	30	30
3	40	33-1|3(34)	42	42
4	50	50	54	54
5	60	66-2|3(67)	66	66

Features with input data specified in table LENFEAT

The input data associated with the following features is specified in table LENFEAT (Line Feature):

- ADL, Abbreviated Dialing
- AIN, Advanced Intelligent Network
- AIOD, Auto-identified Outward Dialing

LENLINES (continued)

- AUL, Automatic Line
- BCLID, Bulk Calling Line Identification
- CDA, Call Diversion to Announcement
- CDB, Call Diversion on Busy
- CDF, Call Diversion Fixed
- CDO, Call Diversion to Operator
- CDS, Call Diversion to Subscriber
- CLI, Calling Line Identification
- CSDDS, Circuit Switched Digital Data Service
- CTD, Carrier Toll Denied
- ESG, Emergency Service Groups (international loads only)
- ESL, Emergency Service (911) on Ringdown Trunk
- EWAL, Enhanced WATS Access Line
- FRO, Sleeve Lead Control
- FRS, Sleeve Lead Control for Public Fire Reporting System
- HTL, Hot Line
- IDND, International Do Not Disturb (international loads only)
- ILR, International Line Restrictions
- INDC, International No Double Connect
- LPIC, Local Primary Inter-LATA Carrier
- MBK, Make Busy Key
- MPB, Multiparty Bridge
- OUTWT, OUTWATS
- PIC, Primary Inter-LATA Carrier
- RMB, Random Make Busy
- RMP, Remote Meter (register) Pulsing
- RMS, Remote Register, SD Point
- RSUS, Requested Suspension
- SCMP, Series Completion
- SC1, Speed Calling Short
- SC2, Speed Calling Long

- SDN, Secondary Directory Number
- SDY, Line Studies
- SHU, Stop Hunt
- SLU, Subscribers Line Usage
- SPB, Special Billing Number
- TBO, Terminating Billing Option
- WLN, Warm Line (international loads only)
- WML, Warm Line

General notes and restrictions

The assignment of lines to hunt groups is specified in tables HUNTGRP (Hunt Group) and HUNTMEM (Hunt Group Member).

When a tuple is added to table LENLINES for a new hunt group member, add a corresponding tuple to table HUNTMEM.

The input data for options, ground start, loss, balanced network value, and manual override are recorded in table LNINV (Line Circuit Inventory).

Lines with special services card codes NAILUP, NT3A13AB/AC, SSM4WV, SSM4WD, and SSM2WV cannot be datafilled in this table.

A remote digital terminal (RDT) related tuple can only be added to this table if field CARDCODE in table LNINV is RDTLS, RDTLSG, or RDTCON. Field LNATTIDX in table LENLINES needs to correspond to an LCC of either coin first service (CCF), coin dial tone first service (CDF), or coin semi-postpay service (CSP) (datafilled in table LINEATTR) if the card code of the RDT line is RDTCON. When datafilling an RDT-related entry in a table, the end user is prompted for the RDT LEN format.

The restriction of features CFBL (Call Forward Busy Line) and CFB (Call Forward Busy) being assigned to POTS lines only is no longer valid. The CFBL and CFB features can be added to Integrated Business Network (IBN) and Residential Enhanced Services (RES) lines.

The restriction of features MBK (Make Busy Key), ILB (Inhibit Line Busy), and IMB (Inhibit Make Busy) being only usable by non-hunt group members is no longer valid. The MBK, ILB, and IMB features modify the CFB and CFBL features. The CFBL and CFB features, which can be assigned to IBN and RES lines, enable the use of the MBK, ILB, and IMB features on IBN and RES lines (which can be members of hunt groups).

LENLINES (continued)

Available options for table LENLINES

The following is a list of available options that can be selected during the datafill of table LENLINES. These options are listed alphabetically by option abbreviation.

Note 1: For international loads the only available options are APS, CWT, DOR, DTBI, DTM, ELN, FDN, FNO, FNT, GLTC, HOT, ICR, ICT, LRA, LRS, MCT, NHT, ONI, PLP, PMC, PR1, PR2, RAG, SCR, SPM, SUS, WUC, 3WC, and 6WC.

Note 2: Options APS, DTBI, FDN, ICR, ICT, LRA, LRS, MCT, PMC, PR1, PR2, RAG, WUC, SCR, SPM, and 6WC are not available in loads other than international.

AMATEST - AMA test line

This option enables the operating company to designate an originating or terminating line as an automatic message accounting (AMA) test call line. The line option AMATEST works on Integrated Business Network (IBN) and POTS lines. Option AMATEST does not force the generation of a billing record by any call to or from a line that has the option enabled. If a billing record was not produced by such a call before this option was available, it is not produced with option AMATEST enabled. A call to or from a line with option AMATEST enabled produces a billing record, and that record is marked by a 1 in the fourth character position of the study indicator field. The regional accounting office is responsible for recognizing these types of records as test calls. An AMAB200 log is optional and controlled by the entry in field LOGTEST in table AMAOPTS.

AMSG - access to messaging

This option provides the feature to the user when assigned to a line

For more information, refer to the "Access to Messaging" feature in the RES translations section of the Translations Guide.

AMSGDENY - access to messaging deny

This option prevents the access to messaging service from being offered on the line when assigned to a line if either of the following occurs:

- if customer group option AMSG is assigned to a customer group option of which the line is a member
- if AMSG is offered office-wide using universal mode

For more information, refer to the "Access to Messaging" feature in the RES translations section of the Translations Guide.

Note: Options AMSG and AMSGDENY cannot be assigned to the same line.

APS - attended pay station (international loads only)

This option must be assigned to each line in a service hall. A service hall is a public site where telephone calls can be placed. Each site is supervised by an attendant who assigns telephones to end users and collects payment for their telephone charges.

ATC - automatic time and charges

This option applies to lines with a time and charges (TCC) services. With this option the number exchange identification (NXID) prints the call details at a printer for all 1+ calls, and a clerk calculates the charges and phones back the subscriber with this information.

CAT1-CAT9 - CIS subscriber categories

These options specify the Commonwealth of Independent States (CIS) subscriber category for a line. Options given to a line must be compatible with the line class of the line and other line options. Refer to tables LCCOPT and OPTOPT for compatibility information.

CCW - cancel call waiting

This option determines if cancel call waiting is permitted. The call waiting (CWT) line option must be assigned to the line in order to assign option CCW. In addition, office parameter CCW_ACTIVE must be set to Y to use option CCW.

CD0-CD9 - circle digit

These options can be assigned to party lines that have more than four parties and require circle digit operation. The number in the option name represents the circle digit (for example, CD4 is for circle digit 4). Two parties on the same line cannot have the same circle digit. Either all or none of the parties on the line have circle digit operation.

If a line has the circle digit option, the parties are required to dial the circle digit on all direct dial (1+) calls. In the standard pretranslator, the circle digit must be included in the number of prefix digits for all lines with the circle digit operation.

CLF - calling line identification with flash

A called party with this option can hold the connection within the DMS switch by flashing the switch hook and staying off-hook. An alarm is generated in the

LENLINES (continued)

switch (see table SFWALARM). If both the calling and called parties are terminated in the switch, the entire connection is held until the called party goes on-hook. If the call is on an incoming trunk and terminates within the switching unit, the connection is held back to the incoming trunk.

Note: The Calling Line Identification with Flash (CLF) feature is incompatible with call-originating integrated services digital network (ISDN) telephone sets. When calling from an ISDN phone set to an Integrated Business Network (IBN) line that has CLF assigned, the IBN set flashes the hookswitch and dials the CLF access code (for example, 11#) *but the ISDN set does not remain held* by the CLF feature. When the IBN set tries to apply the CLF, an FTR138 log is generated, showing treatment as FNAL (FEATURE_NOT_ALLOWED).

COD - cutoff on disconnect

This option is required for lines that need a line cutoff relay to operate on disconnect.

CPH - called party hold

A called party with this option can hold a connection originated within the same switch by remaining off-hook. The call is not taken down unless the called party goes on-hook (for local lines only).

CWT - call waiting

This option alerts the subscriber who is active on a call that another call is ringing on the line.

Option CWT affects the value of the following office parameters in tables OFCENG:

- NO_OF_FTR_CONTROL_BLKS
- NO_OF_SMALL_FTR_DATA_BLKS
- NO_OF_MEDIUM_FTR_DATA_BLKS
- NO_OF_LARGE_FTR_DATA_BLKS

DENYSRA - deny universal suppressed ringing access

Operation company personnel can assign DENYSRA to a line in order to deny suppressed_ringing_access to that line when SRA is deployed on an office-wide basis.

DENYU3WC - deny three-way calling - usage sensitive

This option can be assigned to a RES line or a POTS line when the end-user does not want access to U3WC. When this option is added to a line, the flash privilege remains as long as there are other flashable options. If, however,

there are no other flashable options on the line, then the flash privilege is removed. When this option is deleted from a line, the flash privilege must be given to lines which are U3WC compatible.

DOR - denied origination service

This option can be assigned to any line on which the subscriber receives calls, but does not originate them. If a line with option DOR attempts to originate a call, the line is routed to originating service supervision treatment (ORSS) in subtable TMTCNTL.TREAT(LNT). This option is provided with software package NTX002AA02.

DTBI - denied toll break-in (international loads only)

This option can be assigned to any line to prevent the operator from breaking into a call, thereby ensuring greater privacy. The option can be assigned by the operating company using service orders. Assignment charges are incurred on the feature meter as datafilled.

DTM - denied termination service

This option can be assigned to any line on which the subscriber can originate calls, but cannot receive them. If translation attempts to terminate to a coin line with denied termination service, translation is routed to coin denied termination (CNDT) treatment in subtable TMTCNTL.TREAT(LNT). If the line is other than coin, translation is routed to denied terminating (DNTR) treatment in subtable TMTCNTL.TREAT(LNT).

ELN - essential line service

This option applies to lines that are allowed to originate calls when the switch has line load control (LCC) active. To activate line load control, see command interpreter (CI) command LCC ON.

FDN - international subscriber features denied

This option can temporarily deny a subscriber the use of current features without deleting the features from the data tables. If FDN has been assigned, no other options are functional to the subscriber. The operating company is still able to change or delete the feature data through service orders or table control. Adding new line options is not permitted, with the exception of MCT (malicious call trace).

When option FDN is removed, all line options are returned to the state they were in prior to the activation of FDN.

FDN is only available to the operating company through service orders or table control. It is not a subscriber-chargeable option.

LENLINES (continued)

FGA - billing record for feature group A (FGA) call

This option, which can be assigned to terminating FGA lines, provides a billing record for terminating FGA calls.

FGA provides line-side access to end-office switches with an associated seven-digit telephone number. A subscriber to FGA service dials the number, receives dial tone from the carrier, and dials the desired long distance number. The carrier then originates a call to complete the subscriber's long distance call.

An automatic message accounting (AMA) record with call code 132 is generated when a terminating FGA call is answered by the called party.

FIG - flash ignore

If a flash signal must be ignored on a specific line, the FIG option is assigned to that line.

FNO - free number origination

This option applies to R2 toll calls, and affects ICR call records of the line-originated calls as a free call indication. Calls with the FNO line option are metered but not charged. The FNO line option affects feature charging. The FNO line option is not compatible with line options SCR (selective charge recording), APS (attended pay station), SPM (subscriber premise meter), and line attribute HOT (hotel). This line option is applicable to the line class code standard (STD).

FNT - free number terminating

This option, which only applies to local or extended area service calls, can be assigned if a charge condition must not be returned on a terminating call. With this option, the deposit of a coin is required in order to make a call on a call dial tone first line. The coin is returned upon completion of the call.

GLTC - ground loop test cancel

This option can be assigned to individual lines to override a Y (yes) setting of office parameter PER_CALL_GND_LOOP_TEST in table OFCVAR, thereby preventing the ground loop test from being performed. If office parameter PER_CALL_GND_LOOP_TEST is set to N (no) in table OFCVAR, the GLTC option has no effect since the ground loop tests are turned off on a global office basis.

The setting of parameter PER_CALL_GND_LOOP_TEST determines whether a ground loop test is performed before terminating to a ground start line. If set to a Y in table OFCVAR and option GLTC is not assigned, then a ground loop test is performed on all terminations to all ground start lines. The

parameter PER_CALL_GND_LOOP_TEST setting controls the ground loop test on a global office basis.

HOT - hotel/motel

This option sends an identification (ID) digit to the Traffic Operator Position System (TOPS) or Traffic Service Position System (TSPS) operator to identify that the call is from a hotel or motel.

ICR - international toll call recording (international loads only)

This option can be assigned to lines in international switching units if toll call recording of completed calls is required. If a call is a local call, the call is not recorded. If the call failed or a restart occurred, as much information as possible is recorded.

ICT - international call transfer (international loads only)

This option can be assigned to lines in international switching units to enable a subscriber to transfer a call to another subscriber by flashing the switch hook and dialing the other party. The two other subscribers are connected together and the initiator is released from the call.

ILB - inhibit line busy

This option inhibits the Call Forward Busy (CFB) feature whenever a line is actually busy. Incoming calls cannot be forwarded to a busy line.

IMB - inhibit make busy

This option is used in conjunction with the make busy key (MBK) service. When MBK is activated on a line with the IMB option, an incoming call cannot be forwarded and a busy tone or user-defined treatment occurs.

INT - intercom

This option can be assigned to lines that have subscribers intercom. This option can only be assigned to lines in switching units that have office parameter INTERCOM in table OFCOPT set to Y.

IRR - inhibit ring reminder

This option turns off the ring reminder for a line with the Call Forwarding feature. Lines with the IRR option still forward calls, but do not have a ring reminder.

ITD - inter-LATA toll denied

The territory of AT&T is divided into local access transport areas (LATA). This option applies to lines that are denied originating inter-LATA toll calls.

LENLINES (continued)

LCDR - local call detail recording

If the office is set up for local automatic message accounting (LAMA), this option can be assigned to lines for which details of all local calls originated by the line must be recorded on the AMA tape. This option can be assigned to an inward wide area telephone service (INWATS) line if a count of calls to the INWATS line is required.

Note: Option SDSDENY is assigned to a line using the service order utility (SERVORD).

LDSA - long distance signal activate

This option allows temporary activation/deactivation of Long Distance Alerting (LDA) functionality on a per-line basis by one of the following methods:

- The subscriber dials the LDSA feature activation code (*49 or 1149). The code acts as a toggle: if option LDSA is provisioned on the subscriber's line, *49 removes the option; otherwise, *49 activates the option.
- The operating company activates or deactivates option LDSA using SERVORD or table editor.

LDSA can be added to a line only if the line has one of the following line options:

- long distance signal option (LDSO)
- long distance signal tone (LDST)
- long distance signal ring (LDSR)

LDA automatically provisions options LDSA and LDSO on all lines in the same line group if option Long Distance Signal Valid (LDSV) is assigned against the line group (in table LINEATTR) and if office parameter LDS_AUTO_PROV_ENABLED is set to Y.

Options LDSA and LDSO, LDST, or LDSR are removed if option LDSV is not provisioned against the line group. Automatic provisioning and removal of provisioning occur at the next call termination or the *49 invocation.

Long Distance Alert (LDA) is also known as Long Distance Signal (LDS), Toll Alert, and Outside Calling Area Alerting (OCCA).

LDSO - long distance signal option

This option indicates that LDA is allowed on a line. Option LDSO is assigned on a per-line basis using SERVORD or table editor.

> ***Note:*** Option LDSO is one of a group of LDA distinctive alerting options, consisting of LDSR, LDST, and LDSO. Only one of these options can be assigned to a given line. The distinctive alerting option cannot be removed from a line unless option LDSA has been removed or is being deleted at the same time.

LDA automatically provisions options LDSA and LDSO on all lines in the same line group if option LDSV is assigned against the line group (in table LINEATTR) and if office parameter LDS_AUTO_PROV_ENABLED is set to Y.

Options LDSA and LDSO, LDST, or LDSR are removed if option LDSV is not provisioned against the line group. Automatic provisioning and removal of provisioning occur at the next call termination or the *49 invocation.

LDSR - long distance signal ring

This option indicates that LDA is allowed on an idle line. Option LDSR is assigned on a per-line basis using SERVORD or table editor.

> ***Note:*** Option LDSR is one of a group of LDA distinctive alerting options, consisting of LDSR, LDST, and LDSO. Only one of these options can be assigned to a given line. The distinctive alerting option cannot be removed from a line unless option LDSA has been removed or is being deleted at the same time.

Option LDSR is not automatically provisioned. Option LDSO is automatically provisioned if LDSR or LDST is not already present on the line.

Options LDSA and LDSO, LDST, or LDSR are removed if option LDSV is not provisioned against the line group. Automatic provisioning and removal of provisioning occur at the next call termination or the *49 invocation.

LDST - long distance signal tone

This option indicates that LDA is allowed on a busy line. Option LDST is assigned on a per-line basis using SERVORD or table editor.

> ***Note:*** Option LDST is one of a group of LDA distinctive alerting options, consisting of LDSR, LDST, and LDSO. Only one of these options can be assigned to a given line. The distinctive alerting option cannot be removed from a line unless option LDSA has been removed or is being deleted at the same time.

LENLINES (continued)

Option LDST is not automatically provisioned. Option LDSO is automatically provisioned if LDSR or LDST is not already present on the line.

Options LDSA and LDSO, LDST, or LDSR are removed if option LDSV is not provisioned against the line group. Automatic provisioning and removal of provisioning occur at the next call termination or the *49 invocation.

LRA - line reversal on answer (international loads only)

On calls originating from a private branch exchange (PBX) line, the call is routed and connected through the DMS switch as a regular call. When the called subscriber answers, the answer is received by the DMS switch. If the line has the LRA line option datafilled, reversal is applied to the PBX line on answer. If the line also has the SPM (subscriber premises meter) option datafilled, a delay of 500 to 600 ms is introduced before SPM pulses are sent in order to allow the PBX line to settle down. This option can only be applied to standard (STD) lines.

LRS - line reversal on seizure (international loads only)

On calls outgoing from the DMS switch and terminating on a PBX line, if the DMS line has line option LRS datafilled, reversal is applied on seizure, followed by ringing. This reversal is maintained until answer. This option can only be applied to STD lines.

MAN - manual service

This option can be assigned to lines that are set up for originating manual service.

MCT - malicious call trace (international loads only)

This option is assignable to any line in an international switch to enable the operating company to trace and identify a malicious call originator, with the assistance of a signal from the called subscriber.

Migrate (MIGRATE)

The MIGRATE option identifies lines that are in the process of migrating from a collapsing office into a Call Server Complex (CS2000). The lines will be pre-datafilled on the new office but will be blocked from operation by the existence of the MIGRATE option until the migration is complete. Terminations to the DN will be routed to the collapsing office where the DN is still in service.

This will be accomplished during the routing stage of call processing by using the conditional routing selector (CND MIGRATE) in table FNPACONT, as well as tables HNPACONT:RTESET, OFRn and IBNRn.

NDC - no double connection

This option can be assigned to a line to ensure that no connections are made to a verification or test circuit when the line is busy.

NHT - no line hazard test

This option prevents feature NC0105 (Line Card Monitor) from testing the line for a line hazard condition (for example, low resistance, high voltage or a ring-to-ground fault on the subscriber's loop). Option NHT is valid for the following line cards only:

- NT2X17
- NT2X18
- NT6X17
- NT6X17AC
- NT6X17BA
- NT6X18
- NT6X18AA and AB
- NT6X18BA
- NT6X19

NLT - no line insulation testing

This option can be assigned to lines to ensure that they are skipped by the automatic line insulation test (ALIT).

NOH - no receiver off-hook tone

Receiver off-hook tone is not transmitted to lines with this option if the lines have a permanent signal or partial dial condition.

NPGD - negate partial ground start diagnostics

This option allows a smaller subset of the long diagnostics to run on select lines that are connected to ground start equipment programmed to answer on tip current.

> ***Note:*** When option NPGD is set in table LENLINES, the full ground start diagnostics are not performed on the line card. Loop detector, reversal relay, and ground start relaytests are skipped.

PDO - prevent deletion option

This option prevents the removal of a line from service. If you try to remove a line from service that has the PDO assigned, an error message displays and the command fails.

LENLINES (continued)

ONI - operator number identification
This option can be assigned to lines that require operator number identification. Lines that are not assigned this option are assigned as automatic number identification (ANI) lines.

PLP - plug up
This option can be assigned to lines that are in the plug-up state.

PMC - printer meter check (international loads only)
This option allows the DMS switch to generate a detailed hard copy report of all answered outgoing calls on a line with option PMC. The DMS switch is able to support up to 64 lines that have option PMC. A log report is output for every outgoing answered call on a line with option PMC.

PR1 - priority1 (international loads only)
PR2 - priority2 (international loads only)
These options define the subscriber's priority. The Chinese C1 signaling system is a variant of the CCITT signaling system (R2). C1 signaling uses a group of forward and backward signals to pass information through the network. The first group of signals (group 1 forward signals) are the KA signals that provide information on the subscriber's priority (ordinary, priority1, or priority2), charging category, and communication service class.

RAG - ring again (international loads only)
This option notifies the calling party, who has encountered a busy line on an intraoffice call, that the called line has become idle. It enables the call to be initiated again without redialing of the number. Office parameter RAG_RECALL_TIMEOUT in table OFCVAR defines the length of time the calling party has to pick up the RAG recall. Option RAG can only be assigned to a line by the operating company.

RCD - reverse coin disposal
This option can be assigned to coin first service (CCF) and coin dial tone first service (CDF) coin lines that are wired for reverse coin-collect and coin-return signals. The option causes the coin control voltages that are sent to these lines to have a reversed polarity (opposite from normal) for proper pay station functioning.

RMR - remote message register (local calls)
This option can be assigned to lines to provide tip and ring reversal on answer for local calls. The reversal can be used to increment a remote hardware register or for other purposes required by the operating company. Option RMR is allowed with option TDV (toll diversion) only if the toll diversion signal is a wink.

RMT - remote message register (nonlocal calls)

This option can be assigned to lines to provide tip and ring reversal on answer for calls other than local (for example toll, operator, or DDD). The reversal can be used to increment a remote hardware register or for other purposes required by the operating company. Option RMT is allowed with option TDV (toll diversion) only if the toll diversion signal is a wink.

RSP - restricted sent paid

This option can be assigned to lines that have zero minus denied (ZMD) or zero minus zero plus allowed (ZMZPA) line class codes (see table LINEATTR). It causes outpulsing of the ANI information digit 7 (or digit 2, in the case of ANI fail) plus the calling party's DN. Option RSP supercedes the action caused by the setting of field HOT (hotel) in table LINEATTR, and can only be used if the coinless pay station feature has been purchased. Option RSP is compatible with and can be assigned to a 1FR line.

SCR - selective charge recording (international loads only)

Subscribers whose lines have this option can have the charge for calls quoted back to them when each call is completed. Subscribers invoke this option for each call by keying in a service code before dialing the target number. When the SCR call is completed, a log is printed that contains the call details used by the operating company staff when they ring back the subscriber to provide a quotation of the call charges. Assignment and usage charges are incurred on the feature meter as datafilled.

SDS - special delivery service

The SDS option assigns the Enhanced Busy Call Return (EBCR) service to a line. For more information on the service, consult the Enhanced Busy Call Return (EBCR) feature, RES00076. Option SDS and option SDSDENY cannot be assigned to the same line.

SDSDENY - special delivery service deny

When assigned to a line, option SDSDENY prevents the Enhanced Busy Call Return (EBCR) service from being offered on that line, even if customer group option SDS is assigned to a customer group of which the line is a member, or if the specified service(s) is offered office wide using Universal mode. For more information on the EBCR service, consult the Enhanced Busy Call Return (EBCR) feature, RES00076. Option SDSDENY and option SDS cannot be assigned to the same line.

SPM - subscriber premises meter (international loads only)

This option can be assigned to lines that require a subscriber premise meter. This option converts the assignment of a subscriber premise meter to a line option instead of being determined by metering tables datafill.

LENLINES (continued)

SRA - suppressed ringing access

Operating company personnel can assign the SRA line option to a line in order to allow suppressed ringing access to that line.

STRD - short timed release disconnect

This option provides a means to cancel long timed release disconnect (LTRD). Option LTRD is used to keep a call connection up across the network for a specified amount of time after the called party has gone on-hook. The DMS switch determines the calls to which option LTRD is applied. When option STRD is applied to a line, option LTRD is disabled if it applies to that call. Option STRD affects line-to-trunk calls on the trunk group types ATC, IT, SC, TOPS, T2, and TO. However, STRD does not affect PRA trunks because PRA trunks are built on the IBN platform, which does not support TRD.

Option STRD is controlled by office parameter SHORT_TIMED_RELEASE_DISC_TIME in tables OFCENG and OFCSTD.

SUS - suspended service

This option can be assigned to lines that have originating and terminating service suspended.

TDN - toll denied

This option applies to lines that are denied originating toll calls.

TDV - toll diversion

This option applies to PBX lines on which toll calls require diversion to the PBX attendant. The type of toll diversion signal, either reversal or wink, is controlled by the office parameter TOLL_DIVERSION_SIGNAL in table OFCVAR.

TES - toll essential service

This option applies to lines that are allowed access to the toll network when all other lines are denied access to it through the activation of toll network protection. All lines with option TES must have option ELN.

(U3WC) - three-way calling - usage sensitive

This feature is three-way calling (3WC) with the following changes: an optional access code (*71 or 1171) is entered for U3WC activation; a billing record is generated each time the U3WC feature is activated; and a separate U3WC register group is created for Operational Measurement data. U3WC is designed to support RES and POTS lines.

U3WC feature operates in the same manner as the 3WC feature. The subscriber must be in a stable two-party call to activate the U3WC feature.

The first switch-hook flash is used to invoke the U3WC feature, then the subscriber receives a special dial tone, and an access code is entered, if required. Next, the directory number of the add-on party is dialed, and the second switch-hook flash establishes the three-way call.

WUC - wake up call (international loads only)

This option enables a subscriber to set a time for the phone to ring. When office parameter CASUAL_FEATURES_OFF in table OFCOPT is set to Y (yes), WUC becomes a line option. When the office parameter is set to N (no) WUC becomes a casual feature. Option WUC can only be added to or deleted from table LENLINES if office parameter CASUAL_FEATURES_OFF is set to Y. When the operating company assigns WUC to a line, an assignment charge is applied. No assignment changes are applied if WUC is a casual feature.

3WC - three-way calling

This option enables the customer on the assigned line to place an existing call on hold and set up an inquiry call to another subscriber. The subscriber initiating the 3WC has the ability to

- switch speech paths between held party and talking party
- connect all parties into a three-port conference
- remove the conference and reconnect to a single party

Option 3WC affects the value of the following office parameters in table OFCENG:

- NO_OF_SMALL_FTR_DATA_BLKS
- NO_OF_MEDIUM_FTR_DATA_BLKS
- NO_OF_LARGE_FTR_DATA_BLKS
- NO_OF_FTR_CONTROL_BLKS
- NO_OF_FTR_XLA_BLKS
- NUMPERMEXT
- NMULTIBLKS

LENLINES (continued)

6WC - six-way calling (international loads only)

This option enables the customer on the assigned line to place an existing call on hold and set up an inquiry call to another subscriber. The subscriber initiating the 6WC has the ability to:

- switch speech paths between the inquiry call and the parties in the conference
- connect the inquiry call into a six-port conference and add up to five parties into the conference
- remove the inquiry or conference and remain connected to remaining parties

Option 6WC affects the value of the following office parameters in table OFCENG:

- NO_OF_SMALL_FTR_DATA_BLKS
- NO_OF_MEDIUM_FTR_DATA_BLKS
- NO_OF_LARGE_FTR_DATA_BLKS
- NO_OF_FTR_CONTROL_BLKS
- NO_OF_FTR_XLA_BLKS

Datafill sequence and implications

The following tables must be datafilled before table LENLINES.

- HUNTGRP
- LINEATTR
- LNINV
- OPTCTL

Table size

Memory is dynamically allocated for this table. The maximum number of tuples depends on the number and type of line peripheral modules (PM) configured for the office.

Datafill

The following table lists datafill for table LENLINES.

Field descriptions

Field	Subfield	Entry	Explanation and action
LEN		see subfields	Line equipment number. This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN" for a complete description of field LEN and associated subfields. Field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.

For all PM types

For all PM types, datafill the additional fields listed below.

Field descriptions

Field	Subfield	Entry	Explanation and action
PTY		R1 to R5 T1 to T5 or S	Party and ringing combination. If the line is assigned to a two-, four-, eight-, or ten-party line, enter the party, R1 to R5 or T1 to T5, of the directory number (DN) assigned to the line. If the line is assigned to an individual line, enter S for single party.
RINGCODE		numeric (0 to 5)	Ring code. Enter a numeric value for the ring code assigned to the line. For international switching units, the entry in this field must be 0 (zero) for regular ringing cadence.
DN		vector of up to 15 digits (0 to 9)	Directory number. Enter the DN assigned to the line. This number can be up to 15 digits in length.
SIGTYPE		DP or DT	Signal type. Enter the type of pulsing expected. Enter DP for pulse or DT for Digitone.

LENLINES (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
SNPA		values contained in SNPANAME	Single numbering plan area name. The SNPA of the DN associated with the POTS line described by this tuple. The SNPA no longer corresponds to the STS contained in the table LINEATTR tuple associated with this line. Feature AF7145 separates STS and SNPA.
LNATTIDX		alphanumeric (1 to 16 characters)	Line attribute index. Enter the index into table LINEATTR.

LENLINES (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
OPTLIST		AMATEST, AMSG, AMSGDENY, APS, ATC, CAT1, CAT2, CAT3, CAT4, CAT5, CAT6, CAT7, CAT8, CAT9, CCW, CD0, CD1, CD2, CD3, CD4, CD5,	Option list. Enter a list of up to 20 basic options that apply to the DN. Each option must be separated by a single space. For international loads, the only options that are available and can be entered in this field are APS, CAT1, CAT2, CAT3, CAT4, CAT5, CAT6, CAT7, CAT8, CAT9, CWT, DOR, DTBI, DTM, ELN, FDN, FNT,FNO, GLTC, HOT, ICR, ICT, LRA, LRS, MCT, NHT, ONI, PLP, PMC, PR1, PR2, RAG, SCR, SPM, SUS, 3WC, and 6WC.

LENLINES (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
		CD6, CD7, CD8, CD9, CLF, COD, CPH, CWT, DENYU3WC, DOR, DTBI, DTM, ELN, FDN, FGA, FIG, FNO, FNT, GLTC, HOT, ICR, ICT, ILB, IMB, INT, IRR, ITD, LCDR, LDSA, LDSO, LDSR, LDST, LRA, LRS, MAN, MCT, MIGRATE, NDC, NHT, NLT, NOH, NPGD, ONI, PDO, PLP, PMC, PR1, PR2, RAG, RCD, RMR, RMT, RSP, SCR, SDS, SDSDENY, SPM, STRD, SUS, TDN, TDV, TES, U3WC, WUC, 3WC, 6WC	Options APS, DTBI, FDN, ICR, ICT, LRA, LRS, MCT, PMC, PR1, PR2, RAG, SCR, SPM, and 6WC are not available for loads other than international. Refer to tables LCCOPT and OPTOPT for compatibility information. Option STRD supports the use of T2 type trunks during a line-to-trunk call. Option CLF is not compatible with originating ISDN calls. See note under CLF at “Available options for table LENLINES" in this data schema description. Option MIGRATE is supported only by the North American DN system and dialplan. For a description of each option, see “Available options for table LENLINES" in this data schema description.

Datafill example

An example of datafill for table LENLINES, along with a line-by-line description of the table entries for this example, is provided below.

Entry line (a) is for an OUTWATS line with the option denied terminating service (DTM). For OUTWATS treatment and bands associated with this line, see table LENFEAT.

Entry line (b) is for an INWATS line with the option denied origination service (DOR).

Entry lines (c) are for PBX lines from hunt groups 0 and 1 with the options no receiver off-hook (NOH), toll diversion (TDV) and flash ignore (FIG). For hunt group and member list data for these lines, see tables HUNTGRP and HUNTMEM. The ground start option for lines with DN 725-2865 is listed in table LNINV.

Entry line (d) is for an individual line that transmits data and is protected from double connection with the no double connection (NDC) option. For the Automatic Line feature data for this line, see table LENFEAT.

Entry lines (e) are for individual DN hunt lines with options operator number identification (ONI) and free number (FNT). For DN hunt group and member list data for these lines, see tables HUNTGRP and HUNTMEM.

Entry line (f) is for an individual line with the manual service (MAN) option.

Entry line (g) is for an individual line with options essential line (ELN) and toll essential service (TES).

Entry line (h) is for a tip 2 party of an eight-party line that is assigned to ring code 2 and has no options.

Entry line (j) is for an individual line with frequency selective ringing that is assigned to ring code 3 and has no line insulation test (NLT).

Entry line (k) is for a PBX line with the remote message register (RMR) option.

Entry line (l) is for a flat-rate party with automatic time and charges (ATC) option.

Entry line (m) is for a flat-rate line with the call waiting (CWT) option.

Entry line (n) is for a flat-rate line with the local call detail recording (LCDR) option.

Entry line (p) is for a flat-rate line with the malicious call hold (MCH) option.

Entry line (q) is for a flat-rate line with the three-way calling (3WC) option.

Entry line (r) is for a flat-rate line with no options. The line is located at the Merivale remote location which has a site name of MERV.

LENLINES (continued)

Entry line (s) is for a multiparty (more than four parties) line with circle digit operation. The DN of the party line is 725-1620 and is assigned circle digit 2 (option CD2). The circle digit of a multiparty line is defined by an option in table LENLINES, as opposed to example (t), which defines the circle digit for a single-, two-, or four-party line by an office parameter.

Entry line (t) is for a single party line with circle digit operation. The office parameter SPDD_DIGIT in table OFCENG defines the circle digit for single-, two-, and four-party lines as 3. The DN of the single-party line is 725-1593.

Entry line (u) is for a ZMD line (see table LINEATTR) with option restricted sent paid (RSP), identifying it as a coinless pay station to TSPS by ANI information digit 7.

Entry line (v) is for a station with the cutoff on disconnect (COD) option.

Entry line (w) is for a CDF coin line with the reverse coin disposal (RCD) option.

Entry line (x) is for a station with the cancel call waiting (CCW) option.

Entry line (y) is for an individual line with the no line hazard test (NHT) option.

Entry line (z) is for an individual line with the ground loop test cancel (GLTC) option.

Entry line (aa) is for an individual line with the free number origination (FNO) option.

Entry line (ab) is for an individual line assigned to the negate partial ground start diagnostics (NPGD) option.

Entry line (ac) is for an individual line assigned to the long distance signal activate (LDSA) option and to the long distance signal option (LDSO).

Entry line (ad) is for a POTS line with options access to messaging (AMSG) and (AMSGDENY)

LENLINES (continued)

MAP display example for table LENLINES

```
           LEN
             PTY RINGCODE     DN
                           SIGTYPE  LNATTIDX            OPTLIST
_____________________________________________________________________

(a) HOST     01 1 04 06
                      S       0 7251688
                                      DP        6 (DTM)             $
(b) HOST     01 0 04 08
                      S       0 7251789
                                      DP        7 (DOR)             $
(c) HOST     01 0 04 07
                      S       0 7252865
                                      DP        1 (FIG) (NOH) (TDV) $
    HOST     00 0 05 07
                      S       0 7252865
                                      DP        1 (FIG) (NOH) (TDV) $
    HOST     00 1 05 07
                      S       0 7252865
                                      DP        1 (FIG) (NOH) (TDV) $
    HOST     01 0 03 04
                      S       0 7252870
                                      DT        1 (TDV) (NOH) (FIG) $
    HOST     01 1 04 07
                      S       0 7252870
                                      DT        1 (TDV) (NOH) (FIG) $
    HOST     01 1 02 08
                      S       0 7252870
                                      DT        1 (TDV) (NOH) (FIG) $
(d) HOST     00 1 04 05
                      S       0 7251671
                                      DP        0 (NDC)             $
(e) HOST     00 1 05 04
                      S       0 7252855
                                      DT        0 (FNT) (ONI)       $
```

LENLINES (continued)

MAP display example for table LENLINES (continued)

```
          LEN
            PTY RINGCODE     DN
                        SIGTYPE  LNATTIDX            OPTLIST
_____________________________________________________________________

    HOST     00 0 05 04
                  S         0 7252856
                                     DT        0 (FNT) (ONI)       $
    HOST     00 1 06 05
                  S         0 7252857
                                     DT        0 (FNT) (ONI)       $
(f) HOST     01 1 05 07
                  S         0 7251990
                                     DP        0 (MAN)             $
(g) HOST     01 0 07 04
                  S         0 7251995
                                     DT        0 (TES) (ELN)       $
(h) HOST     01 1 07 04
                  T2        2 7251998
                                     DP        5                   $
(j) HOST     01 1 03 04
                  S         3 7251758
                                     DT        0 (NLT)             $
(k) HOST     01 0 05 07
                  S         0 7251787
                                     DP        1 (RMR)             $
(l) HOST     01 0 03 05
                  S         0 7251588
                                     DP        0 (ATC)             $
(m) HOST     01 0 07 05
                  S         0 7251589
                                     DT        0 (CWT)             $
(n) HOST     01 0 04 06
                  0         0 7251990
                                     DT        0 (LCDR)            $
```

LENLINES (continued)

MAP display example for table LENLINES (continued)

```
            LEN
              PTY RINGCODE     DN
                              SIGTYPE  LNATTIDX            OPTLIST
_____________________________________________________________________

(p) HOST  00 0 05 08
                    0         0 7251591
                                        DP        0 (CLF) (MCH)      $
(q) HOST  00 1 05 05
                    0         0 7251592
                                        DT        0 (3WC)            $
(r) MERV  01 1 06 07
                    S         0 8282931
                                        DP        0                  $
(s) HOST  00 0 04 09
                    T1        2 7251620
                                        DP        5 (CD2)            $
(t) HOST  00 0 04 10
                    S         0 7251593
                                        DP        0                  $
(u) HOST  00 1 06 06
                    S         0 7259100
                                        DT       10 (RSP)            $
(v) HOST  00 1 06 08
                    S         0 7252859
                                        DP       10 (COD)            $
(w) HOST  01 1 02 08
                    S         0 4817123
                                        DT        1 (RCD)            $
(x) HOST  00 0 00 01
                    S         0 6211233
                                        DP        6 (CWT) (CCW)      $
(y) HOST  01 0 07 03
                    S         0 7251999
                                        DT        0 (NHT)            $
```

LENLINES (continued)

MAP display example for table LENLINES (continued)

```
           LEN
             PTY RINGCODE     DN
                           SIGTYPE  LNATTIDX            OPTLIST
_____________________________________________________________________

  (Z) HOST    01 0 07 07
                         S       0 7252000
                                         DT        0 (GLTC            $
 (aa) HOST    01 0 07 04
                         S       0 7252021
                                         DT        7 (FNO)            $
 (ab) HOST    02 1 19 11
                         S       0 6216000
                                         DP        0 (NPGD)           $
 (ac) HOST    01 0 07 07
                         S       0 5551212
                                         DT        501 (LDSA) (LDSO)  $
 (ad) HOST    00 0 03 03
                         S       0 619 6212416
                                         DT        0 (AMSG)           $
      HOST    00 0 03 04
                         S       0 619 6212417
                                         DT        0 (AMSGDENY)       $

      HOST    00 0 00 01
                         S       0 619 5209001
                                DT 0 619_P520_0 L619_LATA_0 (MIGRATE) $
```

Error messages

The following error message appears if an attempt is made to datafill this table using the table editor:

```
Protected table, use SERVORD to change.
```

This error message was added for the release of NA005 in accordance with feature AN1653 (Enforcement of SERVORD).

All additions, deletions and changes must be entered using the Service Order System (SERVORD). For information, refer to the *SERVORD Reference Manual*.

RSDT error message

This message is only generated when SERVORD protection is off.

RSDT error message for table LENLINES

Error message	Description	Result
CHANGING THE RSDT DN IS NOT ALLOWED	Attempting to change an RSDT IN_EFFECT line in table LENLINES.	The change is blocked and an error message is generated at the MAP.

Table history

SN06 (DMS)

Development activity 00001207 introduces changes to the OPTLIST subfield of the LENLINES table. This subfield now supports MIGRATE.

NA013

Development activity 59013430 introduces changes to the OPTLIST subfield of the LENLINES table. This subfield now supports PDO.

NA012

Development activity 59007050 introduces changes to field LNATTIDX of table LENLINES. This field now accepts an alphanumeric string instead of an integer string.

NA010

Added the RSDT error message.

Added the options Access to Messaging (AMSG), Access to Messaging Deny (AMSGDENY), and Messaging Deactivation (MSGDEACT) in accordance with feature AJ5115 (Service Offering Decoupling of SDS).

Added datafill examples for AMSG and AMSGDENY.

NA009

Added the DENYSRA information.

Added the SNPA field. The SNPA field displays between the RINGCODE and DN fields.

NA008

Increased the range of field LNATTIDX to 31 999.

LENLINES (end)

NA007

Increased the range of field LNATTIDX to 4095.

NA006

Line options LDSR and LDST added in accordance with Long Distance Alerting Enhancement.

NA005

Added LDSV information to LDSO and LDSA options.

Error message information added to “Error messages" section in accordance with feature AN1653 (Enforcement of SERVORD).

Option SDSDENY was added to field OPTLIST in accordance with feature AQ1404 (Special Delivery Service Enhancements).

NA004

Option NPGD was added to field OPTLIST in accordance with feature AG4084 (Enhanced 6X18 Diagnostics).

Option SDS was added to field OPTLIST in accordance with feature AQ1335 (Special Delivery Service).

NA003

Ring-to-ground fault detection capability added to NHT - no line hazard test description.

Line card types added to NHT - no line hazard test description.

NA002

Line options LDSO and LDSA added.

BCS36

Options CAT0, CAT1, CAT2, CAT3, CAT4, CAT5, CAT6, CAT7, CAT8, and CAT9 were added to field OPTLIST in accordance with feature TA0122 (CIS subscriber categories).

LGINCTRL

Table name

Login Control Table

Functional description

Table LGINCTRL allows the dump and restore of the login control data. This capability allows the preservation of data when the operating company upgrades software. Table LGINCTRL is an extension of table TERMDEV. You can only add or delete tuples from table LGINCTRL through table TERMDEV tuples.

Use the optional command interpreter (CI) command LOGINCONTROL to change tuples in table LGINCTRL.

Datafill sequence and meaning

Enter data in table TERMDEV before you enter data in table LGINCTRL.

Table size

0 to 127 tuples

LGINCTRL (continued)

Datafill

The datafill for table LGINCTRL appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
TERMDES		alphanumeric (a maximum of 8 characters)	*Terminal designation*. This field defines the name defined for each of the terminal types. Assign all trunk test positions (TTPs) first. Start with the MAP (TTP:0). Assign the TTPs that remain in numeric order. After you assign the TTPs, assign the other terminal devices. These devices include printers and video display units (VDU).
DISTIME		-1 to 32767	*Disabled time*. This field defines the time that the system disables the terminal. The time is in seconds. The system does not accept entries out of the range indicated. The default value is -1 (always).
MAXLOGIN		1 to 32767	*Maximum login time*. This field defines the time that you have to login. The system disables you after this time expires. The time is in seconds. The system does not accept entries out of the range indicated. The default value is 60 (60 s).
MAXIDLE		-1 to 32767	*Maximum idle time*. This field defines the maximum time that the terminal can remain idle. The time is in seconds. The system does not accept entries out of the range indicated. The default value is -1 (forever).
Note: You can enter a value of less than -1 (minus one) for fields DISTIME, MAXLOGIN, MAXIDLE or MAXRETRY. When this event occurs, the system aborts the feature. The login control increase is optional. Some or all of these fields are not active in the load. Other fields depend on other optional features, like BC1043 (Automatic Dial Back).			

LGINCTRL (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
MAXRETRY		-1 to 32767	*Login retries*. This field defines the number of tries available for login. The system does not accept entries out of the range indicated. The default value is 4.
DISABLON		ALL LC_ DIALBACK CALLFAIL LC_ DIALBACK LOGINFAIL LC_IDLE TIMEOUT LC_ LOGONFAIL LC_LOGON TIMEOUT LC_LOGOUT LC_OPEN _COND NONE	LOGIN AUTO DISABLE EVENT. This field defines the set of events that disable a terminal. The entries are as follows: • ALL. All conditions are in effect. • LC_DIALBACKCALLFAIL. Modem dialback call failed. • LC_DIALBACKLOGINFAIL. Modem dialback login failed. • LC_IDLETIMEOUT. Terminal idle time-out. • LC_LOGONFAIL. Logon failed. • LC_LOGONTIMEOUT. Logon time-out. • LC_LOGOUT. User logged out. • LC_OPEN_COND. Open condition. • NONE (no conditions are in effect)
FRCOUT		Y or N	*Force-logged out*. The value Y (yes) indicates that the system forces you to log out. This action occurs when you drop the line. If you do not require this action, enter N (no). The default value is N.

Note: You can enter a value of less than -1 (minus one) for fields DISTIME, MAXLOGIN, MAXIDLE or MAXRETRY. When this event occurs, the system aborts the feature. The login control increase is optional. Some or all of these fields are not active in the load. Other fields depend on other optional features, like BC1043 (Automatic Dial Back).

LGINCTRL (continued)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
DIALBACK		DB_OFF DB_ANSWER or DB_DIAL	*Dialback state*. This field defines the state of a modem with dialback feature. Enter DB_OFF if the dialback feature is off. Enter DB_ANSWER if the dialback feature answers. Enter DB_DIAL if the dialback feature is in dial mode. The default value is DB_OFF.
DIALTYPE		AUTO PULSE or TONE	*Dial type*. This field defines the type of dialing. Enter AUTO for automatic dialing. Enter PULSE for pulse dialing. Enter TONE for tone dialing. The default value is AUTO.
NUMRINGS		1 to 15	*Number of rings*. This field defines the number of rings allowed before a modem call fails. The default value is 7.
NUMCALLS		1 to 7	*Number of calls*. This field defines the number of calls allowed before the system disables the terminal. The default value is 1.
Note: You can enter a value of less than -1 (minus one) for fields DISTIME, MAXLOGIN, MAXIDLE or MAXRETRY. When this event occurs, the system aborts the feature. The login control increase is optional. Some or all of these fields are not active in the load. Other fields depend on other optional features, like BC1043 (Automatic Dial Back).			

Datafill example

Sample datafill for table LGINCTRL appears in the following example.

MAP example for table LGINCTRL

```
TERMDES DISTIME  MAXLOGIN MAXIDLE  MAXRETRY                  DISABLON
FRCOUT   DIALBACK DIALTYPE         NUMRINGS  NUMCALLS
-------------------------------------------------------------------

    MAP      -1        60      -1         4                    NONE
     N    DB_OFF     AUTO                 7         1
```

Table history

BCS36

Explanations of entries in fields DISABLON, DIALBACK, and DIALTYPE were added in BCS36.

LGRPINV

LGRPINV

Logical Group Inventory

Functional description

This table contains the logical groups of gateway lines and their associated gateway controller (GWC) for lines provisioning in the CS2000 network configuration.

Provision this table with the table editor ADD command. Delete entries from this table with the table editor DELETE command.

Note: Alpha 2 release does not support the table editor CHG command to change this table.

Datafill sequence and meaning

Enter datafill into tables SERVRINV and SITE before table LGRPINV.

Enter datafill into table LNINV after you enter datafill into table LGRPINV.

Note: For the Alpha 2 release, Busy/RTS the GWC after you add an LGRP tuple.

Table size

The maximum tuples is 1000. Allocation occurs dynamically.

Datafill

The following table shows the field names, entries, and descriptions for table LGRPINV.

Table LGRPINV datafill

Field name	Correct entry	Description
GRPNO	site name (4 characters) and frame number (0 to 511) and unit number (0 to 1)	The Group Number field specifies the logical group number.
SRVRNAME	GWC and a number 0 to 255	The Server Name field consists of the PM type, which is GWC, and the PM number that correspond to a GWC number that is present in table SERVRINV.
GRPTYPE	S, M, C	The Group Type field specifies the group type. S means that the logical group name is derived from the MG9K VMG name. M means that the logical group has multiple GWs. C means that the logical group is combined with other logical groups.

Datafill example

The figure that follows shows sample datafill for table LGRPINV. In this example, the name LG was entered in table SITE. This datafill is not required.

MAP display example for table LGRPINV

```
GRPNO SRVRNAME GRPTYPE
-----------------------------
LG 01 0  GWC 0 M
```

MAP display example for table LGRPINV when MG is pre-provisioned

```
GRPNO SRVRNAME GRPTYPE
-----------------------------
LG 00 0  GWC 3 S $
```

MAP display example for table LGRPINV when MG is not preprovisioned

```
GRPNO SRVRNAME GRPTYPE
-----------------------------
LG 01 0  GWC 3 C$
```

Table history

SN06 (DMS)

Feature 89008025 increases line provisioning by reducing the average transaction time through pre-provisioning.

Alpha 2, CS 2000

The maximum number of tuples changed to 1000.

Alpha 1, CS 2000

This table is new for this release.

Additional information

The table transfer step of the one-night process (ONP) is supported for this table.

LIMCDINV

Table name

Link Interface Module Card Inventory Table

Functional description

Table LIMCDINV describes the cards in the link interface module (LIM) cabinet. This table contains only the following cards:

- cards on slots 7 to 32 in the local message switch (LMS) shelf. The LMS shelf is the top shelf of the LIM cabinet.

This table does not contain any cards on the bottom three shelves. These cards are parts of the LIU.

Each slot on the LIM cabinet can contain two cards. One card in front and one card in back. The front name standard is F (slots 7F to 32F). The back name standard is B (slots 7B to 32B).

A list of system cards that can be placed in LIM slots appears in the following table.

System cards that can be placed in LIM slots (Sheet 1 of 2)

Card type (description)	Front PECs	Back PECs
Message switch processor (MSP)	NT9X13DB NT9X13DD NT9X13DE	NT9X26AA NT9X26AB
Processor bus (P-bus) terminator	NT9X49CA	
Transaction bus (T-bus) access	NT9X52AA	
T-bus/F-bus interface (TFI)	NT9X73BA NT9X73BB NT9X73CA	NT9X79BA NT9X79BB
Frame transport bus (F-bus) terminator	NT9X74AA	NT9X79AA NT9X79BA
Clock	NT9X53AA NT9X53AD	
Memory (24 Mbyte)	NT9X14DB	
Mapper	NT9X15AA	

System cards that can be placed in LIM slots (Sheet 2 of 2)

Card type (description)	Front PECs	Back PECs
DS30 interface	NT9X17AA, NT9X17DA	NT9X23BA
DS512 interface	NT9X17AD	NT9X62BB

The following hardware product engineering codes (PECs) support the two-slot LIU7:

- NT9X73BA (TFI) as the rate adapter
- NT9X72BA as the LIU7 shelf

The only system card you can delete from this table is the NT9X14 memory card. You cannot add system cards to the table. To change the configuration card, the LIM unit must be manual busy or the whole LIM must be offline. You can only change field PEC.

Datafill sequence and meaning

Enter data in table LIMINV before you enter data in table LIMCDINV.

Table size

0 to 300 tuples

Datafill

The datafill for table LIMCDINV appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LIM		0 to 16	*Link interface module number* Enter the link interface module (LIM) number.
SHELF		0 to 3	*Shelf* Enter the shelf that the card is on.
SLOT		7 to 32	*Card slot position* Enter the card slot position number that the card is on.

LIMCDINV (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
CARDTYPE		DS30, MEMORY, CLOCK, PBUS, TBUSACC, FBUS, MAPPER, TFI, DS512, or MSP	*Card type* Enter the card type that is in the slot position. Entries outside this range are invalid.
CARDINFO		see subfields	*Card information* This field contains subfields FRONTPEC and BACKPEC. These subfields list PEC entries for the front and back cards in the LIM slots. The value in field CARDTYPE determines the applicability of the subfields and the PEC entries.

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	FRONTPEC	NT9X13DA NT9X13DB NT9X13DD NT9X13DE NT9X14BA NT9X14BB NT9X14DA NT9X14DB NT9X15AA NT9X17AA NT9X17AC NT9X17AD NT9X17CA NT9X17DA NT9X49CA NT9X49CB NT9X49CC NT9X52AA NT9X53AA NT9X53AD NT9X73AA NT9X73BA NT9X73BB NT9X74BA	*Front slot PEC* Enter the PEC for the card in the front slot. The NT9X73BA is the default rate adapter PEC. The system enters this PEC automatically with the addition of a link peripheral processor (LPP) in table LIMINV. The NT9X73BB is the default rate adapter PEC. The system enters this PEC three times for each LMS automatically with the addition of an enhanced link peripheral processor (ELPP) in table LIMINV. With the entry of NT9X73BB, the system also enters automatically PEC NT9X79BB three times for each LMS. ***Note:*** The system enters automatically the default datafill for the ELPP.
	BACKPEC	NT9X23BA NT9X23DA NT9X26AA NT9X26AB NT9X62CB NT9X62BB NT9X73BB NT9X79AA NT9X79BA NT9X79BB	*Back slot PEC* Enter the PEC for the card in the back slot.

Datafill example

Sample datafill for table LIMCDINV appears in the following examples.

This MAP display represents an LPP.

LIMCDINV (continued)

MAP example for table LIMCDINV

```
LIM SHELF SLOT CARDTYPE                  CARDINFO
___________________________________________________________

  0     0    7     PBUS                  NT9X49CA
  0     0    8      TFI                  NT9X73BA NT9X79BA
  0     0    9     DS30                  NT9X17AA NT9X23BA
  0     0   10     DS30                  NT9X17AA NT9X23BA
  0     0   15   MAPPER                  NT9X15AA
  0     0   16   MEMORY                  NT9X14DB
  0     0   17      MSP                  NT9X13DB NT9X26AA
  0     0   18    CLOCK                  NT9X53AA
  0     0   19  TBUSACC                  NT9X52AA
  0     0   20  TBUSACC                  NT9X52AA
  0     0   21    CLOCK                  NT9X53AA
  0     0   22      MSP                  NT9X13DB NT9X26AA
  0     0   23   MEMORY                  NT9X14DB
  0     0   24   MAPPER                  NT9X15AA
  0     0   29     DS30                  NT9X17AA NT9X23BA
  0     0   30     DS30                  NT9X17AA NT9X23BA
  0     0   31      TFI                  NT9X73BA NT9X79BA
  0     0   32     PBUS                  NT9X49CA
```

This MAP display represents an ELPP with triple F-bus configuration.

MAP example for table LIMCDINV

LIM	SHELF	SLOT	CARDTYPE	CARDINFO
5	0	7	PBUS	NT9X49CC
5	0	9	DS512	NT9X17AD NT9X62BB
5	0	10	DS512	NT9X17AD NT9X62BB
5	0	11	TFI	NT9X73BB NT9X79BB
5	0	12	TFI	NT9X73BB NT9X79BB
5	0	13	TFI	NT9X73BB NT9X79BB
5	0	15	MAPPER	NT9X15AA
5	0	17	MSP	NT9X13DE NT9X26AB
5	0	18	CLOCK	NT9X53AD
5	0	29	TBUSACC	NT9X52AA
5	0	20	TBUSACC	NT9X52AA
5	0	21	CLOCK	NT9X53AD
5	0	22	MSP	NT9X13DE NT9X26AB
5	0	24	MAPPER	NT9X15AA
5	0	26	TFI	NT9X73BB NT9X79BB
5	0	27	TFI	NT9X73BB NT9X79BB
5	0	28	TFI	NT9X73BB NT9X79BB
5	0	29	DS512	NT9X17AD NT9X62BB
5	0	30	DS512	NT9X17AD NT9X62BB
5	0	32	PBUS	NT9X49CC

Table history

TL11

Changed default datafill information for field FRONTPEC.

TL07

The range of values in field CARDINFO was increased in TL07 to add the following cards:

- NT9X17AD
- NT9X62BB
- NT9X13DE
- NT9X26AA
- NT9X26AB
- NT9X73BB
- NT9X73CA
- NT9X79BB

LIMCDINV (end)

BASE05

The following values were added in BASE05:

- value DS512 to field CARDTYPE
- value NT9X17AD to subfield FRONTPEC
- value NT9X62CB to subfield BACKPEC

Additional information

New warning and error messages are introduced for PECs introduced in CSP11.

LIMINV

Table name

Link Interface Module Inventory Table

Functional description

Table LIMINV contains an inventory of the link interface modules (LIM) in an office and includes the following information:

- the location of each LIM
- the type of software load running in the LIM
- the type of cabinet that houses the LIM

The location information for the LIM includes the building floor number and the row in which the LIM is located. The software information contains the loadname in table PMLOADS. The cabinet information includes the type of cabinet housing the LIM and the type of shelf containing the local message switch (LMS).

Datafill one tuple for every LIM that is present. The standard table editor operations can be performed on the LIMINV tuples with the following two restrictions:

- In order to delete a tuple in table LIMINV, the LIM must be offline and all ports on the LIM must be detached.
- No F-bus can be datafilled against the LIM.

Datafill sequence and implications

Table LIMINV automatically datafills table LIMCDINV. Check table LIMCDINV to ensure that the default datafill of cards does not differ from the cards installed. In order to change tuples in table LIMCDINV, the LIM or LIM unit must be either manual busy or offline.

Datafill tables SUSHELF and LIMPTINV after table LIMINV.

Table size

0 to 16 tuples

Each tuple has 13 words of protected store and 4 words of unprotected store. Operating company personnel can allocate up to 289 words of store for the table (for example $[13 + 4] \times 17 = 289$).

LIMINV (continued)

Datafill

The following table lists datafill for table LIMINV.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LIM		0 to 16	*Link interface module number* Enter the LIM number.
FLOOR		0 to 99	*Floor* Enter the floor on which the LIM is located.
ROW		A to HJ to NP to ZAA to HHJJ to NNorPP to ZZ	*Row* Enter the row in which the LIM is located.
POSITION		0 to 99	*Position* Enter the position of the cabinet containing the LIM.
CABTYPE		LIM	*Cabinet type* Enter the cabinet type in which the LIM resides. LIM is the only valid entry.
CABNUM		0 to 511	*Cabinet number* Enter the cabinet number assigned to the cabinet.
LOAD		alphanumeric (vector of up to 8 characters)	*Load name* Enter the loadname of the software load in the LIM. The loadname must be present in table PMLOADS. The loadname entry in table PMLOADS must point to the correct physical file.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
CABPEC		NT9X70AA NT9X70BA NT9X70CAN T9X70BB	*Cabinet product engineering code* Enter the cabinet product engineering code (PEC). NT9X70AA (for link peripheral processor [LPP] cabinet) NT9X70BA (for 36-link interface unit, LPP cabinet) NT9X70CA (for ELPP cabinet only) *Note:* NT9X70CA is only allowed as initial datafill for the ELPP. NT9X70BB (for 36-LPP cabinet) *Note:* Only LPP cabinets NT9X70BA and NT9X70BB can be upgraded to have fiber links.
SHLF0PEC		NT9X71AA NT9X71AB	*Shelf number product engineering code* Enter the PEC of shelf 0, which resides on the first shelf of the LIM and contains the LMS shelf.
MTCEVRSN		1.0	*Maintenance version* Enter 1.0, which is the only valid entry.

Datafill example

The following example shows sample datafill for table LIMINV.

MAP display example for table LIMINV

```
LIM FLOOR ROW POSITION CABTYPE CABNUM   LOAD   CABPEC SHLF0PEC MTCEVRSN
_____________________________________________________________________

  1     1   J       0     LIM    500 LPC04AQ NT9X70BA NT9X71AB  1.0
```

LIMINV (end)

Table history

TL11

Corrected table size.

TL07

Increased range of field CABPEC to support triple F-bus configuration (NT9X70CA) and LPP cabinet frame (NT9X70BB).

CSP04

Added read-only field MTCEVRSN in accordance with feature Deliver LIM Maintenance Evolution.

Supplementary information

New warning and error messages have been introduced for cabinet PECs NT9X70BB and NT9X70CA in CSP11.

LIMPTINV

Table name

Link Interface Module Port Inventory Table

Functional description

Table LIMPTINV describes the port connection on each link interface module (LIM). The description includes the following for each port:

- the LIM number
- the location of the port on the LIM
- the shelf number of the port, which must be 0
- the description of the connection of the port. This description occurs in terms of the name, number, card, and port of the node at the other end of the link.

To add or delete a port entry, the local message switch (LMS) must be manually busy. Another option is for the LIM to be manually busy or offline (OFFL).

When you define an inter-LIM unit link, add only one tuple to table LIMPTINV. An inter-LIM unit link is a link that connects the two units of an LIM. The other tuple represents the link from the destination port. Use the information in the first tuple to enter data in the other tuple. When you delete an inter-LIM unit link, delete only one tuple to table LIMPTINV. The system deletes the other tuples.

Datafill sequence and meaning

Enter data in the following tables before you enter data in table LIMPTINV:

- LIMINV
- LIMCDINV

Table size

0 to 272 tuples

LIMPTINV (continued)

Datafill

Datafill for table LIMPTINV appears in the following table.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LIM		0 to 16	*Link interface module number*. Enter the number assigned to the LIM.
SLOT		7 to 32	*Card slot position*. Enter the slot number that contains the card.
PORT		0 to 3	*Port*. Enter the port number on the card.
SHELF		0 to 3	*Shelf*. Enter the shelf that contains the card.
PROTOCOL		DMSY, NONE, DS30, MUSX, FRAMER	*Protocol*. Enter the protocol used at the port. Entries out of this range are not correct.
LINKDEST		MS or LIM	*Link destination*. This field is a selector that describes the node at the other end of the link. Enter MS if the node at the other end of the link is a message switch. Enter LIM if the node at the other end of the link is a link interface module.

LINKDEST = MS

Enter data in subfield LINKINFO if the entry is MS in field LINKDEST. A description of how to enter data in subfield LINKINFO appears in the following table.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	LINKINFO	see refinements	*Link information*. This subfield contains refinements MS, SLOT, and PORT.
	MS	0 to 1	*Message switch number*. Enter the number of the MS. The MS is the node at the other end of the link.

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	SLOT	1 to 26	*Card position.* Enter the card position on the MS at the other end of the link.
	PORT	0 to 15	*Port number.* Enter the number that attaches to the MS at the other end of the link. ***Note:*** The card and port type entries for the LMS must be compatible. These entries must be compatible with the card and port type entries for the destination MS.

LINKDEST = LIM

Enter data in subfield LINKINFO if LIM is the entry in field LINKDEST. A description of how to enter data in subfield LINKINFO appears in the following table.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	LINKINFO	see refinements	*Link information.* This subfield contains refinements LIM, SLOT, and PORT.
	LIM	0 to 16	*Link interface module number.* Enter the number of the LIM. Link interface is the node at the other end of the link.
	SLOT	7 to 32	*Card position.* Enter the card position on the LIM at the other end of the link.
	PORT	0 to 3	*Port number.* Enter the number that attaches to the LIM at the other end of the link. ***Note:*** The card and port type entries for the LMS must be compatible. These entries must be compatible with the card and port type entries for the destination LMS.

Datafill example

Sample datafill for table LIMPTINV appears in the following example.

LIMPTINV (end)

MAP example for table LIMPTINV

```
LIM SLOT PORT SHELF PROTOCOL LINKDEST    LINKINFO
_____________________________________________________________________

  1    9    0     0     DMSY       MS 1   26    0
  1    9    1     0     DMSY       MS 0   26    0
  1    9    2     0     DMSY     LIM  1   30   2
  1   10    0     0     DMSY       MS 0   27    1
  1   10    1     0     DMSY       MS 1   27    1
  1   10    2     0     DMSY     LIM  1   29   2
  1   29    0     0     DMSY       MS 1   27    3
  1   29    1     0     DMSY       MS 0   27    3
  1   29    2     0     DMSY     LIM  1   10   2
  1   30    0     0     DMSY       MS 0   26    2
  1   30    1     0     DMSY       MS 1   26    2
  1   30    2     0     DMSY     LIM  1   9   2
```

LINEATTR

Table name

Line Attribute

Functional description

Line attributes are assigned to regular lines in table LENLINES, to Meridian stations and attendant consoles in Meridian Digital Centrex (MDC) translation tables, to residential enhanced services (RES) lines in table IBNLINES, to single-line basic rate interface (SLBRI) lines in table KSETLINE, and to wireless lines in table CELLCUST.

NA011 feature AU3279, LINEATTR SERVORD Enhancements, split table LINEATTR (Line Attribute) into three tables to make data management easier:

- LINEATTR
- RATEAREA
- XLAPLAN

The LINEATTR Compression Tool feature (59017776) checks for duplicate tuples during the ADD, CHA, and REP commands. A warning message appears before the confirmation to provide an alert of a duplicate tuple. The message only generates when table OFCVAR parameter XLAPLAN_RATEAREA_SERVORD_ENABLED (XRSE) is set to MANDATORY_PROMPTS. This warning does not prevent datafill validation.

For switches using North American translations, all changes to translations fields are made in table XLAPLAN, and all changes to billing fields are made in table RATEAREA.

Partitioned table editor

In DMS switch offices with the Partitioned Table Editor (PTE) feature, the operating company can authorize a non-operating company user to use PTE to edit specified tuples of table LINEATTR.

To access a tuple in table LINEATTR, the tuple must be owned by the end user. Ownership of tuples is defined in field OWNER of table DATAOWNR.

PTE enables the operating company to limit edit access to a table for a specified end user. Access can be set to denied, read-only, change-only, or add and delete tuples. It is recommended that PTE access for non-operating company users be limited to change-only access.

For additional information on PTE and customer data change (CDC), refer to tables OWNER and DATAOWNR.

LINEATTR (continued)

Datafill sequence and meaning

The following tables must be datafilled before table LINEATTR:

- AMAGRPID
- RATEAREA
- XLAPLAN

For international switches, the following tables must be datafilled before table LINEATTR:

- DGHEAD
- FEATCHG
- PXHEAD

Table size

0 to 32 000 tuples

Memory is automatically allocated for the maximum number of tuples. Operating company personnel can delete tuples in this table if the tuple is not referenced in other tables.

Datafill

The following table lists datafill for table LINEATTR.

Field descriptions (Sheet 1 of 6)

Field	Subfield	Entry	Explanation and action
LNATTIDX		alphanumeric (up to 16 characters)	*Line attribute index* Enter the index into table LINEATTR.
LCC		alphanumeric (up to 8 characters) or NLCC	*Line class code* Enter the line class code (LCC) assigned to the line attribute index. The LCC of an existing tuple cannot be changed. If there is no LCC, enter NLCC. See the line class code table in the section “Supplementary information” for a description of the LCCs.

LINEATTR (continued)

Field descriptions (Sheet 2 of 6)

Field	Subfield	Entry	Explanation and action
CHGCLSS		CAM0, CAM1, CAM2, CAM3, CSD0, DAT0, DAT1, DAT2, DAT3, DIHS, DLHS, DLLS, INW0, LAM0, LCDR, MBG, RCFW, SPCL, TRMB, TWX0, WAT0, or NONE	*Charge class* If the switching unit is configured for local automatic message accounting (LAMA), enter the charge class assigned to the line attribute index. Otherwise, enter NONE. ***Note:*** With Bellcore CDE format, the entry is NONE except in offices with the OOC: AMA Modernization feature.
COST		HI, LO, or NT	*Class of service tone* Enter the class of service tone required: HI (high tone), LO (low tone), or NT (no tone). The class of service tone forwarded to the operator depends on the type of originator and on the values in field COST of table LINEATTR and fields CSTHTONE and CSTLTONE of table OFRT. The resulting tone for each combination of these factors is shown in the class of service tones table in “Supplementary information.”
LTG		numeric (0 to 9998)	*Line treatment group* Enter the line treatment group LTG number assigned to the line attribute index. The LTG number discriminates between customer lines assigned to the same LCC but with different routing or screening patterns. If more than one LTG number is assigned, office parameter SO_PROMPT_FOR_LTG in table OFCVAR must be set to Y.

LINEATTR (continued)

Field descriptions (Sheet 3 of 6)

Field	Subfield	Entry	Explanation and action
TRAFSNO		numeric (0 to 127)	*Traffic separation number* Enter the source and destination traffic separation number (1 to 127) assigned to the line attribute index. If a traffic separation number is not required, enter 0 (zero). Traffic separation enables a peg count of direct dial (DD), operator assisted (OA), or no prefix (NP) calls to be accumulated between an incoming source (incoming trunk or originating line attribute) and an outgoing source (outgoing trunk, terminating line attribute, tone, or announcement). For switching units with feature package NTX085AA (Traffic Separation Peg Count), the range of values for the traffic separation number is dependent on the value of office parameters TFAN_IN_MAX_NUMBER and TFAN_OUT_MAX_NUMBER in table OFCENG. For switching units without feature package NTX085AA, the range of values for the traffic separation number is 0 to 5. Refer to table TFANINT for more information on traffic separation numbers.
SFC		alphanumeric (up to 6 characters) or NILSFC	*International subscriber feature class* If the switching unit has an international load, enter an international subscriber feature class. The feature class entered here must appear in table FEATCHG. For loads other than international ones, enter NILSFC.
MDI		numeric (0 to 1023)	*Metering data index* If the switching unit has an international load, enter the metering data index assigned to the line attribute index. For loads that are not international, enter 0 (zero).
IXNAME		see subfields	*International translations system start* This field consists of subfield XLASYS and refinement XLANAME.

Field descriptions (Sheet 4 of 6)

Field	Subfield	Entry	Explanation and action
	XLASYS	AC, AM, CT, DN, FA, FT, OFC, NSC, PX, or NIL	*International translations system* If the switching unit has an international load, enter the head table name where translation starts, and datafill refinement XLANAME. For loads that are not international, enter NIL and leave refinement XLANAME blank. For an MDC equipped with the feature Open Number Translations, enter PX to direct the call to the translator name specified in refinement XLANAME. (Translation selector NET, network type DOD must be datafilled in table IBNXLA.) If the entry is other than PX or NIL, a DFIL117 log is generated and the call is sent to call not accepted (CNAC) treatment.
	XLANAME	alphanumeric (1 to 8 characters)	*International translations name* Enter the index into the head table referenced by field XLASYS.
DGCLNAME		alphanumeric (up to 8 characters) or NIL	*Digit analysis tables entry point* If the switching unit has an international load, enter a digit analysis name to serve as the entry point into the universal digit analysis tables DGHEAD and DGCODE. The name entered here must appear in table DGHEAD field DGNAME. For loads that are not international, enter NIL.
FANIDIGS		numeric (00 to 99)	*Flexible ANI information digit pairs* If the switching unit is equipped with feature BR0713 (Flexible ANI Information Digit Assignment), enter the flexible automatic number identification (FANI) information digit pair assigned to the line attribute index. Otherwise, enter 00. This digit pair is transmitted to an inter-LATA carrier (IC) or an operations support system (OSS) as part of the ANI spill (provided the IC or OSS is equipped to receive the FANI information digit pair, as indicated in field FANI of table OCCINFO).

LINEATTR (continued)

Field descriptions (Sheet 5 of 6)

Field	Subfield	Entry	Explanation and action
DFLTXLP		alphanumeric (up to 16 characters)	The DFLTXLP field is a key into table XLAPLAN. The key entered must exist in table XLAPLAN.
DFLTRA		alphanumeric (up to 16 characters)	The DFLTRA field is a key into table RATEAREA. The key entered must exist in table RATEAREA.
OPTIONS		ADMININF, AMAGRPID, HOT, LCABILL, or LDSV	*Line attribute options* This field is a vector consisting of up to three options. Enter ADMININF to create a short explanation or note regarding the use of the LINEATTR tuple, and datafill subfield ADMININF. Enter AMAGRPID if a group identity for subscription basis tariff is required, and datafill subfield AMAGRPID. Enter HOT if identification of hotel lines to the TOPS operator for time and charge is required or if the outgoing trunk group type is OP. Enter LCABILL if a non-interexchange carrier call is billable. Enter LDSV if Long Distance Signal valid (LDS) is required on a line-group basis, and datafill subfield LDSV_STATE. The LDS feature automatically provisions the LDS option (LDSO) and the LDS activate (LDSA) options on all lines in the same line group if LDSV is assigned against the line group and the office parameter LDS_AUTO_PROV_ENABLED is set to Y. The LDSO and LDSA options are removed if LDSV is not provisioned against the line group. This autoprovisioning occurs after either an incoming local or toll call terminates on the line or the end user enters the LDSA feature access code.

Field descriptions (Sheet 6 of 6)

Field	Subfield	Entry	Explanation and action
	LDSV_STATE	ACT or DEACT	*Long distance signal valid status* Enter ACT to indicate that LDSV is activated for the line group.
	AMAGRPID	alphanumeric (up to 8 characters)	*AMA group identity* Enter a group identifier defined in table AMAGRPID.
	ADMININF	alphanumeric (up to 32 characters in length)	*Administration information* Enter any string containing alphabetic characters, numeric characters, or underscores up to 32 characters. This entry provides a short explanation or note regarding the use of the LINEATTR tuple. The operating company defines the content of this entry.
CONTMARK		+ or $	*Continuation mark* Enter + if additional information for this tuple is in the next record. Otherwise, enter $ to indicate the end of the tuple.

Datafill example

The following example shows sample datafill for table LINEATTR.

MAP display example for table LINEATTR

```
LNATTIDX  LCC CHGCLSS COST LTG TRAFSNO    SFC  MDI          IXNAME
  DGCLNAME     FANIDIGS       DFLTXLP           DFLTRA        OPTIONS
-------------------------------------------------------------------------

       0  IBN    NONE   NT   0      0  NILSFC    0     PX   IDCXLA
      NIL           00     905_NPRT_0     NLCA_NILLA_0              $
```

Table history

NA014

The LINEATTR Compression Tool feature (59017776) checks for duplicate tuples during the ADD, CHA, and REP commands. A warning message appears before the confirmation to provide an alert of a duplicate tuple. The message only generates with table OFCVAR parameter

LINEATTR (continued)

XLAPLAN_RATEAREA_SERVORD_ENABLED (XRSE) set to MANDATORY_PROMPTS.

MMP13

Added subfields M6310 and M6320 to the LCC field. These fields are keys into table KSETINV.

LWW0006

Feature 59010108, Line Data and SERVORD Fold-in, incorporated the NA011 changes into LWW0006.

NA011

Split table LINEATTR into three tables to make data management easier: LINEATTR, RATEAREA, and XLAPLAN.

Added fields DFLTXLP and DFLTRA to table LINEATTR. These fields are keys into tables XLAPLAN and table RATEAREA respectively.

Moved the following fields into table XLAPLAN or table RATEAREA:

- SCRNCL
- STS
- PRTNM
- ZEROMPOS
- RESINFO
- LCANAME
- MRSA
- LATANM

NA010

Modified the LCANAME field to accept from 1 to 8 characters.

NA009

Added option ADMININF to field options.

NA008

Increased the size of table LINEATTR from 4096 tuples to 32 000 tuples.

Increased the maximum number of tuples in field LTG from 512 to 9998.

Increased the maximum number of tuples in field LNATTIDX from 4095 to 31 999.

NA007

Increased the maximum number of tuples in field LNATTIDX from 2048 to 4096.

NA006

Increased the maximum number of tuples in field LNATIDX from 1024 to 2048.

Increased number of LTGs in field LTG from 256 to 512

Increased number of NCOSes per customer group in field NCOS from 256 to 512.

NA005

Added information about the LDSV option.

Supplementary information

The following table describes class of service tones. Fields CSTHTONE and CSTLTONE are in table OFRT, and other lines refer to nonparty lines.

Class of service tones

CSTHTONE	CSTLTONE	Type of originator	Table LINEATTR COST	Resulting tone
N	N	line or trunk	don’t care	none
N	Y	line or trunk	don’t care	low
Y	N	line or trunk	don’t care	high
Y	Y	trunk	not applicable	none
Y	Y	party line	don’t care	none
Y	Y	other lines	NT	none
Y	Y	other lines	LO	low
Y	Y	other lines	HI	high

LINEATTR (continued)

The following table lists and describes line class codes.

Line class codes (Sheet 1 of 7)

LCC	Description
ADATA1	Meridian ARIES set option. Do not use in this table; refer to table IVDINV.
A2008	Meridian ARIES 2008 8-key set. Do not use in this table; refer to table IVDINV.
A2016	Meridian ARIES 2016 16-key set. Do not use in this table; refer to table IVDINV.
A2016S	Meridian ARIES 2016 secure set. Do not use in this table; refer to table IVDINV.
A2216A	Meridian ARIES 2016 Automatic Call Distribution (ACD) set. Do not use in this table; refer to table IVDINV.
A2216B	Meridian ARIES 2016 ACD set. Do not use in this table; refer to table IVDINV.
CCF	Coin first service. Assign an LCC of CCF to prepay coin lines. To define a RES CCF line, enter Y (yes) in field RESINFO. If the switching unit is not configured for 0+ dialing, set the call type in subtable STDPRTCT.STDPRT to operator assisted (OA) for digit zero (0) if the coin is returned to the subscriber on 0- calls. If the switching unit is configured for 0+ dialing, set the call type in subtable STDPRTCT.STDPRT to OA for digits 01 to 09 if the coin is returned to the subscriber on 0+ calls. The coin is automatically returned to the subscriber on 0- calls if field ZEROMPOS is other than NONE. For calls other than 0+ or 0- that route directly from the standard pretranslator, set the type of call to OA if the coin is returned to the subscriber. For calls that route through the route reference subtables, the nonstandard route selector (N) must be specified and the cancel normal charge (CANCNORC) field must be set to Y if the coin is returned to the subscriber.

Line class codes (Sheet 2 of 7)

LCC	Description
CDF	Coin dial-tone first service. Assign an LCC of CDF to dial-tone first coin lines. To define a RES CDF line, enter Y in field RESINFO. If the switching unit is not configured for 0+ dialing, set the type of call in the standard pretranslator subtable to OA for digit 0 if a deposited coin is returned on 0- calls. If the switching unit is configured for 0+ dialing, set the call type in subtable STDPRTCT.STDPRT to OA for digits 01 to 09 if the coin is returned to the subscriber on 0+ calls. The deposited coin is returned automatically to the subscriber on 0- calls if field ZEROMPOS is other than NONE. For calls other than 0+ or 0- that route directly from the standard pretranslator subtable, set the type of call to OA if the coin is returned to the subscriber. For calls that route through the route reference subtables, specify the N selector and the set the cancel normal charge (CANCNORC) field to Y if the coin is returned to the subscriber.
CFD	Coin free dialing service. Assign an LCC of CFD to coinless pay station (restricted sent paid) lines. To define a RES CFD line, enter Y in field RESINFO.
COIN	International coin line. In a switch with an international load, assign an LCC of COIN to international coin lines.
CSD	Circuit switched digital data service. Assign an LCC of CSD to circuit switched digital data service lines.
CSP	Coin semi-postpay service. Assign an LCC of CSP to semi-postpay coin lines. To define a RES CSP line, enter Y in field RESINFO.
DATA	Data unit. Do not use in this table; refer to table KSETINV.
DISP	Electronic business set with display. Do not use in this table; refer to table KSETINV.

LINEATTR (continued)

Line class codes (Sheet 3 of 7)

LCC	Description
EOW	Enhanced outward WATS. Assign an LCC of EOW to lines with enhanced outward wide area telephone service (OUTWATS) in offices with feature packages NTX186AA/AB (Equal Access End Office) and NTXA16AA [Enhanced WATS Operation (POTS)]. EOW is similar to an LCC of OWT (OUTWATS service), except that EOW can be used with or without a hunt group, and EOW can be used in conjunction with the enhanced WATS access line (EWAL) option. To define a RES EOW line, enter Y in field RESINFO.
ETW	Enhanced two-way WATS. Assign an LCC of ETW to lines with enhanced OUTWATS service in offices with feature packages NTX186AA/AB (Equal Access End Office) and NTXA16AA (Enhanced WATS Operation (POTS)). ETW is similar to an LCC of 2WW (two-way WATS), except that ETW can be used with or without a hunt group, and ETW can be used in conjunction with the enhanced WATS access line (EWAL) option. ETW is a combination of the capabilities of inward WATS (INW) and enhanced outward WATS (EOW). To define a RES ETW line, enter Y in field RESINFO.
IBN	Integrated Business Network station. Assign an LCC of IBN to Meridian Digital Centrex (MDC) stations. The line attributes for these lines are assigned in table IBNXLA tuples that have direct outward dial (DOD) access codes.
INW	INWATS service. Assign an LCC of INW to subscribers enabled to receive calls, from within specified areas, that have been placed without charge to the originating party. To define a RES INW line, enter Y in field RESINFO.
MOB	Mobile cellular service. Assign an LCC of MOB to mobile cellular subscribers.
M5008	Meridian set (8 keys). Do not use in this table; refer to table KSETINV.
M5009	Meridian set (9 keys). Do not use in this table; refer to table KSETINV.
M5018	Meridian set (18 keys). Do not use in this table; refer to table KSETINV.
M5112	Meridian set (12 keys). Do not use in this table; refer to table KSETINV.

Line class codes (Sheet 4 of 7)

LCC	Description
M5208	Meridian set (8 keys, built-in display). Do not use in this table; refer to table KSETINV.
M5209	Meridian set (9 keys, built-in display). Do not use in this table; refer to table KSETINV.
M5212	Meridian set (12 keys, built-in display, handsfree). Do not use in this table; refer to table KSETINV.
M5216	Meridian set (16 keys, built-in display, headset). Do not use in this table; refer to table KSETINV.
M5312	Meridian set (12 keys, built-in display, handsfree). Do not use in this table; refer to table KSETINV.
M5316	Meridian set (16 keys, built-in display, handsfree). Do not use in this table; refer to table KSETINV.
M5317	Meridian set (17 keys, handsfree). Do not use in this table; refer to table KSETINV.
M6310	Meridian set (10 keys, built-in display, handsfree). Do not use in this table; refer to table KSETINV.
M6320	Meridian set (20 keys, built-in display, handsfree). Do not use in this table; refer to table KSETINV.
OWT	OUTWATS service. Assign an LCC of OWT to lines with OUTWATS service. Line class code OWT is restricted to non-hunt type lines. To define a RES OWT line, enter Y in field RESINFO.
PBM	PBX message rate service. Assign an LCC of PBM to private branch exchange (PBX) message rate lines.
PBX	PBX flat rate service. Assign an LCC of PBX to PBX flat rate lines.
PDATA	Data unit. Do not use in this table; refer to table KSETINV.
PSET	Electronic business set without liquid crystal display. Do not use in this table; refer to table KSETINV.

LINEATTR (continued)

Line class codes (Sheet 5 of 7)

LCC	Description
RES	Residential Enhanced Services. Line class code RES is automatically assigned to lines with an LCC of 1FR, 1MR, OWT, EOW, INW, 2WW, ETW, CCF, CDF, CFD, CSP, ZMD, or ZMZPA whenever an option from the MDC custom calling feature set is added to the line. Conversely, if all options from the MDC custom calling feature set are removed from a line that has an LCC of RES, the LCC automatically reverts to 1FR, 1MR, OWT, EOW, INW, 2WW, ETW, CCF, CDF, CFD, CSP, ZMD, or ZMZPA.
SPC	Semipermanent connection. In a switch with an international load, assign an LCC of SPC to lines that are used to set up semipermanent connections. An SPC is one that can be set up or taken down by operating company personnel in a DMS-100 international switch. A semipermanent connection has two members. Each of the two members of the connection can be a line with an LCC of SPC or a trunk of trunk group type SPC. The subscriber can use the speech/data path for the duration of the connection. Refer to table SPECCONN for more information on semipermanent connections.
STD	Standard international POTS line. In a switch with an international load, assign an LCC of STD to standard international POTS lines.
TWX	TWX service. Assign an LCC of TWX to lines with teletypewriter exchange (TWX) service.

Line class codes (Sheet 6 of 7)

LCC	Description
VLN	Virtual line. Assign an LCC of VLN to remote call forwarding (RCF) lines. Remote call forwarding enables a subscriber to establish a directory number (DN) in one local calling area that translates to a phone in another local calling area. A remote call forwarding DN has no hardware associated with it. Calls placed to RCF DNs are automatically forwarded to the call forwarding number. RCF DNs are defined in table CFW. Field LINEATTR in table CFW indexes table LINEATTR, pointing to lines with an LCC of VLN. These lines are called virtual because no physical equipment is associated with the DN. If MUMR billing is required for an RCF line, the RCF-to-terminator leg of the call is of type no prefix (NP), and field MRSA in the associated LINEATTR tuple is datafilled with a valid multiunit message rate area (MRSA) name. Direct dial (DD) or equal access (EA) billing records are produced instead of MUMR records if the second leg of the call is not of type NP. If MUMR billing is not required for an RCF line, field MRSA in the associated LINEATTR tuple is set to nil.
ZMD	Zero minus denied service. Assign an LCC of ZMD to an individual line using a pretranslator different from the pretranslator provided for 1FR lines or the pretranslator provided for ZMZPA lines. The pretranslator for ZMD lines must be datafilled to enable only 0+ calls and to block 011 calls. This LCC can be assigned only if the switching unit is equipped to support coinless pay station lines. To define a RES ZMD line, enter Y in field RESINFO.
ZMZPA	Zero minus zero plus allowed service. Assign an LCC of ZMZPA to an individual line using a pretranslator different from the pretranslator provided for 1FR lines. The pretranslator for ZMZPA lines must be datafilled to enable only 0- and 0+ calls and to block 011 calls. This LCC can be assigned only if the switching unit is equipped to support coinless pay station lines. ZMZPA lines appear as ZMA when posted by the MAP terminal. To define a RES ZMZPA line, enter Y in field RESINFO.
1FR	Individual flat rate service. Assign an LCC of 1FR to individual flat rate lines. To define a RES 1FR line, enter Y in field RESINFO.

LINEATTR (end)

Line class codes (Sheet 7 of 7)

LCC	Description
1MR	Individual message rate service. Assign an LCC of1MR to individual message rate lines. To define a RES 1MR line, enter Y in field RESINFO.
2FR	Two-party flat rate service. Assign an LCC of 2FR to two-party flat rate lines.
2WW	Two-way WATS. Assign an LCC of 2WW to lines that have both INWATS and OUTWATS service on the same line. Line class code 2WW is restricted to hunt-type lines.
4FR	Four-party flat rate service. Assign an LCC of 4FR to four-party flat rate lines.
8FR	Eight-party flat rate service. Assign an LCC of 8FR to eight-party flat rate lines.
10FR	Ten-party flat rate service. Assign an LCC of 10FR to ten-party flat rate lines.

Automatic Message Accounting identities

If different tariff arrangements are provided by an operating company on a subscription basis, the different subscriptions can be equated to different AMA group identities. Table AMAGRPID is used to create AMA group identifiers that can then be datafilled in field OPTIONS of table LINEATTR.

LIUINV

Table name

Link Interface Unit Inventory

Functional description

Table LIUINV allows the specification of either the message switch (MS) or a link interface module (LIM) as the controlling entity to which the link interface unit (LIU) or multiple link interface unit (MLIU) is connected. An LIU-type node (for example, an LIU7) can be datafilled on either an LMS or MS. If the CCS7 link interface unit (LIU7) is datafilled on an LMS, datafill field LIMNUM; if it datafilled on an MS, datafill fields MSCARD and MSPORT.

LIUs and MLIUs can be provisioned on a LIM in a link interface shelf (LIS) or in a single shelf link peripheral processor (SSLPP).

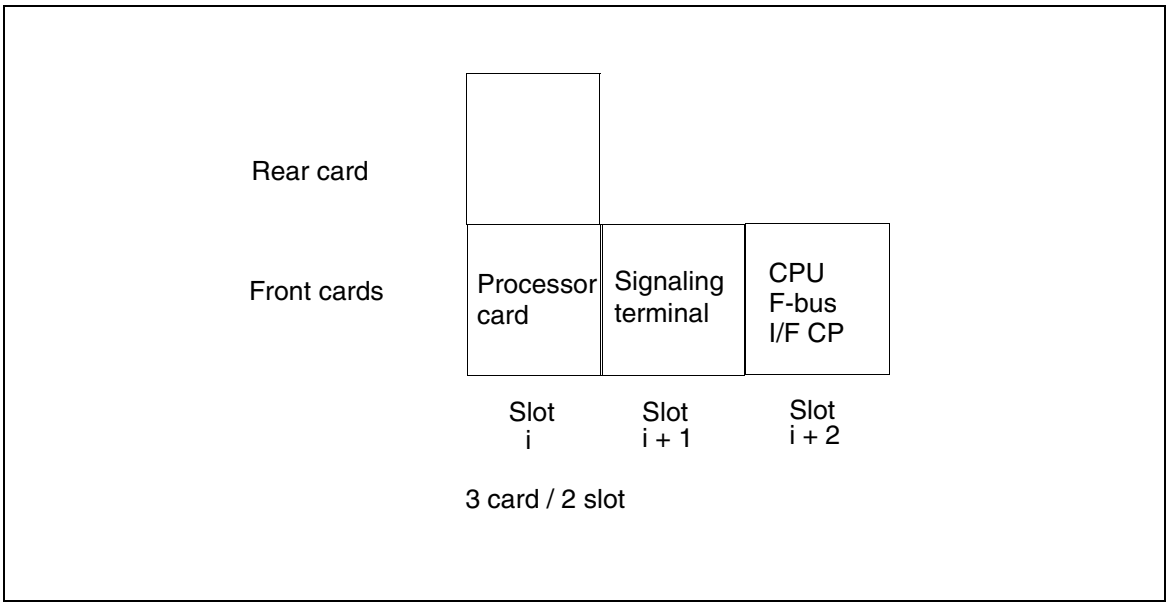
Because an office contains up to 36 LIUs on each of 17 LIMs, in addition to the 24 LIUs subtending the MS, the maximum number of LIUs datafilled in a single office is 636. The maximum number of LIUs of the same LIU type is 511.

The MLIU increases SS7 link density without adding another LPP to an office. One LPP houses up to 30 MLIUs which in turn can support up to 120 SS7 MLIU based links. One MLIU provides the same connectivity as four LIUs.

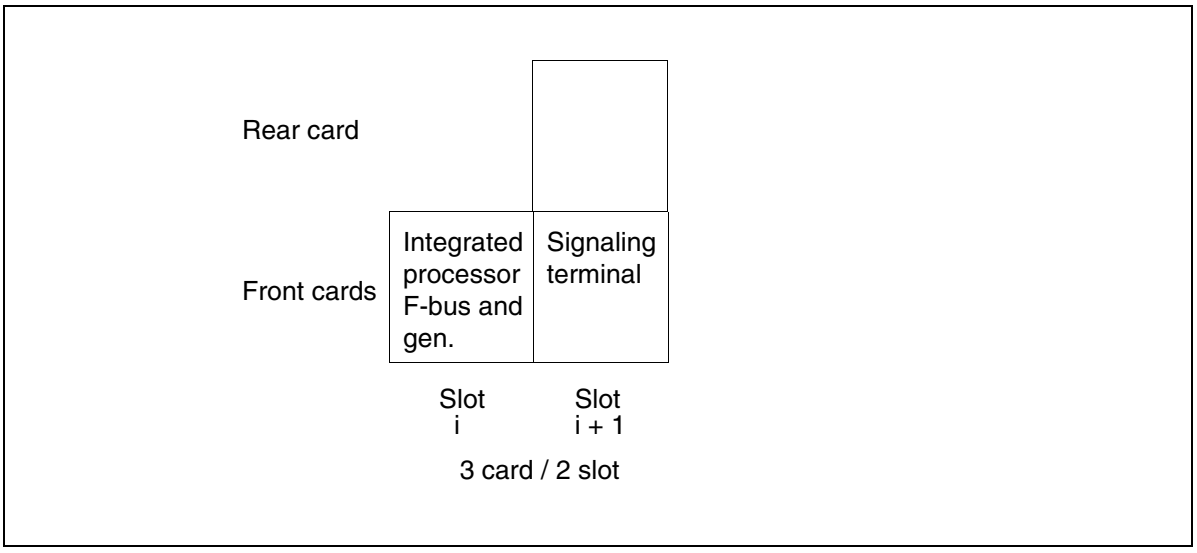
The LIU consists of either three or four cards, as shown in the following 3 figures.

LIUINV (continued)

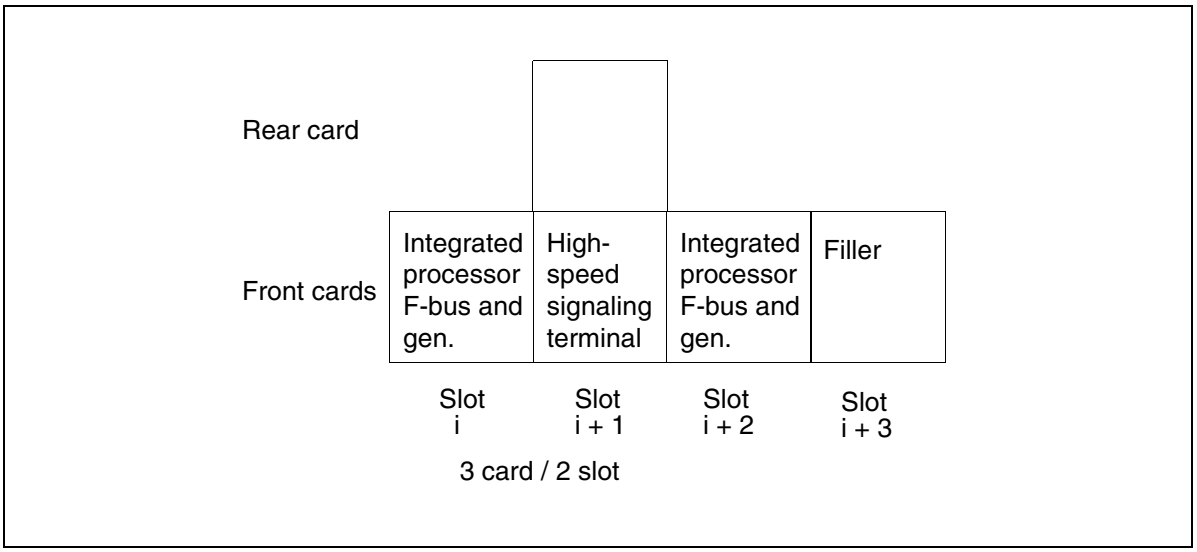
Link interface unit configuration (24-link LIM cabinet)



Link interface unit configuration (36-link LIM cabinet)



Link interface unit configuration (12-link LIM cabinet)



For related information, refer to tables LIMINV and NIUINV.

Datafill sequence and implications

The following tables must be datafilled before table LIUINV:

- LIMINV
- PMLOADS
- CARRMTC
- SUSHELF
- LIMPTINV (LIM-based LIU)
- MSCDINV (MS-based LIU)

An application processing unit (APU) must be datafilled in table LIUINV before it is datafilled in tables IPHOST, SNIXINFO, SNIXVOLS, and SNIXAPPL.

Table size

0 to 4096 tuples

Memory requirements

Maximum datastore allocated for tuples of table LIUINV is

$3 \times 408 \times 35 = 42\ 840$ words of protected datastore

LIUINV (continued)

$3 \times 408 \times 25 = 30\ 600$ words of permanent datastore

Previous LIUINV data remains unchanged on BCS application.

Datafill

The following table lists datafill for table LIUINV.

Field descriptions

Field	Subfield	Entry	Explanation and action
LIUNAME		see subfields	*Link interface unit name* This is the key field, which consists of subfields LIUTYPE and LIUNO. This field uniquely identifies the type of LIU that is present in the LPP, fiberized LPP, or enhanced LPP (ELPP).
	LIUTYPE	APU, EIU, ELIU, FRIU, LIU7, VPU, HLIU, HSLR, XLIU, SVR7, or MLIU	*Link interface unit type* Enter the LIU type. Enter ELIU if the application specific unit (ASU) type is Ethernet link interface unit. Enter MLIU as a permitted entry in the case of a multiple link interface unit. The LIU type APU is the application processing unit card with UNIX (NT9X14DB). The Ethernet interface unit (EIU) replaces the data communication processor (DCP). The frame relay interface unit (FRIU) requires the frame relay access processor card (NTEX31AA) along with a T1 analog paddle board (NTEX30AA). Though it is possible to specify an LIU7 STPEC with its associated PBINFO as an FRIU, the following error message appears: `INVALID STPEC FOR AN FRIU`

Field descriptions

Field	Subfield	Entry	Explanation and action
			Similarly, an LIU7 can be incorrectly datafilled with an FRIU STPEC and PBINFO, but the following error message appears: `INVALID STPEC FOR AN LIU7` The voice processing unit (VPU) requires a recording and announcement processor card (NTMX97AA) and a 512-channel bus interface paddle board (NTMX99AA). The X.25 and X.75 link interface unit (XLIU) requires the HDLC frame processor card (NTFX10AA) and the channel bus interface paddle board (NTFX09AA). The high speed link interface unit (HLIU) requires the high speed signaling terminal (HST) NTEX76AA and the DS-1 PB (NTEX78AA). The high-speed link router (HSLR) requires the 32-Mbyte processor and F-bus controller card (NTEX22CA). The CCS7 server (SVR7) requires the 32-Mbyte (NTEX22CA) or the 128-Mbyte (NTEX22FA) integrated processor and F-bus controller card. The card occupies the first slot of a two-slot group. The second slot remains empty. ***Note:*** The NTEX22FA card is available for the Global System for Mobile Communications release 11 (GSM11) SVR7 peripheral only.
	LIUNO	0 to 511	*Link interface unit number* Enter the number assigned to the LIU.
LOCATION		see subfields	*Location* Enter the location of the LIU on the host link interface module. This field consists of subfields CTRL, SHELFNUM, and LIUSLOT.

LIUINV (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
	CTRL	see subfield	*Control information* This field consists of subfield CONTROL.
	CONTROL	LIM or MS	*Controlling host entity* Enter MS if the host is a message switch and datafill subfields MSCARD and MSPORT. Enter LIM if the controlling host is a link interface module and datafill field LIMNUM.
	MSCARD	5 to 23	*Message switch card* If the entry in field CONTROL is MS, enter the message switch card number. Any entries outside the range indicated for this field are invalid.
	MSPORT	0 to 3	*Message switch port* If the entry in field CONTROL is MS, enter the message switch port number.
	LIMNUM	0 to 16	*Link interface module number* If the entry in field CONTROL is LIM, enter the host LIM number on which the LIU resides. Otherwise, leave this field blank.
	SHELFNUM	0 to 3	*Shelf number* Enter the shelf number, at the host LIM, on which the LIU is located.

Field descriptions

Field	Subfield	Entry	Explanation and action
	LIUSLOT	8 to 31	*Link interface slot* Enter the slot number, at the host LIM, on which the LIU resides. The LIU can occupy two or three slots. In both configurations, the leftmost card is chosen to represent the logical location of the card. That is, the link general processor (LGP) card for the four-card/three-slot configuration, and the integrated processor and frame bus (IPF) card for the three-card/two-slot configuration. All the shelves that are datafilled on a particular controller must be of the same type (two or three-slot).
LOAD		alphanumeric (vector of up to 8 characters)	*Software load name* Enter the table software load name applicable to the LIU. Prefix the load name with MCA in the case of an MLIU eg. MCA11AQ. This load is found in table PMLOADS.
PROCINFO		see subfield	*Processor information* This field specifies the product engineering code (PEC) of the processors used in the LIU. This field consists of subfield PROCPEC.

LIUINV (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
	PROCPEC		*Processor product engineering code* Enter the PEC of the processor card used in the LIU as follows: • NTEX22BA and NTEX22BB are the PECs for the 8-Mbyte integrated processor and F-bus interface cards. The difference between the NTEX22BA and NTEX22BB cards is in firmware only, the hardware is identical. • Enter NTEX22CA for the 32-Mbyte integrated processor and F-bus interface card. • Enter NTEX22DA for the 64-Mbyte integrated processor and F-bus interface card. • Enter NTEX22EA for the 96-Mbyte integrated processor and F-bus interface card. • Enter NTEX22FA for the 128-Mbyte integrated processor and F-bus interface card. ***Note:*** NTEX22DA and NTEX22EA are reserved in the software for future use. NTEX22FA is available for the GSM11 SVR7 peripheral only.

Field descriptions

Field	Subfield	Entry	Explanation and action
CARDINFO		see subfields	*Card information* This field specifies the card data and consists of subfield APPLPEC.
	APPLPEC	NTEX31AA NTEX31BA NTEX76AA NT9X76AA NT9X76CA NTFX10AA NT9X84AA NT9X14DBN TMX97AANIL STPEC	*Application product engineering code* Enter the PEC of the application card. Cards NTEX31AA and NTEX31BA are used with FRIU applications. Card NTEX76AA is used with HLIU applications. Card NT9X76AA is used with LIU7 applications. Card NT9X76CA is used with Japan ISDN user part (ISUP) LIU7 applications. Card NTFX10AA is used with XLIU applications. Card NT9X84AA is used with EIU and Ethernet link interface unit (ELIU) applications. Card NT9X14DB is used with APUX applications. Card NTMX97AA is used for VPU applications. NILSTPEC is used with SVR7 and HSLR applications.

APPLPEC = NTEX31AA or NTEX31BA

If the entry in field APPLPEC is NTEX31AA or NTEX31BA, datafill subfield PBINFO as described in the following table.

If NTEX31AA is datafilled for an FRIU, the carrier template used must be defined as SF-T1 format and not ESF.

LIUINV (continued)

The NTEX31BA PEC must be datafilled when the NTEX31BA card is used on the FRIU. A PEC mismatch is logged if a peripheral module (PM) reset occurs and the datafill does not match the installed card.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBINFO	see subfield	*Paddle board information* This field specifies the paddle board information and consists of subfield PBPEC.
	PBPEC	NTEX30AA	*Paddle board product engineering code* Enter the PEC of the paddle board and datafill the following subfields as described below.
	CLKSRCE	FBUS or EXTERNAL	*Clock source* Enter the clock source if the entry in field LIUTYPE is FRIU.
	T1_FRAMING	CHAN, FRACT, or UNCHAN	*T1 framing* Enter the T1 framing value if the entry in field LIUTYPE is FRIU. If the entry in this field is FRACT, datafill field NUMCHANS; otherwise continue datafill at field PB_LLEQ.
	NUMCHANS	4	*Number of channels* If the entry in field T1_FRAMING is FRACT, enter the number of channels on the fractional T1.
	PB_LLEQ	DS1_LLEQ_110 DS1_LLEQ_220 DS1_LLEQ_330 DS1_LLEQ_440 DS1_LLEQ_550 or DS1_LLEQ_660	*Line length equalization* Enter the line length equalization in feet used by the T1 paddle board.
	PB_CARRIDX	DEFAULT or see table CARRMTC	*Carrier index* This is the index to table CARRMTC. This field must be one of the template names (field TMPLTNM) already datafilled in table CARRMTC.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PB_OSACTION	Y or N	*Out-of-service action* Enter Y (yes) if the T1 carrier is to be put out-of-service if the out-of-service threshold for any performance parameters is reached. Otherwise, enter N (no).
	ZLG	ZCS or B8ZS	*Zero logic* This field is used for the reset of the R8070 chip. B8ZS is normally used.

APPLPEC = NTEX76AA and PBPEC = NTEX78AA

If the entry in field APPLPEC is NTEX76AA, and the entry in field PBPEC is NTEX78AA datafill subfield PBINFO as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBINFO	see subfield	*Paddle board information* This field specifies the paddle board information and consists of subfield PBPEC.
	PBPEC	NTEX78AA	*Paddle board product engineering code* Enter the PEC for the new DS-1 paddle board.
	CLKSRCE	FBUS	*Clock source* The clock source is always FBUS.

LIUINV (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	CLKRATE	1536	*Clock rate* Enter the clock rate: 1536 kbits/s.
	PB_LLEQ	0_35, 36_65, 66_95, 96_125, 126_155, 156_185, 186_210	*Paddle board line length equalization* These values represent the range of paddle board line lengths. The line lengths are measured in meters from the bulkhead to the terminating equipment. Enter the range that includes the appropriate paddle board line length. ***Note:*** Under certain conditions, an incorrect value may cause errors due to inadequate signal-to-noise ratios.

APPLPEC = NTEX76AA and PBPEC = NTEX26BA

If the entry in field APPLPEC is NTEX76AA and the entry in field PBPEC is NTEX26BA, then datafill the subfield PBINFO as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBINFO	see subfields	*Paddle board information* This field specifies the paddle board information and consists of subfields BPPEC, CLKRATE, and PB_BIT_INV.
	PBPEC	NTEX26BA	*Paddle board product engineering code* NTEX26BA is a permitted entry for the PB PEC of the MLIU. Enter the PEC of the paddle board and datafill subfields CLKRATE and PB_BIT_INV as described below.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	CLKRATE	64000	*Clock rate* Enter the clock rate at which the paddle board operates.
	PB_BIT_INV	NBI	*Paddle board bit inversion* Enter the bit inversion (BI) mode value to match the BI mode characteristic of the associated network.

APPLPEC = NT9X76AA or NT9X76CA and PBPEC = NT9X77AA or NT9X77AB

If the entry in field APPLPEC is NT9X76AA or NT9X76CA, and the entry in field PBPEC is NT9X77AA or NT9X77AB (DMS-100 V.35 PB type), then datafill subfield PBINFO as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBINFO	see subfield	*Paddle board information* This field specifies the paddle board information and consists of subfield PBPEC.
	PBPEC	NT9X77AA or NT9X77AB	*Paddle board product engineering code* Enter the PEC of the paddle board and datafill subfields CLKRATE and CLKCONFIG as described below.
	CLKRATE	2400, 4800, 9600, 19200, 56000, or 64000	*Clock rate* Enter the clock rate at which the paddle board operates. The default for this field is 56 000 (56 kbit/s).
	CLKCONFG	DTE or DCE	*Clock configuration* Enter the clock configuration for the paddle board if the LIU7 is specific to the V.35 PB type.

LIUINV (continued)

APPLPEC = NT9X76AA or NT9X76CA and PBPEC = NT9X78AA

If the entry in field APPLPEC is NT9X76AA or NT9X76CA, and the entry in field PBPEC is NT9X78AA (DS-0A PB type), then datafill subfield PBINFO as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBINFO	see subfield	*Paddle board information* This field specifies the paddle board information and consists of subfield PBPEC.
	PBPEC	NT9X78AA	*Paddle board product engineering code* Enter the PEC of the paddle board and datafill subfield CLKSRCE as described below.
	CLKSRCE	EXTERNAL or FBUS	*Clock source* Enter the clock source for the paddle board if the LIU7 is specific to the DS-0A PB type.

APPLPEC = NT9X76AA or NT9X76CA and PBPEC = NT9X78BA, NT9X78CA, NT9X78DA, or NT9X78DB

If the entry in field APPLPEC is NT9X76AA or NT9X76CA, and the entry in field PBPEC is NT9X78BA, NT9X78CA, NT9X78DA (DS-0A PB type), or NT9X78DB then datafill subfield PBINFO as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBINFO	see subfields	*Paddle board information* This field specifies the paddle board information and consists of subfield PBPEC.
	PBPEC	NT9X78BA NT9X78CA NT9X78DA or NT9X78DB	*Paddle board product engineering code* Enter the PEC of the paddle board and datafill the following subfields: The NT9X78BA is for 56-kbit/s applications. The NT9X78CA is for 56- and 64-kbit/s applications. The NT9X78DA provides 56- and 64-kbit/s applications and can generate a Link Fault Sectionalization (LFS) control code sequence. The NT9X78DB provides 56- and 64-kbit/s applications and supports LFS enhancements.
	CLKSRCE	EXTERNAL or FBUS	*Clock source* Enter the clock source for the paddle board if the LIU7 is specific to DS-0A PB type.
	CLKRATE	56000 or 64000	*Clock rate* Enter the clock rate at which the paddle board operates. The default is 56000 (56 kbit/s). The 64000 clock rate only works with the NT9X78CA paddle board.

LIUINV (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	DS0TYP	DS0TRK or NIL	*DS-0 type* Enter the DS-0 type. DS0TRK is valid only if the office has channelized access on LPP/LIS. If the entry in this field is DS0TRK, datafill field DS0TRK.
	DS0TRK	see subfields	*DS-0 trunk* This field consists of subfields CLLI and EXTRKNM.
	CLLI	DS0TRK or NIL	*Common language location identifier* Enter DS0TRK for a DS-0 LIU7; enter NIL for a V.35 LIU7. These are psuedo CLLIs that are needed to satisfy the table editor.
	EXTRKNM	0 to 9999	*External trunk number* Enter a numerical value to represent the external trunk number.

APPLPEC = NT9X76AA or NT9X76CA and PBPEC = NTEX26AA

If the entry in field APPLPEC is NT9X76AA or NT9X76CA, and the entry in field PBPEC is NTEX26AA, then datafill the subfield PBINFO as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBINFO	see subfields	*Paddle board information* This field specifies the paddle board information and consists of subfields OPTIONS, CLKRATE, and PB_BIT_INV.
	PBPEC	NTEX26AA	*Paddle board product engineering code* Enter the PEC of the paddle board and datafill subfields OPTIONS, CLKRATE, and PB_BIT_INV as described below.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	OPTIONS	blank	*Option vector* This field cannot be datafilled at this time, leave the entry blank.
	CLKRATE	48000 56000 or 64000	*Clock rate* Enter the clock rate at which the paddle board operates.
	PB_BIT_INV	NBI, EBI, ABI, or OBI	*Paddle board bit inversion* Enter a bit inversion (BI) mode value to match the BI mode characteristic of the associated network. When it is added, EBI is activated on the related LIU7 linnk.

APPLPEC = NTFX10AA

If the entry in field APPLPEC is NTFX10AA, datafill field PBPEC as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBPEC	NTFX09AA	*Paddle board product engineering code* Enter the PEC of the paddle board. The only card code supported is NTFX09AA.

APPLPEC = NTMX97AA

If the entry in field APPLPEC is NTMX97AA, datafill subfield PBPEC as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBPEC	NTMX99AA	*Paddle board product engineering code* Enter NTMX99AA, the paddle board for LIUTYPE VPU.

LIUINV (continued)

APPLPEC = NT9X14DB

If the entry in field APPLPEC is NT9X14DB, datafill subfield SNIX_FILENAME as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	SNIX_FILE-NAME	alphanumeric (6 characters)	*SuperNode UNIX filename* Enter the name of the SNIX image load file. If SNIX_FILENAME is SOSONL, this entry defines an APU running Support Operating System (SOS) only. If SNIX_FILENAM is SOSNIX, this entry defines an APU running both SOS and SuperNode UNIX (SNIX) Systems.

APPLPEC = NT9X84AA

If the entry for field APPLPEC is NT9X84AA, datafill the subfields in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	PBPEC	NT9X85AA or NT9X85BA	*Paddle board product engineering code* Enter one of the PECs. Enter NT9X85AA for EIU coax applications. Enter NT9X85BA for EIU unshielded twisted pair applications. Enter NT9X85AA or NT9X85BA for ELIU applications.
	HEARTBEAT	YES or NO	*Heartbeat* Enter YES if the EIU or ELIU expects a heartbeat indication signal from the media access unit (MAU) connected to it; otherwise, enter NO.
	MAC_ADDRESS	000075F00000 to 000075FFFFFF	*Media access control address* Enter a 12-character hex string representing the MAC address.

Datafill example

The following example shows sample datafill for table LIUINV.

LIUINV (continued)

MAP display example for table LIUINV

```
 LIUNAME      LOCATION     LOAD          PROCINFO
                                                        CARDINFO
_____________________________________________________________________

ELIU   0   LIM  0 1 15  ELS071BA         NTEX22BB
                          NT9X84AA NT9X85AA NO 000075F00020

LIU7 101   LIM  0 1  9  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DTE

LIU7 102   LIM  0 1 12  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DCE

LIU7 104   LIM  0 1 18  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DCE

LIU7 105   LIM  0 1 21  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DCE

LIU7 201   LIM  0 2  9  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DTE
LIU7 202   LIM  0 2 12  LRS77DC          NTEX22BA
                                  NT9X76AA NT9X78DB 56000 NIL

LIU7 301   LIM  0 3  9  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DTE

LIU7 302   LIM  0 3 12  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DCE

LIU7 303   LIM  0 3 15  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DCE

LIU7 305   LIM  0 3 21  LRS36CJ          NTEX22BB
                                  NT9X76AA NT9X77AA 56000 DCE
HLIU   1   LIM  0 1 28  HCA77CK          NTEX22CA
                                  NTEX76AA NTEX78AA FBUS 1536 0_35

HSLR   1   LIM  0 3 30  HCA77CK NILSTPECNTEX22CA

MLIU 100   LIM  1 1  8   MCA11AQ          NTEX22CA
                                  NTEX76AA NTEX26BA 64000 EBI

LIU7 100   LIM  0 1  8  CHA20BB           NTEX22BB
                                  NT9X76AA NTEX26AA 4800  EBI
```

Table history

SN07 (DMS)

Bit Inversion EBI added to PB_BIT_INV field of LIUINV to support A00004750.

MMP12

The following changes were made to table LIUINV:

- Added MLIU as a permitted entry to subfield LIUTYPE
- Added note to include NTEX26BA to subfield PB PEC for an MLIU
- Added an example datafill for an MLIU in the MAP display

TL11

The following changes were made to table LIUINV:

- Removed note regarding HLIU and HSLR from field LIUTYPE
- Added HLIU and HSLR examples to the datafill example
- Added figure “Link interface unit configuration (12-link LIM cabinet)”
- Added the following PECS under the subfield PROCPEC:
  - NTEX22DA
  - NTEX22EA
  - NTEX22FA
- Added value MLIU to subfield LIUTYPE
- Added value NTEX26BA to subfield PBPEC

TL10

Value SVR7 was added to field LIUTYPE.

Value NILSTPEC was added to field APPLPEC.

STP04.0

The following changes were made to table LIUINV:

- Removed note regarding HLIU and HSLR from field LIUTYPE
- Added value NILSTPEC to subfield APPLPEC
- Added HLIU and HSLR examples to the datafill example
- Added value NT9X78DB to subfield PBPEC.

LIUINV (end)

TL07

The following changes were made to table LIUINV:

- added ELIU as a valid LIU type.
- added values HLIU and HSLR to field LIUTYPE
- added NTEX76AA to subfield APPLPEC
- added PBINFO subfields PBPEC, CLKSRCE, CLKRATE, and PB_LLEQ for NTEX76AA

TL06

The following changes were made to table LIUINV:

- added NTEX22CA to subfield PROCPEC
- deleted NTEX22AA in subfield PROCPEC
- updated the explanation for subfield PFIPEC
- corrected the entry range in subfield MSCARD (from 6 to 23 to 5 to 23)

BCS36

The following changes were made to table LIUINV:

- added value NT9X78DA to subfield PBPEC
- added values NT9X76BA to field APPLPEC and NT9X77BA to subfield PBPEC
- corrected the entry range in field LIUNO (from 0 to 750 to 0 to 511)

BCS35

The following changes were made to table LIUINV:

- changed field LIUTYPE from APUX to APU
- deleted fields SOSTIX, SNIXTIX, and NUMREST
- added field LIUTYPE VPU
- added field PBPEC NTEX26AA for the channelized access feature
- added field APPLPEC NT9X76CA for Japan ISUP

BCS34

The following changes were made to table LIUINV:

- revised fields LIUNAME, CARDINFO, and APPLPEC
added fields NUMCHANS, SOSTIX, SNIXTIX, and FRAC

LKIDTAB

Table name

Link Identifier Table

Functional description

Table LKIDTAB is a read-only table. Table LKIDTAB preserves the relationship between integrated link maintenance (ILM) links and pairs of ILM access identifiers over software upgrades.

The update of table LKIDTAB only can occur indirectly. The update can occur through the entry of data of a device that requires ILM-supported resources. The update also can occur as a part of a restore operation on the N+ 1 software load as part of a software upgrade. For this reason, table LKIDTAB is a write-restricted table with a system protected (SYSPROT) table protection level.

Note: Table LKIDTAB is for NT use only. The operating company is not allowed to use the table.

Datafill sequence and implications

You do not need to enter data for other tables before you enter data for table LKIDTAB.

Restore table LKIDTAB before any of the inventory tables of devices that require ILM resources.

You can enter data in table LKIDTAB immediately after you enter data in table AKEYTAB. Perform this action to allow future cross-checking between table LKIDTAB and AKEYTAB.

You only enter data for table LKIDTAB through a restore operation. Table LKIDTAB is write-restricted for direct datafill.

Table size

0 to 2048 tuples

The number of dynamically added tuples determines the table size.

LKIDTAB (continued)

Datafill

Datafill for table LKIDTAB appears in the following table.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LKID		refer to subfields	*Link identifier*. This field contains an identifier that integrated link maintenance (ILM) uses to identify a link. A link occurs between a pair of ports and a pair of access identifiers. This field contains subfields EPTKEY and OFFSET.
	EPTKEY	0 to 32767	*Link endpoint key*. This subfield identifies a pair of access keys that ILM transport resources connect.
	OFFSET	0 to 32767	*Link offset*. This subfield identifies the link between a pair of access keys. If several links are present between two access keys, the link offset differentiates between them.
ACID1		refer to subfields	*First access identifier*. This field is the first of a pair of access identifiers between which the link occurs. This field contains subfields KEY, INDEX, and CHANNEL.
	KEY	0 to 32767	*Access key*. This subfield is the access key part of the first access identifier.
	INDEX	0 to 32767	*Access index*. This subfield is the access index part of the second access identifier.
	CHANNEL	0 to 32767	*Access channel*. This subfield is the access channel part of the second access identifier.
ACID2		refer to subfields	*Second access identifier*. This subfield is the second of a pair of access identifiers between which the link occurs. This field contains subfields KEY, INDEX, and CHANNEL.
	KEY	0 to 32767	*Access key*. This subfield is the access key part of the second access identifier.
	INDEX	0 to 32767	*Access index*. This subfield is the access index part of the second access identifier.
	CHANNEL	0 to 32767	*Access channel*. This subfield is the access channel part of the second access identifier.

LKIDTAB (end)

Datafill example

Sample datafill for table LKIDTAB appear in the following example.

MAP example for table LKIDTAB

```
        LKID              ACID1                   ACID2
   ________________________________________________________
        0    0       0    0    0           1    0    0
```

Table history

BCS36

References to BCS were removed. Software upgrades replaced the references in BCS36.

BCS35

Table LKIDTAB was introduced in BCS35.

LMINV

Table name

Line Module Inventory Table

Functional description

Table LMINV lists the following assignment data for each line module (LM) or remote line module (RLM) frame:

- type of module (LM or RLM)
- for an RLM, the site name assigned to the remote location
- floor, row on floor, frame position in row, and shelf position
- product engineering code (PEC)
- name given to the peripheral module (PM) software load (for a list of available names, see the appropriate BCS release)
- for an LM, the network assignments
- for an RLM, the digital carrier module and port assignments
- for an RLM, whe information ther the following options are enabled: remote service module, emergency stand-alone, or intraswitch
- set of executive programs (for a list of available executive programs, see the appropriate BCS release)
- whether the takeover and takeback part of the LM and RLM routine exercise is run during periods of low traffic to test that the takeover function works and to alert maintanence personnel if it does not

Datafill sequence and implications

For switches equipped with the Junctored Network (JNET), the following tables must be datafilled before table LMINV:

- SITE
- DCMINV
- NETWORK
- NETJUNCT

For switches equipped with the Enhanced Network (ENET), the following tables must be datafilled befor table LMINV:

- SITE
- DCMINV
- ENINV

LMINV (continued)

- ENCDINV
- If the switching unit has remote operation, the digital carrier module (DCM) assignments for this table cannot be used for assignments of trunk members. Ensure that the appropriate DS-1s are datafilled in table DCMINV for the DCM to which the RLM is connected.
- Before a tuple is removed from table LMINV, any associated tuple in table LMRNG must be deleted first. Failure to do so results in error messages being generated.

The following method must be employed when changing datafill for field LMRLM:

1. Busy one unit and move links.
2. Change data.
3. Return to service unit.
4. Busy and return to service mate unit.

Table size

0 to 256 tuples (NT40)

0 to 1000 tuples (SuperNode)

Datafill

Field names, subfield names, and valid data ranges for table LMINV are described below.

The following fields are associated with a line module (LM).

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LMNM		see subfields	*Line module key* This field consists of subfields SITE, FRAME, and UNIT.
	SITE	blank	*Site* Leave this field blank.

LMINV (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	FRAME	0 to 511	*Line module frame number* Enter the LM frame number. Entries for NT40 range from 0 to 127. Entries for SuperNode range from 0 to 511.
	UNIT	0 to 1	*Line module unit number* Enter the unit number of the LM frame. For LMs, the unit number is the bay position.
ADNUM		0 to 4095	*Administrative number* Enter the external administrative number to be associated with the LM. This number must be unique among all PMs.
SHPOS		0 to 77	*Shelf position* Enter the base mounting position on the LM unit.
FLOOR		0 to 99	*Floor* Enter the floor on which the LM frame and unit are located.
ROW		A to H, J to N, P to Z, AA to HH, JJ to NN, or PP to ZZ	*Row* Enter the row on the floor in which the LM is located.
FRPOS		0 to 99	*Frame position* Enter the unit position in row of the LM frame.
EQPEC		2X14AA, 2X14AC, or 2114AC	*Equipment product engineering code* Enter the product engineering code (PEC) of the LM. If the PEC is 2X14AE, enter 2X14AC.
LOAD		alphanumeric (vector of up to 8 characters)	*Load* Enter the name given to the PM software load. For a list of available names, see the appropriate BCS release.

LMINV (continued)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LMRLM		see subfields	*Line or remote line module information* This field consists of subfields LMRLMSEL and LKINFO.
	LMRLMSEL	LM	*Line or remote line module selector* Enter LM for a line module.
	LKINFO	vector	*Line network link information* For JNET-equipped switches, this subfield is a vector that consists of the values NMPAIR0, NMPORT0, NMPAIR1, NMPORT1, NMPAIR2, NMPORT2, NMPAIR3, and NMPORT3. For ENET-equipped switches, this subfield is a vector that consists of the values ENSHELF0, ENSLOT0, ENLINK0, ENDS30-0, ENSHELF1, ENSLOT1, ENLINK1, ENDS30-1, ENSHELF2, ENSLOT2, ENLINK2, ENDS30-2, ENSHELF3, ENSLOT3, ENLINK3, and ENDS30-3.

LKINFO values for JNET-equipped switches

For LKINFO values on a JNET switching unit, datafill the following fields.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
NMPAIR0		0 to 31	*Network module pair number* Enter the number of the first network module assigned to the LM unit.
NMPORT0		0 to 63	*Network module port number* Enter the number of the first network module port assigned to the LM unit.
NMPAIR1		0 to 31	*Network module number* Enter the number of the second network module assigned to the LM unit.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
NMPORT1		0 to 63	*Network port number* Enter the number of the second network module port assigned to the LM unit.
NMPAIR2		0 to 31 or blank	*Network module number* If the LM unit has three or four network assignments, enter the number of the third network module assigned to the LM unit. Otherwise, leave the field blank.
NMPORT2		0 to 63 or blank	*Network module port number* If the LM unit has three or four network assignments, enter the number of the third network module port assigned to the LM unit. Otherwise, leave the field blank.
NMPAIR3		0 to 63 or blank	*Network module number* If the LM unit has four network assignments, enter the number of the fourth network module assigned to the LM unit. Otherwise, leave the field blank.
NMPORT3		0 to 63 or blank	*Network module port number* If the LM unit has four network assignments, enter the number of the fourth network module port assigned to the LM unit. Otherwise, leave the field blank.

LMINV (continued)

LKINFO values for ENET-equipped switches

For LKINFO values on an ENET switching unit, datafill the following fields.

Field descriptions for conditional datafill (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
ENSHELF0		0 to 3	*ENET shelf number* Enter the first network shelf number assigned to the LM unit. Entries outside of this range are invalid.
ENSLOT0		10 to 19 or 25 to 32	*ENET slot number* Enter the first crosspoint slot number assigned to the LM unit. For ENET 16K, enter a value in the range 13 to 19. For ENET 128K, enter a value in the range 10 to 16 or 25 to 32.
ENLINK0		0 to 18	*ENET link number* Enter the first crosspoint link number assigned to the LM unit.
ENDS30-0		0	*ENET DS30 equivalent link number* Enter 0 (zero) for a DS30 copper link. Fiber links do not apply to LMs.
ENSHELF1		0 to 3	*ENET shelf number* Enter the second network shelf number assigned to the LM unit. Entries outside of this range are invalid.
ENSLOT1		10 to 19 or 25 to 32	*ENET slot number* Enter the second crosspoint slot number assigned to the LM unit. For ENET 16K, enter a value in the range 13 to 19. For ENET 128K, enter a value in the range 10 to 16 or 25 to 32.
ENLINK1		0 to 18	*ENET link number* Enter the second crosspoint link number assigned to the LM unit.

Field descriptions for conditional datafill (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
ENDS30-1		0	*ENET DS30 equivalent link number* Enter 0 (zero) for a DS30 copper link. Fiber links do not apply to LMs.
ENSHELF2		0 to 3 or blank	*ENET shelf number* If the LM unit has three or four network assignments, enter the third network shelf number assigned to the LM unit. Otherwise, leave the field blank. Entries outside of this range are invalid.
ENSLOT0		10 to 19 25 to 32 or blank	*ENET slot number* If the LM unit has three or four network assignments, enter the third crosspoint slot number assigned to the LM unit. Otherwise, leave the field blank. For ENET 16K, enter a value in the range 13 to 19. For ENET 128K, enter a value in the range 10 to 16 or 25 to 32.
ENLINK2		0 to 18 or blank	*ENET link number* If the LM unit has three or four network assignments, enter the third crosspoint link number assigned to the LM unit. Otherwise, leave the field blank.
ENDS30-2		0 or blank	*ENET DS30 equivalent link number* If the LM unit has three or four network assignments, enter 0 (zero) for a DS30 copper link. Otherwise, leave the field blank. Fiber links do not apply to LMs.
ENSHELF3		0 to 3 or blank	*ENET shelf number* If the LM unit has four network assignments, enter the fourth network shelf number assigned to the LM unit. Otherwise, leave the field blank. Entries outside of this range are invalid.

LMINV (continued)

Field descriptions for conditional datafill (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
ENSLOT0		10 to 19 25 to 32 or blank	*ENET slot number* If the LM unit has four network assignments, enter the fourth crosspoint slot number assigned to the LM unit. Otherwise, leave the field blank. For ENET 16K, enter a value in the range 13 to 19. For ENET 128K, enter a value in the range 10 to 16 or 25 to 32.
ENLINK3		0 to 18 or blank	*ENET link number* If the LM unit has four network assignments, enter the fourth crosspoint link number assigned to the LM unit. Otherwise, leave the field blank.
ENDS30-3		0 or blank	*ENET DS30 equivalent link number* If the LM unit has four network assignments, enter 0 (zero) for a DS30 copper link. Otherwise, leave the field blank. Fiber links do not apply to LMs.
EXECS		LMEX	*Executive programs* Enter LMEX.
REX		REX, NOREX, REX-NOCALL, or REXIFSAVE	*Routine exercise* Enter REX to enable the routine exercise (REX) for the LM. Enter NOREX to exclude the out-of-service portion of the REX test for the LM. Enter REXNOCALL to exclude the out-of-service portion of the REX test if any calls are up on the LM. Enter REXIFSAVE to exclude the out-of-service portion of the REX test if any calls on the LM are not stable two-port calls.

Remote line module

The following fields are associated with a remote line module (RLM).

Field descriptions for conditional datafill (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LMNM		see subfields	*Line module key* This field consists of subfields SITE, FRAME, and UNIT.
	SITE	alphabetic (4 characters)	*Site* Enter the site name assigned to the remote location.
	FRAME	0 to 511	*Line module frame number* Enter the RLM frame number.
	UNIT	0 to 1	*Line module unit number* Enter the unit number of the RLM frame. For RLMs, the unit number is the bay position.
ADNUM		0 to 4095	*Administration number* Enter the external administrative number to be associated with the RLM. This number must be unique among all peripheral modules (PM).
SHPOS		0 to 77	*Shelf position* Enter the base mounting position on the RLM unit.
FLOOR		0 to 99	*Floor* Enter the floor at the remote location, on which the RLM frame and unit are located.
ROW		A to H, J to N, P to Z, AA to HH, JJ to NN, PP to RR	*Row* Enter the row on the floor, in which the RLM is located.

LMINV (continued)

Field descriptions for conditional datafill (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
FRPOS		0 to 99	*Frame position* Enter the unit position in row, of the RLM frame.
EQPEC		2X14AB 2X14AD or 2114AC	*Equipment product engineering code* Enter the product engineering code (PEC) of the RLM. If the PEC is 2X14AF, enter 2X14AD.
LOAD		alphanumeric (up to 8 characters)	*Load* Enter the name given to the PM software load. (For a list of available names, see the batch change supplement for the appropriate BCS release.)
LMRLM		see subfields	*Line or remote line module information* This field consists of subfields LMRLMSEL, LINKMAP, RSM, INTRASW, and ESA.
	LMRLMSEL	RLM	*Line or remote line module selector* Enter RLM for a remote line module.
	LINKMAP	see refinements	*Line network link map* This subfield consists of refinements DCMNO, WHICH0, PORT0, WHICH1, PORT1, WHICH2, PORT2, WHICH3, and PORT3.
DCMNO		0 to 511	*Digitial carrier module number* Enter the digital carrier module number assigned to the RLM.
WHICH0		DCMR	*Which on port 0* Enter DCMR to specify digital carrier module as the type of equipment assigned to port 0 of the RLM.

Field descriptions for conditional datafill (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
PORT0		0 to 3	*Port number 0* Enter the DS-1 circuit number on the digital carrier module assigned to port 0 of the RLM. Entries outside of this range are invalid. The DS-1 must be datafilled in table DCMINV.
WHICH1		DCMR MRLM or NONE	*Which on port 1* Specify the type of equipment assigned to port 1 of the RLM. Enter DCMR for a digital carrier module, MRLM for a remote line module, or NONE for no equipment.
PORT1		0 to 3	*Port number 1* Enter the DS-1 circuit number on the digital carrier module, or the line number on the remote line module, assigned to port 1 of the RLM. Entries outside of this range are invalid. The DS-1 must be datafilled in table DCMINV.
WHICH2		DCMR MRLM or NONE	*Which on port 2* Specify the type of equipment assigned to port 2 of the RLM. Enter DCMR for a digital carrier module, MRLM for a remote line module, or NONE for no equipment.
PORT2		0 to 3	*Port number 2* Enter the DS-1 circuit number on the digital carrier module, or the line number on the remote line module, assigned to port 2 of the RLM. Entries outside of this range are invalid. The DS-1 must be datafilled in table DCMINV.
WHICH3		DCMR MRLM or NONE	*Which on port 3* Specify the type of equipment assigned to port 3 of the RLM. Enter DCMR for a digital carrier module, MRLM for a remote line module, or NONE for no equipment.

LMINV (continued)

Field descriptions for conditional datafill (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
PORT3		0 to 3	*Port number 3* Enter the DS-1 circuit number on the digital carrier module, or the line number on the remote line module, assigned to port 3 of the RLM. Entries outside of this range are invalid. The DS-1 must be datafilled in table DCMINV.
	RSM	Y or N	*Remote service module* Enter Y (yes) if the RLM is in the remote service module configuration. Otherwise, enter N (no).
	INTRASW	Y or N	*Intraswitch* Enter Y if the RLM is provided with internal links (intrabay (IA) or interbay (IR) link option). Otherwise, enter N.
	ESA	Y or N	*Emergency stand-alone* Enter Y if the RLM has the emergency stand-alone (ESA) option, and datafill refinement DIGITS. Otherwise, enter N and leave refinement DIGITS blank. ***Note:*** RLMs capable of ESA operation must have field ESA set to Y in order to datafill the ESA tables.
DIGITS		alphanumeric (up to 4 digits)	*Digits* Enter the prefix digits to send to the RLM.

Field descriptions for conditional datafill (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
EXECS		alphanumeric (up to 6 characters)	*Executive* Enter the set of executive programs required for the RLM. (For a list of available executive programs, see the batch change supplement for the appropriate BCS release.)
REX		REX NOREX REXNOCALL or REXIFSAVE	*Routine excercise* Enter REX to enable the routine exercise (REX) for the RLM. Enter NOREX to exclude the out-of-service portion of the REX test for the RLM. Enter REXNOCALL to exclude the out-of-service portion of the REX test if any calls are up on the RLM. Enter REXIFSAVE to exclude the out-of-service portion of the REX test if any calls on the RLM are not stable two-port calls.

Datafill example

Four examples of datafill for table LMINV are shown in this section.

Example 1 is for a line module (LM frame 0, unit 0) with two network appearances. The takeover and takeback routine is run during a period of low traffic.

MAP display example for table LMINV

```
LMNM        SHPOS    FLOOR  ROW  FRPOS  EQPEC       LOAD
                                                   LMRLM
                                               EXECS    REX
________________________________________________________
0 0 123        65       5    K      0  2X14AA   BLMAA03
                     LM        (0  0) (1 2)
                                               LMEX     REX $
```

Example 2 is for a line module (LM frame 1, unit 0) with three network appearances. The takeover and takeback routine is run during a period of low traffic.

LMINV (continued)

MAP display example for table LMINV

```
LMNM          SHPOS     FLOOR   ROW   FRPOS   EQPEC       LOAD
                                                          LMRLM
                                                       EXECS    REX
_____________________________________________________________________

1 0 456         65        5     K       2   2X14AA    BLMAA03
                        LM           (1 1) (2 3) (3 1)
                                                       LMEX     REX $
```

Example 3 is for a line module (LM frame 2, unit 0) with four network appearances. The takeover and takeback routine is run during a period of low traffic.

MAP display example for table LMINV

```
LMNM          SHPOS     FLOOR   ROW   FRPOS   EQPEC       LOAD
                                                          LMRLM
                                                       EXECS    REX
_____________________________________________________________________

2 0 789         65        5     K       4   2X14AA    BLMAA03
                        LM           (2 2) (3 0) (0 2) (1 3)
                                                       LMEX     REX $
```

Example 4 is for a remote line module (RLM frame 0, unit 0) at the Merivale remote location which has a site name of MERV. The takeover and takeback routine is run during a period of low traffic.

MAP display example for table LMINV

```
LMNM         SHPOS     FLOOR  ROW  FRPOS  EQPEC       LOAD
                                                     LMRLM
                                                  EXECS   REX
_____________________________________________________________

MERV 0 0 1234  65         1    A      0  2X14AB   ERLMAA02
     RLM  (1 DCMR) (0 DCMR) (1 DCMR) (2 DCMR) 3 Y Y Y Y N
                                                  LMEX    REX $
```

LMOVCODE

Table name

Line-to-Trunk Overlap Outpulse Table

Functional description

Table LMOVCODE is required for a local or combined local and toll switching unit that is arranged to do dial pulse (DP) overlap outpulsing on one or more of the dial pulse trunk groups, or for an equal access end office (EAEO) with feature BC1367 (Overlap Carrier Selection) (OCS).

DP overlap outpulsing uses the data in table LMOVCODE to inform the line module (LM) and line group controller (LGC) which NXX codes must be completed using line-to-DP-trunk overlap outpulsing.

The OCS feature uses the data in table LMOVCODE to inform the LM and LGC which NXX codes are not applicable to feature OCS. The OCS feature allows outpulsing of digits before the subscriber completes dialing. Domestic calls begin carrier selection when there are four digits left to be dialed. International calls begin carrier selection after the country code is dialed.

Both DP overlap outpulsing and feature OCS force the LM and LGC to report digits to the central control (CC) before the customer completes dialing (so that trunk selection and outpulsing can commence before the customer completes dialing), thus minimizing post-dial delay.

To minimize the real-time impact on non-equal-access calls, overlap outpulsing for equal access uses the data in table LMOVCODE to inform the LM or LGC of those codes that cannot use OCS signaling. For those calls that cannot be switched through a carrier, digits are reported to the CC in one message. This scheme reduces peripheral module (PM)-to-CC messaging thus limiting the real-time impact of the OCS feature.

Office parameter EA_OCS_AND_DP_OVLP_NEEDED in table OFCENG indicates whether both DP overlap outpulsing and feature OCS are required in a switching unit (DMS-100 EAEO). If only feature OCS is needed in a switching unit, the real-time impact on non-OCS calls is reduced. If both are required, then real-time savings are lost.

Although a switching unit can have both DP overlap outpulsing and overlap outpulsing for equal access, table LMOVCODE can be used for only one type of overlap outpulsing. If line-to-DP-trunk overlap outpulsing is needed, table LMOVCODE cannot be used for real-time speedup of non-OCS calls. If feature OCS is needed and the real-time enhancement is needed (that is, entries

in table LMOVCODE do not use OCS signaling), then line-to-DP-trunk overlap outpulsing is not available.

If the value of office parameter EA_OCS_AND_DP_OVLP_NEEDED in table OFCENG is Y (yes), both DP overlap outpulsing and feature OCS work, but no real-time savings are achieved on those calls that are not switched through a carrier.

If the value of EA_OCS_AND_DP_OVLP_NEEDED is N (no) and the value of office parameter EA_OVERLAP_CARRIER_SELECTION in table OFCENG is Y, then line-to-DP-trunk overlap outpulsing is not available.

The following rules apply for a switching unit with DP overlap outpulsing only:

- Office parameter MIN_NUMBER_OF_DIGS_RPTD_ON_OVLP in table OFCENG specifies the number of digits to collect before overlap outpulsing on a dial pulse trunk group.
- Office parameters EA_OVERLAP_CARRIER_SELECTION and EA_OCS_AND_DP_OVLP_NEEDED must be set to N.
- Table LMOVCODE lists all the NXX codes that route to the dial pulse trunk groups with overlap outpulsing. If any of these codes are dialed by a line, the line module sends a digit report to the CC after receiving the number of digits specified in office parameter MIN_NUMBER_OF_DIGS_RPTD_ON_OVLP.

The following rules apply for an EAEO switching unit with OCS only:

- Office parameter EA_OVERLAP_CARRIER_SELECTION in table OFCENG must be set to Y, and office parameter EA_OCS_AND_DP_OVLP_NEEDED in table OFCENG must be set to N.
- The office parameter for DP overlap outpulsing MIN_NUMBER_OF_DIGS_RPTD_ON_OVLP is not applicable to OCS.
- If table LMOVCODE is being used to speed up non-OCS calls, the table must contain the codes to which OCS is not applicable.
- Feature OCS affects almost all calls in an EAEO (whether they are equal access or not). The impact is that of an additional digits message on most calls if office parameter EA_OVERLAP_CARRIER_SELECTION is set to N. Although it impacts most calls, the benefit of this feature is that on calls using the OCS feature, between 2 and 4 s of post-dial delay are saved for each call.

LMOVCODE (continued)

- Due to limited store in the peripheral modules (PM), it is not always possible to datafill all codes not applicable to feature OCS. Refer to the tables “Store requirements for PMs" and “Reduction of store requirements" in this functional description for hints on reducing store requirements in the PMs.
- If requirements are such that several NXX codes do not fit into the table, the greatest real-time saving can be achieved by including those NXX codes that are customer dialed most frequently.

The following rules apply when datafilling table LMOVCODE:

- If the NXX code is represented, for example, by ABC, each block of consecutive C digits that has the same A and B digits requires 2 bytes of store in line PMs.
- If a software error message is printed specifying that the table is too large when adding or deleting NXX codes, the input must be modified to decrease the store requirement for the table in the line PMs. The four consecutive blocks 621 to 623, 625, 627 to 629, and 630 to 631 require 8 bytes of store in a line PM. This store requirement can be reduced to 4 bytes by the addition of NXX codes 624 and 626. After completing the addition or deletion of NXX codes, reload static data to any LGC and line trunk controllers (LTC), then busy (BSY) and return to service (RTS) any line modules and line concentrating modules.

To activate, deactivate, query, or display the current status of overlap outpulsing, load file OVLPCI$LC PERM NAMES from non-resident tape and use the command interpreter (CI) commands shown in the following table.

CI commands

Command	Description	Responses
OVERLAP	Displays the current status of overlap outpulsing	OVERLAP ON OVERLAP OFF
OVERLAP ON	Activates overlap outpulsing	OVERLAP OUTPULSING IS NOW ENABLED
OVERLAP OFF	Deactivates overlap outpulsing	OVERLAP OUTPULSING IS NOW DISABLED
Q OVERLAP	Lists overlap parameters	

A tuple change (TUPC) log will be generated when table LMOVCODE is changed. The TUPC log will indicate the table and tuple changed, added, or deleted.

Datafill sequence and implications

There is no requirement to datafill other tables prior to table LMOVCODE.

Table LMOVCODE interacts with the following office parameters in table OFCENG:

- EA_OCS_AND_DP_OVLP_NEEDED
- EA_OVERLAP_CARRIER_SELECTION
- MIN_NUMBER_OF_DIGS_RPTD_ON_OVLP
- MIN_NUMBER_OF_DIGS_RPTD_ON_OVLP

Table size

0 to 1000 tuples

Datafill

The following table lists datafill for table LMOVCODE.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
NXX		see subfield	*Nxx code* This field consists of subfield CODE.
	CODE	alphanumeric (table of 3 characters) (000 to 999, B, C, D, E, F)	*Code* If table LMOVCODE is used for dial pulse (DP) overlap outpulsing, enter the NXX codes that are associated with a DP trunk group with overlap outpulsing. If table LMOVCODE is used for overlap carrier selection (OCS) in an equal access end office (EAEO), enter the NXX codes to which feature BC1367 (Overlap Carrier Selection) (OCS) is not applicable.

Datafill example

The following example shows sample datafill for table LMOVCODE.

LMOVCODE (continued)

If the switching unit is using DP overlap outpulsing, the NXX codes 621 to 623, 625, and 627 to 631 are the codes to which overlap outpulsing applies when a call originates from a line.

If the switching unit is an EAEO with the OCS feature, the codes 621 to 623, 625, and 627 to 631 are the codes to which OCS is not applicable.

MAP display example for table LMOVCODE

```
NXX
_____________________________________________________________________
621
622
623
625
627
628
629
630
631
```

Table history

BCS36

Subfield CODE was added.

Supplementary information

This section provides information on reducing store requirements in table LMOVCODE.

The store requirements in the PM for each block of NXX codes are shown in the following table. The total store requirement is 8 bytes.

Store requirements for PMs

Block of NXXs	Store requirement
621 to 623	2 bytes
625	2 bytes
627 to 629	2 bytes
630 to 631	2 bytes

LMOVCODE (end)

If NXX codes 624 and 626 are vacant, they can be added to table LMOVCODE and the store requirements are reduced to 4 bytes, as shown in the following table.

Reduction of store requirements

Block of NXXs	Store requirement
621 to 629	2 bytes
630 to 631	2 bytes

LMRNG

Table name

Line Module Ring Code Table

Functional description

Table LMRNG specifies the type of ringing assigned to each line module (LM) or remote line module (RLM). The following types of ringing are supported:

- coded ringing based on cyclic variation of 20 Hz
- coded ringing based on cyclic variation of 30 Hz
- coded special ringing based on cyclic variation of 20 Hz
- frequency ringing
- superimposed ringing

The type of ringing for line concentrating modules (LCM), remote line concentrating modules (RLCM), international line concentrating modules (ILCM), international remote line concentrating modules (IRLCM), ISDN line concentrating modules (LCMI), and enhanced line concentrating modules (ELCM) is specified in table LCMINV.

Regular type audible ring is returned to the calling party for all types of ringing. On revertive calls, ring splash is applied to the originating line (with the exception of: coded ringing based on cyclic variation of 30 Hz; and frequency selective ringing).

A line module equipment (LME) frame and an RLM frame have two ringing generators and two LCMs. Under normal operating conditions, one ringing generator serves one LCM. If one of the ringing generators on a frame fails, the remaining ringing generator serves both LCMs on the frame.

The maximum number of lines that can be assigned to an LM bay is 640, or 1280 for each LME frame.

The switching unit can have a mixture of frequency, coded, and superimposed ringing. Only one type of ringing can be assigned for each LME frame (1280 lines).

Coin presence voltage

The standard coin presence test uses a -52V source from the ringing generator applied to the tip side of the coin line. If more than 10 mA of current flows during this voltage application (250 ms), the presence of the initial rate in the coin slot is indicated.

To accommodate local coin overtime, a partial coin presence test using +52V from the ringing generator is used. If more than 10 mA flows, the presence of a coin or coins (any denomination) in the coin slot is indicated.

If the coin presence test voltage (field CNPRESV) in table LMRNG is set to 25V, then -25V is used to test for initial deposit and +25V is used to test for partial coin presence.

On short loops, 52-V coin presence can cause activation of the coin return and collect relay due to low internal resistance of the coin return and collect circuit on the coin phone. Coin phones on loops having a loop resistance of less than 200 Ω can experience this. Some examples of coin relay operating currents are shown in the following table.

Examples of coin relay operating currents

Unit	Operate current	Nonoperate current
Western Electric 1C/2C	41 mA	30 mA
Automatic Electric 120B	48 mA	39 mA

Coin dial tone-first phones on short loops must be wired to an LM datafilled in table LMRNG with a 25-V coin presence voltage. Coin-first phones do not undergo a coin presence test for the initial rate; but, if local coin overtime is active, a coin presence test is used for the overtime rate and coin-first phones on short loops must be wired to an LM datafilled in table LMRNG with a 25-V coin presence voltage.

The coin presence test fails if the coin presence test current is less than 10 mA. Coin phones on long loops from an LM using 25-V coin presence can experience failures due to loop resistance. The maximum allowable loop resistance for a coin phone using 25-V coin presence tests is 1200 Ω. If an LM does not have any short-loop coin phones wired to it, the LM must use 52-V coin presence.

Coded ringing based on cyclic variation of 20 Hz

Coded 20 Hz ringing is provided for multiparty lines if the ringers of all parties on the tip side or all parties on the ring side are rung simultaneously. Each of the parties on the tip or ring side has a different ringing code, to differentiate between parties.

The 6-s ringing cadence for each of the five available ringing codes is shown below in the following table.

LMRNG (continued)

Single-party and two-party lines are assigned ringing code 0 in table LENLINES. The ringing cycle is 2 s on and 4 s off.

Ringing cadences for coded 20Hz ringing

Ringing code input for table LENLINES	Ringing code	On	Off	On	Off	On	Off
0	Code 0	2.0s	4.0 s				
1	Code 1	1.5s	4.5 s				
2	Code 2	1.5s	0.5 s	1.5 s	2.5 s		
3	Code 3	1.5s	0.5 s	0.5 s	3.5 s		
4	Code 4	1.5s	0.5 s	0.5 s	0.5 s	0.5 s	2.5 s
5	Code 5	1.5s	0.5 s	0.5 s	0 5 s	1.0 s	2.0 s

The maximum number of lines on an LM bay (640 lines) that can ring simultaneously is 15 for each ringing generator.

Coded ringing based on cyclic variation of 30 Hz

Coded 30 Hz ringing provides distinctive ringing patterns at 30 Hz to differentiate the type of call, ringing patterns for ring again and call back queueing, ring splash for call forwarding, and emergency service bureau ring back.

Coded 30 Hz ringing does not support two-, four-, eight-, or ten-party lines, or revertive splash ringing.

The 6-s ringing cadence for coded 30 Hz ringing is identical to the ringing cadence for coded 20 Hz ringing shown in the following table.

Coded special ringing based on cyclic variation of 20 Hz

Coded 20 Hz special ringing provides four short (0.5 s) bursts for ring code 5, as shown below in the following table.

Ring codes 0 to 4 and their cycles are identical to the ring codes for coded 20 Hz ringing shown in the following table.

Ringing candence for coded 20 Hz special ring code 5

Ringing code	On	Off	On	Off	On	Off	On	Off
Code 5	0.5 s	0.5 s	0.5 s	0.5 s	0.5 s	0.5 s	0.5 s	2.5 s

Superimposed ringing

Superimposed ringing is used for semiselective ringing on eight-party lines and fully selective ringing on four-party lines. With superimposed ringing, the 90-V 20-Hz ringing current is biased with 40 or 48 dc (as specified in field PROMVOLT of table LMRNG) and is dependent on the type of PROM used in the ringing generator.

Single-party and two-party ring-side lines are assigned ringing code 1-. Two-party tip-side lines are assigned ringing code 1+. The 6-s ringing cadence for each of the four available ringing codes is shown below in the following table.

Ringing cadences for superimposed ringing

Ring code input for table LENLINES	Ringing code	On	Off	On	Off
1	1 -	2.0 s	4.0 s		
2	1 ,+	2.0 s	4.0 s		
3	2 -	1.0 s	0.5 s	0.5 s	4.0 s
4	2 +	1.0 s	0.5 s	0.5 s	4.0 s

The maximum number of lines on an LM bay (640 lines) that can ring simultaneously is 15 for each ringing generator.

Frequency ringing

Frequency ringing uses a different frequency and a specially tuned ringer for each party.

Four types of frequency ringing are available: decimonic, harmonic, synchronic 16, and synchronic 20. Each LM can be assigned four of the five

LMRNG (continued)

available frequencies. The four frequencies selected are datafilled in table LMRNG.

The primary frequency for an LM is the frequency in table LMRNG assigned as frequency A, not necessarily the lowest frequency. For a further explanation of primary ringing frequency, refer to the *SERVORD Reference Manual*.

Multiparty lines are assigned as frequencies A, B, C, and D. Single-party lines assigned to ring code 0 in table LENLINES receive the primary frequency (frequency A).

The following table shows the five frequencies available for each of the types of frequency ringing, the ringing code used to access each, and the maximum number of lines on an LM bay (640 lines) that can ring simultaneously for each ringing generator.

If the frequency is a partial number (for example, 16.67 Hz), for input purposes the frequency is rounded off to the next highest number. The numbers used as input for these frequencies are enclosed in brackets and are shown after the actual frequency in the following table.

Frequencies available for frequency ringing types

	Decimonic		**Harmonic**		**Synchronic**		
Ring code input for table LENLINES	*Frequencies (Hz)*	*Lines*	*Frequencies (Hz)*	*Lines*	*Frequencies (Hz) Synch 16*	*Synch 20*	*Lines*
0	Primary		Primary		Primary	Primary	
1	20	12	16.67 (17)	15	16	20	12
2	30	9	25	11	30	30	9
3	40	6	33.33 (34)	7	42	42	6
4	50	4	50	4	54	54	4
5	60	4	66.67 (67)	3	66	66	3

Each LM can be assigned only four frequencies. If the ringing code of the fifth frequency is specified, the ringing code for the line defaults to the primary frequency.

If the ringing code in table LENLINES is 0 (zero), the station is assigned the primary frequency and a 6-s ringing cycle of 1.95 s ringing on and 4.05 s ringing off.

If the ringing code in table LENLINES is 1 to 5, the station is assigned the 6-s ringing cycles for frequencies A, B, C, and D as shown in the following table.

Ringing cycles for frequencies A,B,C and D

Frequency	Off	On	Off
A	0.60s	1.35s	4.05s
B	1.95s	1.35s	2.70s
C	3.30s	1.35s	1.35s
D	4.65s	1.35s	1.35s

The hardware product engineering codes (PEC) that support the various ringing types are shown below in the following table.

Ringing generator interface types and PECs

Hardware PEC	Ringing types supported
2X27AA	Coded 20 Hz and superimposed
2X27AB	Decimonic and coded 30 Hz
2X27AC	Harmonic
2X27AD	Synchronic 16
2X27AE	Synchronic 20

Datafill sequence and implications

Table LMINV must be datafilled before table LMRNG.

Table size

0 to 512 tuples

LMRNG (continued)

Datafill

The following table lists datafill for table LMRNG.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
FRAMENO		see subfields	*Frame number* This field consists of subfields SITE and FRAME.
	SITE	alphanumeric (1 to 4 characters) or blank	*Site* If office parameter USINGSITE in table OFCOPT and office parameter UNIQUE_BY_SITE_NUMBERING in table OFCENG are both equal to Y (yes), and if the line is remote from the host, enter the site name assigned to the remote location. Otherwise, if the line is located at the host, leave the subfield blank and SITE is datafilled by default with HOST. If parameter USINGSITE in table OFCOPT is equal to Y and parameter UNIQUE_BY_SITE_NUMBERING in table OFCENG is equal to N (no) (numbering is unique by office), the entry in subfield SITE is optional. If SITE is entered, it is checked for a match in one of the tables to which lines are assigned. If SITE is not entered, it is not datafilled by default and is not checked against one of the tables to which lines are assigned. The first character of all entries for this subfield must be alphabetic. If office parameter USINGSITE in table OFCOPT is equal to N, leave this subfield blank.
	FRAME	0 to 511	*Line module frame number* Enter the line module (LM) or remote line module (RLM) frame number. Frame numbers for NT40 range from 0 to 127. Frame numbers for SuperNode range from 0 to 511.

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
CNPRESV		52 V or 25V	*Coin presence voltage* Enter the voltage to use for coin presence tests.
RNGDATA		see subfield	*Ring data* This field consists of subfield RNGTYPE and refinements FREQUENCIES and PROMVOLT.
	RNGTYPE	C, CSR, C30, F, S, or UNASSIGNED	*Ring type* Enter one of the following types of ringing to assign to the line module: • C for coded ringing based on cyclic variation of 20 Hz and go to field EXPRETRP on the following page • CSR for coded 20 Hz special ringing and go to field EXPRETRP on the following page • C30 for coded ringing based on cyclic variation of 30 Hz and go to field EXPRETRP on the following page • F for frequency ringing and datafill refinement FREQUENCIES • S for superimposed ringing and datafill refinement PROMVOLT • UNASSIGNED if changing the ring type of a tuple and go to field EXPRETRP on the following page ***Note:*** Values C5A, C5B, C3C, or C3D can appear in the range of entries for field RNGTYPE; these are not valid entries for table LMRNG and are rejected if entered.
	FREQUEN-CIES	see subfields	*Frequencies* If the entry in subfield RNGTYPE is F, datafill this refinement. This refinement consists of subfields A, B, C, and D.

LMRNG (continued)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	A	16, 17, 20, 25, 30, 34, 40, 42, 50, 54, 60, 66, 67, or blank	*Frequency A* Enter the frequency assigned as frequency A (primary frequency).
	B	16, 17, 20, 25, 30, 34, 40, 42, 50, 54, 60, 66, 67, or blank	*Frequency B* Enter the frequency assigned as frequency B.
	C	16, 17, 20, 25, 30, 34, 40, 42, 50, 54, 60, 66, 67, or blank	*Frequency C* Enter the frequency assigned as frequency C.
	D	16, 17, 20, 25, 30, 34, 40, 42, 50, 54, 60, 66, 67, or blank	*Frequency D* Enter the frequency assigned as frequency D.
	PROMVOLT	40V or48V	*Prom offset voltage* If the entry in subfield RNGTYPE is S, datafill this refinement. Enter the PROM offset voltage required for the PROM in the ringing generator.
EXPRETRP		Y or N	*Extend pretrip* If DMS-1 links are present in the LM, enter Y (yes) to extend the ringing pretrip to 200 ms. Otherwise, enter N (no).

Datafill example

An example of datafill for table LMRNG is shown below.

MAP display example for table LMRNG

```
FRAMENO CNPRESV                    RNGDATA EXPRETRP
_____________________________________________________________________
 HOST 0     52V       C                            N
```

LNADMIN

Table name

Line Administration Table

Functional description

Table LNADMIN defines the office administration parameters the off-hook balance test requires. The operating company can enable or disable the test for originating calls in an office.

Note: Before the release of BCS35, the system did not always perform the off-hook balance network test on a line. The system only performed this test if the operating company disabled the new test.

Datafill sequence and meaning

You do not need to enter data in other tables before you enter data in table LNADMIN.

Table size

1 tuple

Datafill

Datafill for table LNADMIN appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LNADMKEY		0	*Line administration key*. Enter 0 to set the line administration key to 0.
CCOCC		0 to 50	*Central control occupancy*. Enter a numeric value to indicate the percentage of threshold central control (CC) occupancy. If the CC occupancy in the switch exceeds the threshold, the system skips off-hook balance test. The default value is 40.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TTUUSE		0 to 15	*Number of transmission test units used*. Enter the number of transmission test units (TTU) in the switch that the off-hook balance test can use. The default value is 1.
TESTTYPE		DISABLED or ORIG	*Test type*. Enter DISABLED to disable the off-hook balance test for all the office. Enter ORIG to indicate that the off-hook balance test is active. The system performs the test on originating calls for the whole office. The default value is DISABLED.

Datafill example

Sample datafill for table LNADMIN appears in the following example.

MAP example for table LNADMIN

```
LNADMKEY CCOCC TTUUSE  TESTYPE
_____________________________________________________________________
       0    40      8 DISABLED
```

Table history

BCS35

Table LNADMIN was introduced in BCS35.

LNBNV

Table name

Line Balance Network Value Table

Functional description

Table LNBNV allows operating company offices to enable or disable the new off-hook balance test for each line. After the test runs on a line, table LNBNV stores the recommended balance network value (BNV).

Note: Prior to BCS35, the off-hook balance network test can only occur with the new test disabled.

The system automatically adds entries for table LNBNV when you add the tuple to table LNINV. The system deletes entries from table LNBNV when you delete tuples from LNINV. You cannot add or delete tuples from table LNBNV.

Datafill sequence and meaning

Enter data in table LNINV before you enter data in table LNBNV.

Table size

The minimum table size is zero tuples. The number of tuples in table LNINV dynamically allocates the maximum size of the table.

Datafill

Datafill for table LNBNV appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LEN		refer to subfields	*Line equipment number*. This field defines the location of the equipment. The equipment connects to a specified telephone line. Field LEN is common to more than 60 tables. A single section documents this field to avoid a copy of information that is not necessary. Refer to the section “Common entry field LEN" for a complete description of field LEN and associated subfields. Field LEN contains subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT and CIRCUIT.
TESTTYPE		DISABLED or ORIG	*Test type disabled*. This field indicates the state of the off-hook balance test. Enter DISABLED to indicate that operating company disabled the off-hook balance test for that specified line. Enter ORIG to indicate that the operating company enabled the off-hook balance test. The test runs on the originating calls.

LNBNV (continued)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
BNV		9002, L, NA or N	*Balance network value*. This field stores the off-hook balance test result for the line specified in field LEN. The following are entry selections: • 9002. This entry indicates that a 9002 balance impedance is recommended for this line. • L. This entry indicates that a loaded impedance is recommended for the specified line. • NA. This entry indicates that the test result is not available. • NL. This entry indicates that a non-loaded impedance is recommended for the specified line.
TESTEX		Y or N	*Off-hook balance test executed*. Enter Y in this field to indicate that the operating company executes the off-hook balance test on the line. Enter N to indicate that the operating company did not execute the test on the line. ***Note 1:*** You cannot overwrite this field. ***Note 2:*** The system resets this field.

Datafill example

Sample datafill for table LNBNV appears in the following example.

MAP example for table LNBNV

```
                LEN TESTYPE  BNV TESTEX
_____________________________________________________

HOST 00 0 00 00    ORIG   NA      N
```

Table history

BCS35

Table LNBNV was introduced in BCS35.

LNCFPBAR

Table name

<Table Long Name>

Functional description

Table LNCFPBAR allows the operator to customize the restricted leading digits of forward-to DN.

Datafill sequence and meaning

There is no requirement to enter datafill into other tables before table LNCFPBAR.

Table size

0 to 10019 tuples

Datafill

The table that follows lists datafill for table LNCFPBAR.

Field descriptions

Field	Subfield	Entry	Explanation and action
BARNUM		0 to 9999 00 - 09 and 001 - 009	Restricted leading digits

Datafill example

The figure that follows shows sample datafill for table LNCFPBAR.

MAP display example for table LNCFPBAR

```
                  OPTKEY                          OPTINFO
-------------------------------------------------------

200
1357
```

Table history

CSP18/SN05

Table LNCFPBAR introduced for feature 59040509.

Additional information

Not applicable.

LNCODE

Table name

TOPS Line Number Method Of Coin Control Table

Functional description

Table LNCODE lists the one-, two- or three-digit code for coin collect, coin return and rering for each serving numbering plan area (SNPA). These codes are sent from the Traffic Operator Position System (TOPS) serving office to the end offices to signal the specific functions.

Datafill sequence and implications

There is no requirement to datafill other tables prior to table LNCODE.

Datafill

The following table lists datafill for table LNCODE.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LNKEY		0 to 9 (1 to 3 digits)	Line key. Enter the serving numbering plan area (SNPA) to which the coin control codes apply.
COINCOL		0 to 9 (1 to 3 digits)	Coin collect. Enter the code used to signal coin collect.
COINRET		0 to 9 (1 to 3 digits)	Coin return. Enter the code used to signal coin return.
RERING		0 to 9 (1 to 3 digits)	Rering. Enter the code used to signal rering.

Datafill example

The following example shows sample datafill for table LNCODE.

MAP display example for table LNCODE

```
LNKEY COINCOL COINRET RERING
_____________________________________________________________
  613      12      17     15
```

Table history

BCS36

Field SNPA was renamed to field LNKEY.

LNINV

Table name

Line Circuit Inventory Table

Functional description

Table LNINV lists the data for each line card slot for various peripheral module (PM) types, including the following:

- asynchronous interface module (AIM)
- digital line module (DLM)
- enhanced line concentrating module (ELCM)
- intelligent peripheral equipment (IPE)
- international line concentrating module (ILCM)
- ISDN line concentrating module (LCMI)
- line concentrating module (LCM)
- line digital trunk (LDT)
- line module (LM)
- Universal Edge 9000 (UE9000 or UEN)
- remote carrier urban (RCU)
- remote concentrator SLC-96 (RCS)
- remote concentrator terminal (RCT)
- remote digital terminal (RDT)
- remote line concentrating module (RLCM)
- remote switching center SONET (RSC-S)
- server service (SVR)
- small remote unit (SRU)
- proprietary phone (P-Phone) data link (V5PPHN)
- virtual line concentrating module (VLCM)

For information on line testing, refer to the *Lines Maintenance Guide*.

Datafill sequence and meaning

The following tables must be datafilled before table LNINV:

- LMINV
- LCMINV

- LCMDRINV
- LDTINV
- LNTDM
- ISGTDM

Field LEN must be datafilled in the PM inventory tables (for example, RDTINV) prior to datafilling table LNINV.

For RLD lines: the RLD site, frame and unit must be datafilled in the RLDNAME field in table LCMDRINV prior to datafilling a RLD line.

Additional datafill information

A remote switching center (RSC) must be provided as the site of an ELCM with ISDN (LCME).

For ISDN and RCU Meridian business set (MBS) lines, the value of field STATUS is set to WORKING.

Remote carrier urban (RCU) special-service, coin, MBS, and ISDN lines use only even-numbered circuits in table LNINV. Before a special-service line can be deleted from this table, the associated nailed-up cross-connection must be deleted from table PSNAILUP.

Special services module (SSM) channel units can be datafilled only if the RCU is equipped with SSMs and fields SSM1, SSM2, or both, are datafilled appropriately in table RCUINV. Circuit numbers 24 to 31 are not used on SSMs, so these must not be datafilled. At least three voice channel units must be datafilled for every SSM, or a carrier group alarm may be caused.

If SSM1 is configured, lines cannot be datafilled for slot 1 of control shelf 1, since a bus extender occupies the slot. If SSM2 is configured, lines cannot be datafilled for slot 2 of control shelf 1, since a bus extender occupies the slot.

Channel units that are part of special-service connections and are datafilled in table SPECCONN cannot be deleted from table LNINV.

If the integrated bit error rate test (IBERT) is datafilled only in table LNINV, the state when it is posted in the line test position (LTP) of the MAP display is installation busy (INB). If the idle (IDL) state is desired, then the IBERT must also be datafilled in table KSETINV with the DATA format.

LNINV (continued)

When datafilling table LNINV for IPE analog lines, fields PADGRP, STATUS, GND, and BNV are datafilled the same as IPE digital lines, with the following exceptions:

- Fields LSG and CIRCUIT must correspond to an IPE analog line card that supports only 16 circuits (numbered 0 to 15).
- Field MNO must be datafilled as N for IPE analog lines.

Global peripheral platform (GPP) PMs use virtual line addressing of lines connected to access nodes (AN). For more information about GPP virtual line addressing, see the “Lines” section in the “Supplementary information” section at the end of this chapter.

Table IPEINV must be datafilled for the IPE before analog lines associated with that IPE can be datafilled in table LNINV. Once tables IPEINV and LNINV are datafilled, table IBNLINES can be datafilled for IPE analog lines.

ATTENTION

ISDN line drawer for remote (ILDR) was first available for RSC-S and RSC configurations in the NA007/XPM08 time frame. ILDR was first available for RLCM, outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 time frame.

CAUTION

Risk of service interruption or degradation

Do not provision remote ISDN line drawer (RLD) line equipment numbers (LEN) on line concentrating modules (LCM) that directly subtend NTMX77-based line trunk controllers (LTC). This restriction is first required in the NA012/XPM12 time frame.

The restrictions in adding or changing an ILDR line in table LNINV are:

- ILDR drawers must be datafilled in table LCMDRINV before ILDR lines are datafilled in table LNINV.
- Verify that if the respective drawer is defined as ILDR in table LCMDRINV, the line card is suitable for an ILDR, that is, NTBX27.
- Verify that the line card number is in the range of 0 through 13. This is because ILDR supports up to 28 lines in a physical drawer (2 lines per line card x 14 slots = 28).

- Set the line state to WORKING, even if operating company personnel write a different state. This is because, unlike an LCME line, the ILDR does not require a special connection to the enhanced D-channel handler (EDCH) to be set up.
- The state of the drawer remains unchanged while the ILDR is defined. Defining the first line of an ILDR or deleting the last line of an ILDR does not change the state of the drawer. The state of the drawer is changed to Unequipped (NILDRWR) only when the ILDR is deleted from table LCMDRINV.

ISDN lines cannot be datafilled in table LNINV unless the access multiplexer capability (AMC) in which they reside has an ISDN C-channel for SAPI0 (ISDD) defined. The opposite direction is also checked. It is not possible to delete a C-channel from an AMC unless there are no ISDN lines defined for that AMC in this table. The same is true for public switched telephone networks (PSTN).

ISDN lines defined using a V5 interface in table LNINV are moved to status WORKING. This is true even if operating company personnel have datafilled the line as HASU.

For P-Phones, operating company personnel must provision a P-Phone data link (DL) on the interface before provisioning the P-Phone. Each interface has one P-Phone DL, and the P-Phone appears as padgroup V5PPHN. The P-Phone is only available on line equipment number (LEN) 0.

Table size

Memory is automatically allocated.

LNINV (continued)

Datafill

The table that follows lists datafill for table LNINV.

Field descriptions (Sheet 1 of 9)

Field	Subfield	Entry	Explanation and action
LEN		see subfields	*Line equipment number* This field defines the physical location of the equipment that is connected to a specific telephone line. ***Note:*** Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN” for a complete description of field LEN and associated subfields... Field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT. For RLD lines only, the RLD site, frame and unit that are defined in table LCMDRINV in the RLDNAME field are acceptable as the LEN site, frame and unit. For the integrated channel bank (ICB) that connects to the Expanded Subscriber Carrier Module-100 Access (ESMA) (also known as the SMA2), the LEN consists of the following subfields: SITE, FRAME, UNIT, RDTLINK, and CHANNEL. Refer to section “Common entry field LEN” for more information about ICB LENs. For GPPs, field LEN consists of SITE, FRAME, GROUP (CAS) or UNIT (V5), LINE CARRIER (CAS) or LAYER 3 ADDRESS1 (V5), and CHANNEL (CAS) or LAYER 3 ADDRESS 2 (V5). ***Note:*** For more information about GPP addressing, see the “Lines” section of the “Supplementary information” section.

Field descriptions (Sheet 2 of 9)

Field	Subfield	Entry	Explanation and action
CARDCODE		2X03AA 2X17AB 2X17AC 2X17AD 2X18AC 2X18AD 2X18AE 3A06AA 3A06BA 3A07AA 3A07BA 3A12AB 3A13AB 3A13AC 3A19AB 3A27AA 5D11AA 5D51AA 6X17AA 6X17AC 6X17AD 6X17BA 6X18AA 6X18AB 6X18BA 6X19AA 6X19AB 6X20AA 6X21AA 6X21AB 6X21AC 6X21AD 6X21BC 6X23AA 6X33AA 6X71AA 6X71AB 6X71AC 6X76AA 6X76AC 6X87AB 6X87BA	*Card code* Enter the product engineering code (PEC) of the line card. Values other than those listed in this field description can also be valid. Refer to the switch range for a comprehensive list of valid entry values. The 2X-based PECs refer to the LM-based PMs, while the 6X-based PECs refer to the lLCM-based PMs. QPP codes are for RCT; PSAP codes are for E911; and SCD and SSM codes are for RCU. NAILUP also applies to RCS modules. If submitting datafill for final lines, enter (“). If field MEMSIZE of the LCM hosting the line card in table LCMINV has a value of 4M 4M, (for Japan only), the only acceptable entries for field CARDCODE are 6X21AA, AB, AC, AD, or BC. All other entries create an error message and the tuple is rejected. ***Note:*** In the RLCM-EDC application for Japan only, line card slot 0 of drawer 0 is allowed by table control to support a 6X21 line card and will not impact functions of the RLCM-EDC.

LNINV (continued)

Field descriptions (Sheet 3 of 9)

Field	Subfield	Entry	Explanation and action
CARDCODE (continued)		6X88AB 6X88BA 6X93AA 6X93BA 6X93CA 6X93DA 6X93EA 6X93FA 6X94AA 6X94AB 6X94BA 6X94BB 6X94CA 6X94DA 6X95AA 6X95AB 6X98AA 6X99AA 7A20AA 7A21AA 7A22AA 7A23AA 7A25AA 7A26AA 7A27AA 7A31AA 7A33AA 8X47BA 8X73AA 8D02AA 8D02AB 8D02CC 8D02EA 8D09AA 8D03AB 8D03AE 8D03AH 8D03AJ 8D09AB 8D09AD 8D09AG	Card codes datafilled in table LNINV represent line card carriers, not line cards, for RCU, POTS, frequency selective ringing (FSR), and MPDR. For example, 3A06AA refers to the POTS line card carrier that holds POTS line cards. If the entry in field CARDCODE is 3A06BA or 3A07BA, datafill subfield CARDINFO. Enter RCUPOTS (for a POTS card) or RCUEPOTS (for an EPOTS card). Foreign exchange with battery office end (FXBO) and foreign exchange with battery station end (FXBS) use card codes that represent line cards. Different card codes cannot be datafilled in the same RCU slot. FXBS and FXBO cards are an exception to this rule, and can be mixed in the 6X11AB carrier. All two-wire and four-wire cards can be mixed in the 6X11BA carrier. All two-wire, four-wire, MBS, and ISDN cards can be mixed in the 6X11CA carrier.

Field descriptions (Sheet 4 of 9)

Field	Subfield	Entry	Explanation and action
CARDCODE (continued)		8D09AH 8D09AJ BX04AA BX25AA BX25AB BX26AA BX27AA CXIPCD DC5A DC5ADD EX17AA EX17BA EX17CA EX17DA FX17AA GX51AN GX51AS GX52BN GX52BS KX05AA KX06AA LGHGTB LGSGTB MLTCAL MUX15C NAILUP NP43AA NP44AA NP45AA NP46AA NP50AA PSAPNN PSAPWA PSAPWN QPP405 QPP407 QPP409 QPP440 QPP445 QPP541 VLCMCD VLCMPR RDTCON RDTICB	Only BX04AA is valid on an LCMI. CXIPCD = Centrex-IP International line card. Entries FX17AA, KX05AA, KX06AA, NP43AA, NP44AA, NP45AA, NP46AA, and NP47AA apply to the Universal Edge 9000. To datafill a world line card (WLC), enter the template name, which reflects the hardware characteristics rather than the hardware itself. Entry values that begin with the characters GX (such as GX51AN) are template names for German world line cards.

LNINV (continued)

Field descriptions (Sheet 5 of 9)

Field	Subfield	Entry	Explanation and action
CARDCODE (continued)		RDTISD RDTLS RDTLSG RDTEBS RDTLRB SCD203 SCD221 SCD233 SCD271 SCDFSR SHTTYB SSM2WV SSM4WD UKPSTN UKPTN1 UKPTN2 V5BRI V5PPHN WLAUAX WLAUBX WLBEAL WLBEAS WLBEBL WLBEBS WLBRAC WLBRAL WLBRAN WLBRBC WLBRBN WLBRBL WLCHAX WLEGAX WLEGBX WLFRAX WLFRBX WLIRAX WLIRBX WLITAN WLITAX WLITBN WLITBX WLNLAL WLNLAS WLNLBL WLNLBS WLNOAX WLPEAX	Entry values that begin with the characters UK (such as UKPSTN) are template names for UK-only world line cards. Entries VLCMCD and VLCMPR apply to the VLCM. VLCMCD is the cardcode for the CSV VLCM. VLCMPR is the cardcode for the Proximity-I VLCM. Entry values that begin with the characters WL (such as WL9002 or WL98AA) are template names for world line cards. WL17AC and WL18AA are obsolete and are here only for upgrading purposes. Card types T1LOOP, T1ERTH, and V5LOOP are valid only on access nodes connected to a Global Peripheral Platform (GPP). For more information about this field, and details concerning specific CARDCODE entry values, refer to the “Supplementary information” section in this chapter under the subheading “General line card information.”

Field descriptions (Sheet 6 of 9)

Field	Subfield	Entry	Explanation and action
CARDCODE (continued)		WLPEBX WLPOAX WLPOBX WLPTAX WLPTBX WLSPAX WLSPBX WL17AC WL18AA WL33AA WL9002 WL902B WL93AA WL93BA WL93CA WL93DA WL93EA WL94AA WL94AB WL94BB WL94CA WL94DA WL01AX WL01BX WL1740 WL98AA WL9A40 W2BRAL or W2BRBL	
PADGRP		alphanumeric	*Pad group* Enter the name of the pad group that is assigned to the line circuit in table PADDATA. Field PADGRP contains the name of the pad group in table PADDATA that lists the value of the pad circuits that can be switched into the line when the line is involved in a call. Different values for the pad circuits can be specified when the circuit connects to an agent with a different pad group.

LNINV (continued)

Field descriptions (Sheet 7 of 9)

Field	Subfield	Entry	Explanation and action
			The name can be one of the predefined names from table PADDATA or a name specified by the operating company and assigned in table PADDATA. For digital line modules (DLM) and NT8X47BA, you can assign only NPDGP (no pad group).
STATUS		CUTOFF, HASU, RESERVED, UNEQUIP, or WORKING	*Line inventory availability status* Enter the line inventory availability status. Valid entries are CUTOFF (cutoff), HASU (hardware assigned/software unassigned), RESERVED (reserved), UNEQUIP (unequipped), and WORKING (working). For DLMs and NT8X47BAs, only HASU or RESERVED can be assigned. To disable configuration alarms, ensure that every line datafilled for a line card carrier has the state of UNEQUIP. To return to an alarm status, you can either change field STATUS of a line to HASU through the table editor or add the directory number (DN) and change field STATUS to WORKING through the Service Order system (SERVORD). If the status of a line and the line configuration are correct, a configuration alarm is not raised.
GND		Y or N	*Ground* If the line is ground start, enter Y (yes). If the line is loop start, enter N (no). Enter loop start (N) for VLCMCD, VLCMPR, DLM, or NT8X47BA. ***Note:*** At final line time, the operating company can submit datafill to Nortel Networks for all ground start line equipment in order to change the value of field GND from N to Y.

Field descriptions (Sheet 8 of 9)

Field	Subfield	Entry	Explanation and action
BNV		L or NL	*Balanced network value* Enter L if the line circuit is configured for a loaded network. Enter NL for a non-loaded network. Enter NL for VLCMCD, VLCMPR, DLM, or NT8X47BA.
MNO		Y or N	*Manual override* Enter Y if the on-hook balance network test is to be prevented from updating field BNV in table LNINV. Enter N to allow the off-hook balance network test to update field BNV. Enter N for VLCMCD, VLCMPR, NT8D03AB, or NT8D09AB. Enter Y for DLM or NT8X47BA.
CARDINFO		RDT C, RDT S, or NIL	*Card information* When RDT is selected, the system presents a subfield prompting for C or S, where RDT C is synonymous with coded ringing, and RDT S is synonymous with superimposed ringing. RDT C or RDT S is permitted if table RDTINV, field VARTYPE is datafilled as GENTMC. The default value is NIL.
	CARDTYPE	FLXA, ISLCC, SSLCC, RCUEPOTS, RCUPOTS, or NIL	*Card type* The NIL value is the default. If the line card is contained in an RCU and the entry for field CARDCODE is not 3A06AA or 3A07AA, enter the following values: If CARDCODE is FLXA, the NT5D51AA and the NT8D02EA line cards allow voice on odd numbered and data on even numbered LENs for integrated voice and data sets. If CARDCODE is 3A06BA, enter RCUPOTS (for an NT3A10AA/AB card) or RCUEPOTS (for an NT3A10HA card). If CARDCODE is 3A07BA, enter RCUPOTS (for an NT3A10AA/AB card) or RCUEPOTS (for an NT3A10HA card).

LNINV (continued)

Field descriptions (Sheet 9 of 9)

Field	Subfield	Entry	Explanation and action
	CARDTYPE (continued)		If CARDCODE is 3A12AB, 3A13AB, or 3A13AC, and is contained in a two-wire line card carrier, enter NIL. If CARDCODE is 3A12AB, 3A13AB, 3A13AC, 7A20AA, 7A21AA, 7A22AA, 7A23AA, 7A25AA, 7A26AA, or 7A27AA and is contained in a four-wire special services line card carrier (SSLCC), enter SSLCC and datafill refinements FCN and INSVC. If CARDCODE is 3A12AB, 3A13AB, 3A13AC, 7A20AA, 7A21AA, 7A22AA, 7A23AA, 7A25AA, 7A26AA, or 7A27AA, and is contained in an integrated services line card carrier (ISLCC), enter ISLCC and datafill refinements FCN and INSVC. If CARDCODE is VLCMCD or VLCMPR, enter NIL as the card type. If CARDCODE is RDTICB, and table RDTINV, field VARTYPE is datafilled as ICB, enter ICB. After ICB is entered, the switch prompts for FXS. If RDT is selected, the system prompts for C or S, where C represents coded ringing and S represents superimposed ringing. You can enter RDT C or RDT S if table RDTINV, field VARTYPE contains GENTMC. Although MBS and ISDN lines can only be in an ISLCC, enter NIL as the card type for either of these line types.

CARDTYPE = SSLCC or ISLCC

If the entry in subfield CARDTYPE is SSLCC or ISLCC, datafill refinements FCN and INSVC as described below.

Field	Subfield	Entry	Explanation and action
	FCN	DPO, DPT, DX, EM, ETO, FXO, FXS, OCU, PLR, SM, TANDEM, or TO	*Function* This value defines the function of the two-wire and four-wire special service card (in the four-wire line card carrier). For the NT3A12AB card, enter FXS. For the NT3A13AB/AC card, enter FXO. For the NT7A22AA card, enter SM. For the NT7A23AA card, enter OCU. For the NT7A20AA card, enter FXO, FXS, ETO, TO, EM, PLR, or TANDEM. For the NT7A21AA card, enter DX, ETO, TO, EM, PLR, or TANDEM. ***Note:*** If EM, PLR, or TANDEM is entered, it is part of a paired configuration with the SM card in the next position. If the value SSLCC or ISLCC is datafilled for field CARDTYPE, or a value for field CARDCODE of 6X12AB, 6X13AB, or 6X13AC is datafilled with a CARDTYPE of NIL, a tuple in table LNINVEXT is automatically created. The value datafilled in field FCN determines the table default values for field FCN in table LNINVEXT.
	INSVC	Y or N	*In-service* Field INSVC enables or disables configuration alarms. Enter Y to indicate that the card has a special connection established. Alarms are produced if the card fails diagnostics. Enter N to indicate that the special connection is taken down. Trunk conditioning is applied and alarms are not produced if the card fails diagnostics.

LNINV (continued)

Datafill example

The following example shows sample datafill for table LNINV:

MAP display example for table LNINV

```
            LEN    CARDCODE PADGRP   STATUS   GND BNV MNO        CARDINFO
-------------------------------------------------------------------------
HOST   05 0 17 01    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 17 02    6X17AA  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 17 03    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 17 04    6X17AA  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 17 05    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 17 06    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 17 10    6X17AC  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 21 01    6X17AA  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 21 02    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 21 03    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 21 04    6X17AA  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 21 05    6X17AA  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 21 06    6X17AA  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 21 09    6X21AC  PPHON   WORKING    N  NL    Y            NIL
HOST   05 0 22 00    6X71AB  NPDGP   WORKING    N  NL    Y            NIL
HOST   05 0 23 00    6X17AC  NPDGP   WORKING    N  NL    N            NIL
HOST   05 0 23 01    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 23 02    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 23 03    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 23 04    6X17AC  NPDGP   WORKING    N  NL    N            NIL
HOST   05 0 23 05    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 23 06    6X17AA  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 23 07    6X21AC  PPHON   WORKING    N  NL    Y            NIL
HOST   05 0 23 08    6X17AB  STDLN   WORKING    N  NL    N            NIL
HOST   05 0 23 09    6X17AC  NPDGP   WORKING    N  NL    N            NIL
HOST   05 0 23 10    6X21AC  PPHON   WORKING    N  NL    Y            NIL
HOST   00 1 00 01    VLCMCD  STDLN   WORKING    N  NL    N            NIL
HOST   00 1 00 01    VLCMPR  STDLN   WORKING    N  NL    N            NIL
```

The following example shows datafill for table LNINV when field MEMSIZE of table LCMINV has a value of 4M 4M, for Japan only:

MAP display example for table LNINV in remote with extended distance capability application

```
            LEN    CARDCODE PADGRP   STATUS   GND BNV MNO        CARDINFO
-------------------------------------------------------------------------
REM1   00 0 00 00    6X21AD  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 00 01    6X21AB  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 00 02    6X21AA  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 00 03    6X21AB  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 00 04    6X21AA  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 00 05    6X21AB  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 00 06    6X21AC  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 00 10    6X21AC  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 01 01    6X21AA  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 01 02    6X21AB  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 01 03    6X21AB  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 01 04    6X21AA  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 01 05    6X21AA  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 01 06    6X21AA  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 01 09    6X21AC  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 02 00    6X21AB  STDLN   WORKING    N  NL   Y            NIL
REM1   00 0 02 00    6X21AC  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 02 01    6X21AD  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 02 02    6X21AD  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 02 03    6X21AD  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 02 04    6X21AC  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 02 05    6X21AB  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 03 06    6X21AA  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 03 07    6X21BC  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 03 08    6X21AB  STDLN   WORKING    N  NL   N            NIL
REM1   00 0 03 09    6X21AC  STDLN   WORKING    N  NL   N            NIL
```

The following example shows sample datafill for table LNINV with 1-Meg Modem Service:

LNINV (continued)

MAP display example for table LNINV with 1-Meg Modem Service

```
              LEN    CARDCODE PADGRP   STATUS   GND BNV MNO        CARDINFO
HOST   00 0 00 00    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 01    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 02    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 03    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 04    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 05    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 06    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 07    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 08    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 09    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 10    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 11    6X17AA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 12    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 13    EX17CA   STDLN    WORKING    N   NL    N           NIL
HOST   00 0 00 14    EX17CA   ONS      WORKING    N   NL    Y           NIL
HOST   00 0 00 15    6X17AA   NPDGP    WORKING    N   NL    Y           NIL
```

The following example shows sample datafill for UEN:

MAP display example for table LNINV for UEN

```
              LEN    CARDCODE PADGRP   STATUS   GND BNV MNO        CARDINFO
HOST 05 0 00 00      NP44AA   STDLN      HASU     N   NL    N           NIL
HOST 05 0 00 01      NP44AA   STDLN    WORKING    N   NL    N           NIL
HOST 05 0 00 03      NP44AA   STDLN    WORKING    N   NL    N           NIL
HOST 05 0 01 00      NP44AA   STDLN    WORKING    N   NL    N           NIL
HOST 05 0 01 01      NP44AA   STDLN    WORKING    N   NL    N           NIL
HOST 05 0 01 02      NP44AA   STDLN    WORKING    N   NL    N           NIL
Host 05 0 01 03      NP44AA   STDLN    WORKING    N   NL    N           NIL
Host 05 0 02 00      NP44AA   STDLN      HASU     N   NL    N           NIL
Host 05 0 02 01      NP44AA   STDLN      HASU     N   NL    N           NIL
Host 05 0 02 02      NP44AA   STDLN      HASU     N   NL    N           NIL
Host 05 0 03 00      NP50AA   STDLN    WORKING    N   NL    N           NIL
Host 05 0 03 01      NP50AA   STDLN    WORKING    N   NL    N           NIL
Host 05 0 03 02      NP50AA   STDLN    WORKING    N   NL    N           NIL
Host 05 0 03 03      NP50AA   STDLN    WORKING    N   NL    N           NIL
Host 05 0 03 04      NP50AA   STDLN    WORKING    N   NL    N           NIL
Host 05 0 03 05      NP50AA   STDLN    WORKING    N   NL    N           NIL
...
Host 05 0 03 31      NP50AA   STDLN    WORKING    N   NL    N           NIL
```

Supplementary information

This section provides additional information on datafilling table LNINV.

General line card information

1-Meg Modem Service

The xDSL line card (xLC) is the line card that supports the 1-Meg Modem Service. The xLC is a two-slot card that supports voice and data services. The xLC has three types of cards: NTEX17AA, NTEX17BA, NTEX17CA, and NTEX17DA. The cards support different transmission rates and drawer fill requirements.

An LCM line drawer can support most combinations of xLCs and POTS line cards. Refer to *1-Meg Modem Service Network Implementation Manual* (297-8063-200) for the engineering rules for the card fill in an LCM line drawer that supports 1-Meg Modem Service.

If an LCM line drawer has an xLC, the drawer must have a data-enhanced bus interface card (DBIC). The DBIC has three types of cards: NTEX54AA, NTEX54AB, NTEX54BA, and NTEX54CA. The cards support different transmission rates and interface requirements.

AIM line cards

The NT6X76AA (asynchronous interface line card) interfaces with the asynchronous interface module (AIM) using an RS422 protocol 5 volt link, and does not support ringing voltages or loop voltages of -48V. The link is intended for internal use within a building; maximum distance of 1219.2 m (4000 ft). The AIM communicates with data equipment through an RS232 link.

The NT6X76AC (DMS/SL-100 asynchronous interface line card) has a four-wire RS422 interface. Data terminal equipment (DTE) devices that are RS422 compatible can connect directly to the four-wire loop. RS232 compatible DTE can interface by an asynchronous interface line unit (AILU) or an AIM that performs the RS422 to RS232 conversion. The NT6X76AC card allows users access to simultaneous voice and low speed data communications over a two-wire facility provided through the use of integrated voice and data modems (IVDM) located in the DMS switch and on the customer premises.

DLM line cards

The NT8X47BA digital port card is used with the digital line module for M2000 digital telephones and the M3000 digital telephones. The NT8X47BA is a 32-channel port card equivalent to a line drawer that supports 16 M2000

LNINV (continued)

digital telephones or M3000 digital telephones, each capable of simultaneous voice and data transmission.

GPP line cards

Unlike DMS switch physical line cards that are identified by product codes, cards datafilled on generic access nodes (AN) are represented by the following equivalent virtual types:

- DC5A
- DC5ADD
- T1ERTH
- T1LOOP
- V5LOOP (for ANs with V5.2 interfaces)

In general, MDC station features are applicable only to GPP lines that serve subscriber stations using line card (LC) signaling (card code T1LOOP), not to GPP lines that serve PBXs using EC signaling (card code T1ERTH). The exceptions are routing features, such as Hunting.

E911 line cards (LDT)

The following card codes are used for Enhanced 911 Emergency Service (E911) LDTs to designate that the LEN belongs to a public safety answering point (PSAP). An LDT card code, along with field ANISPILL in the LDTPSAP option data of table HUNTGRP, defines the automatic number identification (ANI) protocol between the E911 tandem and an LDT PSAP. Field ANISPILL must correspond to the appropriate LDT card code datafilled for each LDT line assigned to a PSAP hunt group, as outlined below.

- PSAPNN is used for PSAPs that do not send a wink and do not expect ANI.
- PSAPWA is used for PSAPs that send a wink and expect ANI.
- PSAPWN is used for PSAPs that send a wink but do not expect ANI.

International line cards

The NT6X21BC (A-law international proprietary business set (P-phone) line card) is used in the international line concentrating module (ILCM), international remote line concentrating module (IRLCM), and very small remote (VSR).

Line card NT6X33AA (General use line card SMD type A, Japan) provides a single party voice and signaling interface between a two-wire analog subscriber line and the DMS-100 switch.

NT6X93CA (line card type A China) and NT6X93EA (line card type A - Australia) POTS lines can be datafilled on LCMEs.

The NT6X93BA international type A line card provides the signaling and transmission interface required between BT700 series telephone sets and DMS-100/Caribbean local offices. It can be datafilled in any slot in any line drawer of the ILCM.

The NT6X94AB (international type B line card) is used by single-party PBX and coin subscribers on the ILCMs. The international type B diagnostic consists of the following:

- International type A line card diagnostic NT6X93AA (line card type A Turkey)
- Metering pulse test for the 12-kHz metering signal
- Reversal relay test as used for the North American type B line cards

The major differences between the NT6X94AA and NT6X94AB cards are:

- A third relay has been added. This is the isolation relay for the NT6X94AB card.
- The NT6X94AB card uses less power.

The international line cards NT6X93BA, NT6X94BA, NT6X94BB, and NT6X95AB are used for the Caribbean expansion program.

The NT6X94BA international type B line card provides the signaling and transmission interface between the GEC-5600 coin box and the DMS-100 MMP switch. It can be datafilled for any slot in any line drawer of the ILCM.

The NT6X94BB (international type B line card), like the NT6X94AB, is used by single-party PBX and coin subscribers on the ILCMs and IRLCMs. The current international type B diagnostic consists of the following:

- International type A line card diagnostic NT6X93AA (line card type A Turkey)
- Metering pulse test for the 12-kHz metering signal
- Reversal relay test as used for the North American type B line cards

LNINV (continued)

The major differences between the NT6X94BA and NT6X94BB, identical to differences between the NT6X94AA and NT6X94AB, are:

- A third relay has been added. This is the isolation relay for the NT6X94BB card.
- The NT6X94BB card has a lower power consumption.

The NT6X95AB metering tone generator (MTG) card provides a 12- or 16-kHz sinusoidal tone for use with the NT6X94BA line card with metering. The MTG provides the metering tone for each physical ILCM drawer, and occupies slot 0 of the odd numbered ILCM drawer.

The international line cards NT6X93CA and NT6X94CA are for China. They have functionality that is identical to the NT6X93AA and NT6X94AA. The NT6X94CA has the capabilities of the NT6X93CA plus the following additional capabilities:

- battery reversal
- 16-kHz meter pulse generation for coin, PBX, and subscriber premise meter (SPM)

The NT6X93EA (line card type A - Australia) is for POTS and IBN lines.

The NT6X93DA type A and NT6X94DA type B cards are for use in Morocco. Diagnostics for the NT6X94DA type B are the same as those run for the NT6X93DA type A line card with the addition of a metering pulse test, an isolation relay test, and a battery reverse relay test.

The NT6X95AA (international metering tone card) provides the metering tone for an entire physical international LCM (ILCM) drawer. It is datafillable only in slot 0 of the odd numbered logical ILCM drawer. This ensures separation from the +48V power card.

IPE line cards

The intelligent peripheral equipment (IPE) supports the following cards for analog lines: NT8D03AB and NT8D09AB. The NT8D03AB (extended analog line card) supports 500/2500 sets without message waiting lamps. The NT8D09AB (extended message waiting line card) supports 500/2500 sets with message waiting lamps.

The NT5D11AA line card allows the IPE to interface a T1 with voicemail and voice response equipment. The operator must ensure that ports 8-15 of the second card slot are not used.

Defining CARDTYPE as FLXA, allows assignment of voice on odd numbered LEN and data on even numbered LENs of IPE digital line cards. The NT5D51AA provides virtual ports for conference bridging.

LCM line cards

For the LCM peripheral module line card, the following PECs apply:

- NT6X17AA (standard line circuit type A with cutover)
- NT6X17AD (current limiting POTS type A line card)
- NT6X18AA and NT6X18AB (line cards type B)

The NT6X18AB card gets the +48 V supply from the NT6X23AA power converter card, which is also used to provide the +48 V for Digitone fraud prevention. The NT6X23AA card can be datafilled only for slot 0 of the odd numbered drawer. The card takes up two slots and occupies slot 16 as well as slot 0. Both slots must be vacant before the NT6X23AA card can be datafilled.

The NT6X18AA line card is the LCM version of the LM POTS type B (NT2X18AE) line card and the NT6X18AB is the LCM version of the LM POTS type B (NT2X18AD) line card. The NT6X18AB differs from NT6X18AA in that it has an additional relay to handle the +48 V used for Digitone fraud prevention.

Card NT6X93FA (extended range line card) takes up three vertical slots in an LCM drawer. The primary slot for this card is the topmost of the three slots.

The following rules must be followed when assigning an NT6X93FA card:

- The primary ERLC slot can be placed only in the odd-numbered LCM drawers. The following message is displayed at the MAP terminal if an attempt is made to datafill an ERLC in an even LCM drawer:

```
ERROR - CAN ONLY ASSIGN  6X93FA IN ODD DRAWERS
```

- The two physical slots directly below the primary NT6X93FA slot must be empty. The following message is displayed at the MAP terminal if an attempt is made to datafill an NT6X93FA card and a card occupies one or both of the two slots physically below the primary ERLC slot:

```
ERROR -      ERROR - THE 3 SLOTS REQUIRED ARE NOT ALL FREE
```

- If the ERLC primary slot is in the range 0 to 15 of an odd numbered drawer, then the card in the slot directly above must not be an NT6X93FA. The following message is displayed if an attempt is made to datafill an

LNINV (continued)

NT6X93FA card in slots 0 to 15 when the slot above is occupied by an NT6X93FA card:

```
ERROR - OCCUPIED BY A 3-SLOT 6X93FA CARD
```

The following restriction applies when assigning a non-NT6X93FA card if NT6X93FA cards are available in the DMS-100 switch:

- A non-N6X93FA card cannot be datafilled in the two slots directly below the primary NT6X93FA slot. The following message is displayed when attempting to datafill a non-NT6X93FA card in a slot one or two rows directly below an NT6X93FA card:

```
ERROR - OCCUPIED BY A 3-SLOT 6X93FA CARD
```

The NT6X99AA (datapath bit error rate tester - two-slot) line card is used for the integrated bit error rate test (IBERT) for testing of datapaths (data units) and is not used for network or speech links in the DMS switch. An IBERT test measures the transmission quality of a data loop. A known stream of data is sent over a given loop and the reflected data received is compared with the sent data, thereby giving a measure of the transmission quality. By looping back the data at different points in the loop and measuring the transmission quality at different points, faults that exist on the loop can be isolated. The IBERT can be used to test any type of line card that supports the TLINK protocol. This includes data units, data above voice, AIM, coax eliminator data units, and loop extender data units. The IBERT must be located in an LCM or RLCM.

If an NT6X71AA (data line card DMS-100/SL-100) is added to table LNINV, field PADGRP is forced to entry value NPDGP and field MNO is forced to entry value Y.

The NT6X71AC (CSA/UL compliant line card) has enhanced front-end loop interface protection circuitry to support 600-V power cross safety.

LCM with world line cards

The NT6X17BA type A world line card (WLC) and NT6X18BA type B WLC are software programmable POTS line cards for LCMs. The WLC parameters, such as the card's transmission and signaling characteristics, loop current limit, and automatic loss equalization, are controlled by software in the central control (CC) module. Each software template has a unique name that can be datafilled against any WLC line in table LNINV. The data contained in each template is sent to the LCM at static data download when an LCM is returned to service (RTS) or when WLC-specific datafill is changed while the LCM is in service. The template data is also used to program the WLC when the LCM line card audit detects parameter loss (card reseated) and during diagnostics.

The WLC template requires the NT6X17BA and NT6X18BA WLCs and the Extended Memory LCM processor card (6X51AB). When card code entries 6X17BA and 6X18BA are datafilled in field CARDCODE, the WLC operates as an NT6X17AC card and NT6X18AA card respectively.

The WLC Type B WLC inherently supports metering and does not require the NT6X95 Metering Tone Generator Card.

The following WLC templates are suggested for use in North America. The Template Name identifies the Cardcode entered in table LNINV, and the Line Card identifies the physical card:

Template name	When to use	Line card
MLTCAL	Calibration target for AT&Ts MLT	NT6X17BA
WL1740	POTS with 40 mA current loop limit	NT6X17BA
WL9A40	Type A DLC interface - 40 mA limit	NT6X17BA
WL9002	Type A interface to DLCs	NT6X17BA
WL902B	Type B interface to DLCs	NT6X18BA
6X17BA	POTS	NT6X17BA
6X18BA	POTS Ground/Loop Start, coin.	NT6X18BA

The characteristics of each world line card template are as follows:

6X17BA template details (Sheet 1 of 2)

Characteristics	6X17BA
Input impedance	900 ohms || (0 ohms + 2.16 uF)
Balance impedance	NL: 88.9 ohms || (711.1 ohms + 63.3 nF)
	LD: 94.3 ohms || (1555.7 ohms + 5.6 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law

LNINV (continued)

6X17BA template details (Sheet 2 of 2)

Characteristics	6X17BA
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

6X18BA template details

Characteristics	6X18BA
Input impedance	900 ohms || (0 ohms + 2.16 uF)
Balance impedance	NL: 88.9 ohms || (711.1 ohms + 63.3 nF)
	LD: 94.3ohms || (1555.7 ohms || 5.6 nF)
	NL (GND): 88.9 ohms || (711.1 ohms + 63.3 nF)
	LD (GND): 94.3 ohms || (1555.7 ohms + 5.6 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	50 mA (NL & LD)
	40 mA (NL GND & L GND)
Equalization loss	no
Metering level, duration, frequency	not applicable

LGHGTB (long-line heavy gauge) template details (Sheet 1 of 2)

Characteristics	LGHGTB (long-line heavy gauge)
Input impedance	298 ohms || (1055 ohms + 2.16 uF)
Balance impedance	164 ohms || (1227 ohms + 350 nF)
	(162 ohms + 363 nF)
A-D gain at 1004Hz	-1 dB

LGHGTB (long-line heavy gauge) template details (Sheet 2 of 2)

Characteristics	LGHGTB (long-line heavy gauge)
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	40 mA
Equalization loss	yes
Metering level	0.5 Vrms
Metering duration	200 ms
Metering frequency	16 kHz

LGSGTB (long-line small gauge) template details

Characteristics	LGSGTB (long-line small gauge)
Input impedance	298 ohms || (1055 ohms + 2.16 uF)
Balance impedance	270 ohms || (1434 ohms + 265 nF) (263 ohms + 358 nF)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	40 mA
Equalization loss	yes
Metering level	0.5 Vrms
Metering duration	200 ms
Metering frequency	16 kHz

LNINV (continued)

MLTCAL template details

Characteristics	MLTCAL
Input impedance	900 ohms || (0 ohms + 2.16 nF)
Balance impedance	88.9 ohms || (711.1 ohms + 63.3 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	none
Equalization loss	no
Metering level, duration, frequency	not applicable

MUX15C template details

Characteristics	MUX15C
Input impedance	300 ohms || (696 ohms + 223 nF)
Balance impedance	300 ohms || (696 ohms + 223 nF)
A-D gain at 1004Hz	-6 dB
D-A gain at 1004Hz	-1 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	40 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

SHTTYB (short-line) template details

Characteristics	SHTTYB (short-line)
Input impedance	298 ohms || (1055 ohms + 2.16 uF)
Balance impedance	259 ohms || (676.8 ohms + 400 nF) (194.3 ohms + 246 nF)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	40 mA
Equalization loss	yes
Metering level	0.5 Vrms
Metering duration	200 ms
Metering frequency	16 kHz

UKPSTN (short-line) template details

Characteristics	UKPSTN (short-line)
Input impedance	298 ohms || (1055 ohms + 2.16 uF)
Balance impedance	259 ohms || (676.8 ohms + 400 nF) (194.3 ohms + 246 nF)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	40 mA
Equalization loss	yes
Metering level, duration, frequency	not applicable

LNINV (continued)

UKPTN1 (long-line heavy gauge) template details

Characteristics	UKPTN1 (long-line heavy gauge)
Input impedance	298 ohms || (1055 ohms + 2.16 uF)
Balance impedance	164 ohms || (1227 ohms + 350 nF) (162 ohms + 363 nF)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	40 mA
Equalization loss	yes
Metering level, duration, frequency	not applicable

UKPTN2 (long-line small gauge) template details

Characteristics	UKPTN2 (long-line small gauge)
Input impedance	298 ohms || (1055 ohms + 2.16 uF)
Balance impedance	270 ohms || (1434 ohms + 265 nF) (263 ohms + 358 nF)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	40 mA
Equalization loss	yes
Metering level, duration, frequency	not applicable

W2BRAL (loaded) template details

Characteristics	W2BRAL (loaded)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	0 ohms || (1650 ohms + 5 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

W2BRBL (loaded) template details

Characteristics	W2BRBL (loaded)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	0 ohms || (1650 ohms + 5 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	148 ms
Metering frequency	12 kHz

LNINV (continued)

WL01AX template details

Characteristics	WL01AX
Input impedance	220 ohms || (820 ohms + 120 nF)
Balance impedance	220 ohms || (820 ohms + 120 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-2 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL01BX template details

Characteristics	WL01BX
Input impedance	220 ohms || (820 ohms + 120 nF)
Balance impedance	220 ohms || (820 ohms + 120 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-2 dB
Off-hook supervision threshold	6 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL1740 template details

Characteristics	WL1740
Input impedance	900 ohms || (0 ohms + 2.16 uF)
Balance impedance	88.9 ohms || (711.1 ohms + 63.3 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	40 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL9002 (9 + 2 balanced) template details

Characteristics	WL9002 (9 + 2 balanced)
Input impedance	900 ohms || (0 ohms + 2.16 uF)
Balance impedance	900 ohms || (0 ohms + 2.16 uF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

LNINV (continued)

WL902B (9 + 2 balanced) template details

Characteristics	WL902B (9 + 2 balanced)
Input impedance	900 ohms || (0 ohms + 2.16 uF)
Balance impedance	900 ohms || (0 ohms + 2.16 uF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL902B (9 + 2 ground) template details

Characteristics	WL902B (9 + 2 ground)
Input impedance	900 ohms || (0 ohms + 2.16 uF)
Balance impedance	900 ohms || (0 ohms + 2.16 uF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	40 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL33AA template details (Sheet 1 of 2)

Characteristics	WL33AA
Input impedance	600 ohms || (0 ohms + 1.0 uF)
Balance impedance	150 ohms || (830 ohms + 72 nF)

WL33AA template details (Sheet 2 of 2)

Characteristics	WL33AA
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	85 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	148 ms
Metering frequency	12 kHz

WL93AA template details

Characteristics	WL93AA
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	85.7 ohms || (514.3 ohms + 68.1nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL93BA template details (Sheet 1 of 2)

Characteristics	WL93BA
Input impedance	300 ohms || (1000 ohms + 220 nF)
Balance impedance	370 ohms || (620 ohms + 310 nF)

LNINV (continued)

WL93BA template details (Sheet 2 of 2)

Characteristics	WL93BA
A-D gain at 1004Hz	-4 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL93CA template details

Characteristics	WL93CA
Input impedance	200 ohms || (680 ohms + 100 nF)
Balance impedance	160 ohms || (780 ohms + 115 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL93DA template details (Sheet 1 of 2)

Characteristics	WL93DA
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	210 ohms || (880 ohms + 150 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB

WL93DA template details (Sheet 2 of 2)

Characteristics	WL93DA
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL93EA template details

Characteristics	WL93EA
Input impedance	220 ohms || (820 ohms + 120 nF)
Balance impedance	220 ohms || (820 ohms + 120 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-2 dB
Off-hook supervision threshold	6 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL94AB template details (Sheet 1 of 2)

Characteristics	WL94AB
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	85.7 ohms || (514.3 ohms + 68.1 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law

LNINV (continued)

WL94AB template details (Sheet 2 of 2)

Characteristics	WL94AB
Current limit	50 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	148 ms
Metering frequency	12 kHz

WL94BB template details

Characteristics	WL94BB
Input impedance	300 ohms || (1 k ohms + 220 nF)
Balance impedance	370 ohms || (620 ohms + 310 nF)
A-D gain at 1004Hz	-4 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	100 ms
Metering frequency	12 kHz

WL94CA template details (Sheet 1 of 2)

Characteristics	WL94CA
Input impedance	200 ohms || (680 ohms + 100 nF)
Balance impedance	160 ohms || (780 ohms + 115 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB

WL94CA template details (Sheet 2 of 2)

Characteristics	WL94CA
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	50 mA
Equalization loss	no
Metering level	2.0 Vrms
Metering duration	148 ms
Metering frequency	16 kHz

WL94DA template details

Characteristics	WL94DA
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	210 ohms || (880 ohms + 150 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level	2.0 Vrms
Metering duration	100 ms
Metering frequency	12 kHz

WL98AA (scope dial) template details (Sheet 1 of 2)

Characteristics	WL98AA (scope dial)
Input impedance	300 ohms || (1 k ohms + 220 nF)
Balance impedance	370 ohms || (620 ohms + 310 nF)

LNINV (continued)

WL98AA (scope dial) template details (Sheet 2 of 2)

Characteristics	WL98AA (scope dial)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WL9A40 (9 + 2) template details

Characteristics	WL9A40 (9 + 2)
Input impedance	900 ohms || (0 ohms + 2.16 uF)
Balance impedance	900 ohms || (0 ohms + 2.16 uF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	u-law
Current limit	40 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLAUAX and WLAUBX template details (Sheet 1 of 2)

Characteristics	WLAUAX	WLAUBX
Input impedance	220 ohms || (820 ohms + 120 nF)	220 ohms || (820 ohms + 120 nF)
Balance impedance	220 ohms || (820 ohms + 120 nF)	220 ohms || (820 ohms + 120 nF)

WLAUAX and WLAUBX template details (Sheet 2 of 2)

Characteristics	WLAUAX	WLAUBX
A-D gain at 1004 Hz	0 dB	0dB
D-A gain at 1004 Hz	-7 dB	-7 dB
On/Off hook threshold	12 mA	12 mA
PCM encoding	A-Law	A-Law
Current limiting	50 mA	50 mA
Equalization loss	no	no
Loop resistance	2 k ohms	2 k ohms
Battery voltage	44.5 - 53 V	44.5 - 53 V
Metering level	not applicable	2.0 Vrms
Metering duration	not applicable	100 ms
Metering frequency	not applicable	12 kHz

WLBEAL (long-line) template details

Characteristics	WLBEAL (long-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	150 ohms || (830 ohms + 72 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	2 k ohms
Battery voltage	44.5 - 53 V
Metering level, duration, frequency	not applicable

LNINV (continued)

WLBEAS (short-line) template details

Characteristics	WLBEAS (short-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	600 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	2 k ohms
Battery voltage	44.5 - 53 V
Metering level, duration, frequency	not applicable

WLBEBL (long-line) template details (Sheet 1 of 2)

Characteristics	WLBEBL (long-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	150 ohms || (830 ohms + 72 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	2 k ohms
Battery voltage	44.5 - 53 V
Metering level	2.3 Vrms

WLBEBL (long-line) template details (Sheet 2 of 2)

Characteristics	WLBEBL (long-line)
Metering duration	150 ms
Metering frequency	16 kHz

WLBEBS (short-line) template details

Characteristics	WLBEBS (short-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	600 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	2 k ohms
Battery voltage	44.5 - 53 V
Metering level	2.3 Vrms
Metering duration	150 ms
Metering frequency	16 kHz

WLBRAC (carrier) template details (Sheet 1 of 2)

Characteristics	WLBRAC (carrier)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	900 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA

LNINV (continued)

WLBRAC (carrier) template details (Sheet 2 of 2)

Characteristics	WLBRAC (carrier)
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLBRAL (loaded) template details

Characteristics	WLBRAL (loaded)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	300 ohms || (1650 ohms + 50 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLBRAN (not loaded) template details (Sheet 1 of 2)

Characteristics	WLBRAN (not loaded)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	800 ohms || (0 ohms + 5 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA

WLBRAN (not loaded) template details (Sheet 2 of 2)

Characteristics	WLBRAN (not loaded)
Equalization loss	no
Metering level, duration, frequency	not applicable

WLBRBC (carrier) template details

Characteristics	WLBRBC (carrier)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	900 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	148 ms
Metering frequency	12 kHz

WLBRBL (loaded) template details (Sheet 1 of 2)

Characteristics	WLBRBL (loaded)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	300 ohms || (1650 ohms + 50 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA

LNINV (continued)

WLBRBL (loaded) template details (Sheet 2 of 2)

Characteristics	WLBRBL (loaded)
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	148 ms
Metering frequency	12 kHz

WLBRBN (not loaded) template details

Characteristics	WLBRBN (not loaded)
Input impedance	900 ohms || (0 ohms + 0 F)
Balance impedance	800 ohms || (0 ohms + 5 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	148 ms
Metering frequency	12 kHz

WLCHAX template details (Sheet 1 of 2)

Characteristics	WLCHAX
Input impedance	220 ohms || (820 ohms + 115 nF)
Balance impedance	220 ohms || (820 ohms + 115 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004 Hz	-6.5 dB
On/Off hook threshold	12 mA

WLCHAX template details (Sheet 2 of 2)

Characteristics	WLCHAX
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop Resistance	600 - 2200 ohms
Battery Voltage	43 - 57 V
Metering level, duration, frequency	not applicable

WLEGAX template details

Characteristics	WLEGAX
Input impedance	600 ohms || (0 ohms + 0 F)
Balance impedance	600 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	40 mA
Equalization loss	yes
Loop resistance	0 - 2 k ohms
Battery voltage	-52 V (nominal)
Metering level, duration, frequency	not applicable

WLEGBX template details (Sheet 1 of 2)

Characteristics	WLEGBX
Input impedance	600 ohms || (0 ohms + 0 F)
Balance impedance	600 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	-1 dB

LNINV (continued)

WLEGBX template details (Sheet 2 of 2)

Characteristics	WLEGBX
D-A gain at 1004Hz	-6 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	40 mA
Equalization loss	yes
Loop resistance	0 - 2 k ohms
Battery voltage	-52 V (nominal)
Metering level	2.3 Vrms
Metering duration	150 ms
Metering frequency	16 kHz

WLFRAX template details

Characteristics	WLFRAX
Input impedance	215 ohms || (1 k ohms + 137 nF)
Balance impedance	0 ohms || (600 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	65 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLFRBX template details

Characteristics	WLFRBX
Input impedance	215 ohms || (1 k ohms + 137 nF)
Balance impedance	0 ohms || (600 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	65 mA
Equalization loss	no
Metering level	2.2 Vrms
Metering duration	125 ms
Metering frequency	12 kHz

WLIRAX template details

Characteristics	WLIRAX
Input impedance	298 ohms || (1055 ohms + 216 nF)
Balance impedance	259 ohms || (677 ohms + 400 nF) (194 ohms + 246 nF)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	0 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	40 mA
Equalization loss	yes
Loop resistance	0 - 2 k ohms
Battery voltage	48 V (nominal)
Metering level, duration, frequency	not applicable

LNINV (continued)

WLIRBX template details

Characteristics	WLIRBX
Input impedance	298 ohms || (1055 ohms + 216 nF)
Balance impedance	259 ohms || (677 ohms + 400 nF) (194 ohms + 246 nF)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	0 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	40 mA
Equalization loss	yes
Loop resistance	0 - 2 k ohms
Battery voltage	48 V (nominal)
Metering level	2.6 Vrms
Metering duration	120 ms
Metering frequency	12 kHz

WLITAN template details (Sheet 1 of 2)

Characteristics	WLITAN
Input impedance	600 ohms || (0 ohms + 0 F)
Balance impedance	600 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	1880 ohms

WLITAN template details (Sheet 2 of 2)

Characteristics	WLITAN
Battery voltage	44 - 52 V
Metering level, duration, frequency	not applicable

WLITBN template details

Characteristics	WLITBN
Input impedance	600 ohms || (0 ohms + 0 F)
Balance impedance	600 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	1880 ohms
Battery voltage	44 - 52 V
Metering level	2.3 Vrms
Metering duration	125 ms
Metering frequency	12 kHz

WLITAX template details (Sheet 1 of 2)

Characteristics	WLITAX
Input impedance	180 ohms || (630 ohms + 60 nF)
Balance impedance	0 ohms || (750 ohms + 18 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA

LNINV (continued)

WLITAX template details (Sheet 2 of 2)

Characteristics	WLITAX
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	1880 ohms
Battery voltage	44 - 52 V
Metering level, duration, frequency	not applicable

WLITBX template details

Characteristics	WLITBX
Input impedance	180 ohms || (630 ohms + 60 nF)
Balance impedance	0 ohms || (750 ohms + 18 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Equalization loss	no
Loop resistance	1880 ohms
Battery voltage	44 - 52 V
Metering level	2.3 Vrms
Metering duration	125 ms
Metering frequency	12 kHz

WLNLAL (long-line) template details

Characteristics	WLNLAL (long-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	150 ohms || (830 ohms + 72 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Eualization loss	no
Loop resistance	2 k ohms
Battery voltage	44.5 - 53 V
Metering level, duration, frequency	not applicable

WLNLAS (short-line) template details

Characteristics	WLNLAS (short-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	0 ohms || (600 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Eualization loss	no
Loop resistance	2 k ohms
Battery voltage	44.5 - 53 V
Metering level, duration, frequency	not applicable

LNINV (continued)

WLNLBL (long-line) template details

Characteristics	WLNLBL (long-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	150 ohms || (830 ohms + 72 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Eualization loss	no
Metering level	2.3 Vrms
Metering duration	150 ms
Metering frequency	16 kHz

WLNLBS (short-line) template details

Characteristics	WLNLBS (short-line)
Input impedance	150 ohms || (830 ohms + 72 nF)
Balance impedance	0 ohms || (600 ohms + 0 F)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
On/Off hook threshold	12 mA
PCM encoding	A-Law
Current limiting	55 mA
Eualization loss	no
Metering level	2.3 Vrms
Metering duration	150 ms
Metering frequency	16 kHz

WLNOAX template details

Characteristics	WLNOAX
Input impedance	120 ohms || (820 ohms + 110 nF)
Balance impedance	120 ohms || (820 ohms + 110 nF)
A-D gain at 1004Hz	2 dB
D-A gain at 1004Hz	- 5dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	55 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLPEAX template details

Characteristics	WLPEAX
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	85.7 ohms || (514.3 ohms + 68.1 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLPEBX template details (Sheet 1 of 2)

Characteristics	WLPEBX
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	85.7 ohms || (514.3 ohms + 68.1 nF)

LNINV (continued)

WLPEBX template details (Sheet 2 of 2)

Characteristics	WLPEBX
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	75 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	148 ms
Metering frequency	12 kHz

WLPOAX template details

Characteristics	WLPOAX
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	85.7 ohms || (514.3 ohms + 68.1 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	55 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLPOBX template details (Sheet 1 of 2)

Characteristics	WLPOBX
Input impedance	600 ohms || (0 ohms + 2.16 uF)
Balance impedance	85.7 ohms || (514.3 ohms + 68.1 nF)

WLPOBX template details (Sheet 2 of 2)

Characteristics	WLPOBX
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	0 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	55 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	125 ms
Metering frequency	16 kHz

WLPTAX template details

Characteristics	WLPTAX
Input impedance	600 ohms || (0 ohms + 0 F)
Balance impedance	600 ohms || (0 ohms + 0 F)
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLPTBX template details (Sheet 1 of 2)

Characteristics	WLPTBX
Input impedance	600 ohms || (0 ohms + 0 F)
Balance impedance	600 ohms || (0 ohms + 0 F)

LNINV (continued)

WLPTBX template details (Sheet 2 of 2)

Characteristics	WLPTBX
A-D gain at 1004Hz	-1 dB
D-A gain at 1004Hz	-6 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLSPAX template details

Characteristics	WLSPAX
Input impedance	220 ohms || (820 ohms + 120 nF)
Balance impedance	220 ohms || (820 ohms + 120 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	50 mA
Equalization loss	no
Metering level, duration, frequency	not applicable

WLSPBX template details (Sheet 1 of 2)

Characteristics	WLSPBX
Input impedance	220 ohms || (820 ohms + 120 nF)
Balance impedance	220 ohms || (820 ohms + 120 nF)
A-D gain at 1004Hz	0 dB
D-A gain at 1004Hz	-7 dB

WLSPBX template details (Sheet 2 of 2)

Characteristics	WLSPBX
Off-hook supervision threshold	12 mA
PCM encoding	A-law
Current limit	50 mA
Equalization loss	no
Metering level	2.3 Vrms
Metering duration	150 ms
Metering frequency	12 kHz

LCM with ISDN line cards

The NTBX04AA is the optical ISDN line card (OISLC) that is used in the LCMI equipped with optical line drawers. Due to power supply and heat dissipation requirements, each optical line drawer can support a maximum of eight OISLCs. Therefore, each LCMI can support a maximum of 64 OISLCs.

Only the card code BX04AA is valid on an LCMI. All other card codes are blocked from datafill. When going to release NA002, delete all existing tuples created prior to NA002 relating to the LCMI and not having entry BX04AA in field CARDCODE.

The NTBX25AB is the ISDN ISLC-1C line card used in the LCMI drawer. The ISLC-1C can be mixed with the ISLC-1B line cards in the same drawer. When used in the LCMI drawer, a maximum of 20 ISLC-1C cards can be put into each physical drawer because of heat dissipation requirements, even though the drawer can house 24 ISLC-1C cards.

The NTBX26AA (ISDN S/T line card) provides the ISDN basic rate access (2B+D) S/T-bus network interface. It is used in the LCMI and LCME drawer and occupies two slots.

The BX26AA card can be datafilled for lines on LCMIs that connect to a PRCC with an ISP.

The NTBX27AA (2B1Q U-interface ISDN line card) is used in the LCME drawer as well as the LCM, RLCM, OPM, or OPAC's ILDR.

The coin line card is a large card supporting four subscribers.

LNINV (continued)

Line module line cards

Line card 0 in line drawer 0 on each line module must be equipped with an NT2X17AB, AC, or AD line card. This card is required for diagnostics and cannot be assigned to a station.

PBX line cards

Coin first ground start lines must have a card with product engineering code (PEC) NT2X18AD or AE. Private branch exchange (PBX) ground start lines must have a card with a PEC of NT2X18AC, AD, or AE. If subscriber telephones are sensitive to ringing voltage polarity, a type B line card must be used (for example, PEC NT2X18).

For PBXs equipped with the Message Center feature, use PEC NT6X19AA message waiting line cards and PEC NT6X20AA message waiting converter cards. The NT6X20AA card occupies two card slots, slot 0 and 16 of the odd numbered drawers. The NT6X20AA card is assigned to slot 0 of the odd numbered drawers. Both slots 0 and 16 must be vacant before they can be datafilled.

The NT6X98AA line card provides the transmission and signaling interface required between BT700 series telephone sets and the SL-100 digital PBX.

P-phone line cards

For P-phone integrated line cards, use PECs NT6X21AA (replaces NT6X58AA) and NT6X21AD.

The NT6X21BC (A-law international P-phone line card) is used in the international line concentrating module (ILCM), international remote line concentrating module (IRLCM), and very small remote (VSR).

RCS line cards

The remote concentrator SLC-96 (RCS) supports the following cards:

- single-party (SCD203)
- multiparty (SCD221)
- coin (SCD233)
- frequency selective ringing (SCDFSR)
- special plain ordinary telephone service, SPOTS (SCD271)
- special-service (NAILUP)

Datafill SCD222 900-Ω and SCD252 1500-Ω FSR cards as SCDFSR for frequency selective ringing. Multiparty cards cannot be used in an RCS that is set up for frequency selective ringing.

The SPOTS card can be used for single-party or special services. If used for special services, it must be datafilled as NAILUP. Prior to BCS35, both circuits in the SPOTS card were required to be datafilled as either loop start or ground start. SPOTS cards may now be datafilled with split service (for example, field GND can be set to Y for one circuit and to N for the other).

Datafilling SPOTS cards in a mode III RCS is not recommended because equipment in mode III multiplexes 48 time slots onto two DS-1 lines and expects only single-circuit cards. If SPOTS cards are datafilled, only even-numbered circuits for the cards can be used.

RCT line cards

The remote concentrator terminal (RCT) supports the following cards (the card code datafill appears in parentheses):

- single-party remote (QPP405)
- universal remote (QPP407)
- frequency selective remote (QPP440 and QPP541)
- superimposed remote, four lines per card (QPP445)
- universal coin remote (QPP409)

RCU line cards

The remote carrier urban (RCU) supports the line cards and special-service channel units listed below. The card code datafill appears in parentheses:

- POTS (3A06AA)
- EPOTS (3A06BA)
- FSR (3A07AA)
- EFSR (3A07BA)
- MPDR (3A19AB)
- FXBS (3A12AB)
- FXBO (3A13AB/AC)
- coin (3A27AA)
- FXB voice frequency (7A20AA, 7A25AA, 7A26AA, 7A27AA)
- duplex voice frequency (7A21AA)
- signaling module (7A22AA)
- office channel unit data port (7A23AA)
- ISDN (7A31AA)

LNINV (continued)

- RCU MBS (7A33AA)
- dial pulse originating with extended range, QPP354E1 (SSM2WV)
- dial pulse terminating with extended range, QPP356G1 (SSM2WV)
- two-wire foreign exchange station end with gain transfer, QPP501B (SSM2WV)
- two-wire foreign exchange office end with gain transfer, QPP502B, (SSM2WV)
- four-wire E&M with pulse link repeater, QPP537B (SSM4WV)
- two-wire E&M 600, QPP538C (SSM2WV)
- four-wire FXS, QPP473A (SSM4WV)
- four-wire FXO, QPP474A (SSM4WV)
- four-wire ETO, QPP475A (SSM4WV)
- four-wire DX, QPP476B (SSM4WV)
- two-wire DX, QPP477A (SSM2WV)
- 2.4 kbit/s OCU, QPP550A (SSM4WD)
- 4.8 kbit/s OCU, QPP551A (SSM4WD)
- 9.6 kbit/s OCU, QPP552A (SSM4WD)
- 56 kbit/s OCU, QPP553A (SSM4WD)
- DS-0/DP D50 level dataport, QPP554A (SSM4WD)
- 56 kbit/s OCU without error correction, QPP575A (SSM4WD)
- datapath extension (QPP628)

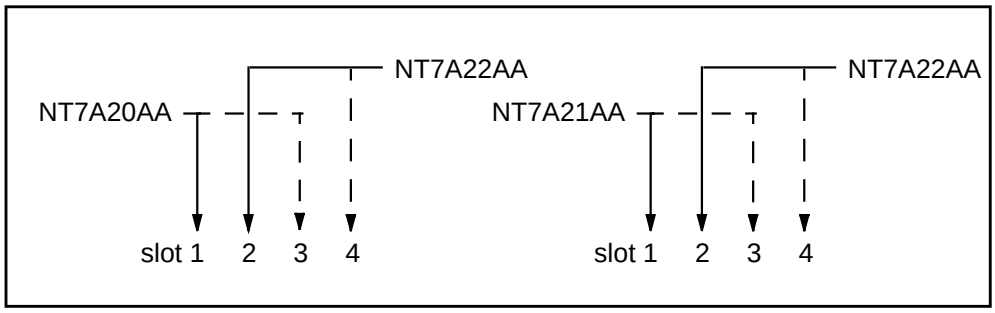
RCU special-service line cards

Special services for the RCU can be provided using the NT7A20AA, NT7A21AA, NT7A22AA, and NT7A23AA cards, and the NT3A11BA (special services line card carrier). By using this configuration, the special services module (SSM) is not required.

The existing FXB line card carrier (NT3A11AB) can house only the existing two-wire FXB line cards (NT3A12 and NT3A13), while the BCS30 special services line card carrier (NT3A11BA) can house both the BCS30 four-wire special service line cards and the existing two-wire special service line cards.

The NT7A20AA card provides FX and equalized transmission services. The NT7A21AA card provides three services: duplex, transmission only, and equalized transmission only.

The NT7A22AA card must be paired with an NT7A20AA or NT7A21AA card. When paired with one of these cards, E&M, PLR, and tandem signaling is provided. To configure these combinations, an NT7A20AA or NT7A21AA card is inserted in positions 1, 3, or both of the carrier, and a companion NT7A22AA card is inserted in positions 2, 4, or both of the carrier.



The NT7A23AA card provides digital data services.

The NT7A20AA card is for four-wire FXS, FXO, ETO, TO, EM, PLR, or TANDEM. The NT7A21AA card is for four-wire DX, ETO, TO, EM, PLR, or TANDEM. The NT7A22AA card is for four-wire signaling. The NT7A23AA card is for four-wire OCU.

The NT7A33AA card is used for RCU MBS lines using D-channel signaling. The NT7A31AA card is used for ISDN lines.

For more information on special service line cards for the RCU, refer to the *Subscriber Carrier Module-100 Urban Maintenance Manual*, 297-8241-550.

RDT line cards

Card codes RDTLS and RDTLSG are used for POTS lines. RDT line tuples datafilled in table LNINV with either RDTLS or RDTLSG in field CARDCODE cannot have any corresponding tuples datafilled in the KSET tables. Corresponding tuples can be datafilled in tables IBNLINES and LENLINES.

Card code RDTISD is used for an RDT ISDN line. Card code RDTCON is used for an RDT coin line. Table line assignment for coin lines is made in table LENLINES. Field LNATTIDX in table LENLINES must correspond to the line class code (LCC) value of either CCF, CDF, or CSP that is datafilled in table LINEATTR.

Card code RDTEBS is used for an RDT EBS. The VARTYPE field in table RDTINV must be NTPROP for a tuple datafilled in table LNINV with card code equal to RDTEBS.

LNINV (continued)

Card codes RDTLS, RDTLSG, RDTCON, RDTEBS, RDTISD, and RDTLRB are only valid for an RFTRDT.

Card code RDTICB is used for an IDT of type ICB.

RSCS line cards

The DAV line cards, NT6X87AB, NT6X87BA, NT6X88AB, and NT6X88BA, incorporate voice (POTS or EBS) and data transmission circuits on a single card. Cards NT6X87AB and NT6X88AB (four-slot) can only be assigned to lower slots (0 to 15) of even-numbered drawers and upper slots (16 to 31) of odd-numbered drawers.

The four-slot DAV card cannot be assigned to the first vertical set of drawers 0 to 1 because slot 0 of drawer 0 is reserved for special use. Cards NT6X87BA and NT6X88BA (two-slot) can be assigned to any slot, but both slots of a vertical set in a logical drawer must be free. A two-slot DAV card cannot be assigned to the first vertical set of drawer 0 because slot 0 of drawer 0 is reserved for special use.

VLCM line cards

The CSV VLCMs and Proximity-I VLCMs do not use the existing LCM line cards. Therefore, card codes VLCMCD and VLCMPR are used to differentiate a VLCM line. The CSV VLCM uses card code VLCMCD and the Proximity-I VLCM uses card code VLCMPR.

Universal edge 9000

The UE9000 uses multi–circuit line cards (MCLC). Each line circuit must be treated as a world line card. The UE9000 MCLC cannot be used in any other LCM variance.

The UE9000 is a type of LCM variance peripheral for the DMS–100. The UE9000 provides voice and dataservice as:

- plain ordinary telephone service (POTS)
- asymmetric digital subscriber loop service (ADSL)

The ADSL DMT combination line card can terminate a maximum of four two-wire loops. Each loop carries a data service component and a voice service component. The voice and data are separated at the line card by a passive splitter circuit. The separated voice and data is terminated by either a Codec or a Modem interface circuit on the line card.

Lines

The ISDN line concentrating module (LCMI) supports both POTS and MDC lines. LCMIs can support ISDN, data unit, IBERT, Meridian business set (MBS), and POTS/MDC lines.

Note: ISDN and non-ISDN lines types cannot share the same drawer.

Each physical line drawer has three logical drawers. Each logical drawer can be equipped with a maximum of 16 POTS/MDC lines or 8 ISDN lines. Therefore, each physical drawer can house 24 ISDN lines. Due to heat dissipation requirements, the number of ISDN line cards must be limited to a maximum of 20.

MPDR lines cannot be datafilled on an RCU that employs FSR, nor can FSR lines be datafilled on an RCU that employs coded ringing.

On an RCU, line subgroup 11, circuits 16 to 31 must stay unequipped.

You can datafill lines that are not two- or four-wire lines for an RCU in table LNINV if field STATUS is set to UNEQUIP. This ensures that alarms are not raised. You can also use field UNEQUIP to indicate that actual line hardware is not present in the RCU.

When you decide to add line hardware and assign a directory number, the Service Order system (SERVORD) must be used and the line must be immediately set to WORKING. You can also use the table editor and change field STATUS to hardware assigned/software unequipped (HASU).

Coin lines sharing the same slot must have the same value for field GND.

The maximum population of each shared slot may contain one of the following combinations:

- four coin, two-wire (6X12 or 6X13) lines
- four four-wire, ISDN lines
- four MBSB lines

The circuit number of LENs for coin line cards, 2WFXB LCs, and 4WSSLCs can assume the values of 0, 2, 4, and 6, as of BCS34.

Line shelves 1 and 2, and control shelf 2 are optional on an RCU. These shelves can support subscriber lines. For these lines to be datafilled in table LNINV, the associated shelf must be datafilled as equipped in table RCUINV.

LNINV (continued)

When provisioning remote fiber terminal (RFT) lines, line datafill in table LNINV are automatically added or deleted through SERVORD. If line datafill does not exist, the SERVORD transaction adds the datafill based on user input, office parameter values, and default values. If line datafill exists, the SERVORD transaction alters the data to conform to the service requested. This "auto-create" capability is an option that is enabled or disabled through parameter RDT_SO_AUTOCREATE_LNINV.

Note: The RFT is also known as the remote digital terminal (RDT).

From the time that an ILDR line is defined in table LCMDRINV, its state is set to WORKING.

Lines on generic access nodes (AN) connected to the Global Peripheral Platform (GPP)

If a channel associated (CAS) AN is datafilled in table GPPTRNSL, the GPP P-side links to that AN are allocated when a line on the AN is datafilled in table LININV. On GPPs with CAS interfaces, a dedicated P-side channel exists for each line attached to the AN. The non-concentrating channels are mapped one to one to a physical line on the AN. P-side time slot 1 is mapped to card slot 1.

The location of the PCM30 channel in CAS interfaces is identified by the following values:

- group number
- line carrier number
- channel number

For CAS non-concentrating interfaces, the line equipment number (LEN) field represents the following three subfields:

- Subfield GRP represents one of six PCM30 quad carrier cards (NTMX87) the line is assigned to.
- Subfield LINE CARRIER represents one of eight carriers on dual carrier packets (NTMX82) that are located on the NTMX87 card.
- Subfield CHANNEL represents 1 of 32 channels on a PCM30 carrier.

CAS line card codes are datafilled only on slots 1-15 and 17-31 of each PCM30 carrier. Slot 0 is reserved for maintenance, and slot 16 is reserved for ABCD signaling on each carrier. Different types of line card codes can be defined on the same carrier.

On V5.2 interfaces the number of lines datafilled in table LININV must not exceed field MAXLINES in table GPPTRNSL.

V5.2 interfaces use bearer channel control (BCC) to allocate the PCM30 carrier channels as needed. There is no direct relationship of lines to physical PCM30 channels. During BCC allocation, the LAPV5 virtual address of a line is sent to the AN on the BCC C-channel. The AN must be datafilled with the same line information as the DMS switch for correct call processing.

For V5.2 concentrating interfaces, field LEN represents the following three subfields:

- Subfield UNIT represents one of ten possible ANs connected to the GPP.
- Subfield LAYER 3 ADDRESS1 represents the link access protocol for V5.2 (LAPV5) virtual upper address (thousands and hundreds digits) assigned to the line (range is 0 to 20).
- Subfield LAYER 3 ADDRESS2 represents LAPV5 virtual lower address (tens and units) assigned to the line (range is 0 to 99).

For P-Phones on a V5 interface, provision the P-Phone DL first. Provision the P-Phone on LEN 0 as padgroup V5PPHN. An example of the input follows:

MAP example: provisioning a P-Phone on a V5 interface

```
V5_2 00 3 00 00 V5BRI PPHONE WORKING N NL Y NIL
V5_2 00 3 00 01 V5PPHONE NPDGP WORKING N NL Y NIL
```

POTS lines on a AN are datafilled from 0 to a maximum of 2047. Table control insures that adding a V5.2 line in table LNINV does not exceed the value in field MAXLINES in table GPPTRNSL. Table control checks when adding a CAS line to insure the number of lines on the GPP does not exceed 6400.

Error messages

ISDN lines on an LCMI and an LCME connect to PRCCs equipped with an ISDN signaling preprocessor (ISP). Only the LEN is used to determine the location of the line card. Using the LEN, table control determines the extended multiprocessor system (XMS)-based PM (XPM) onto which the LCM is attached.

If the following reply appears when a new TDM connection is either added or deleted, this is due to the tuple change on a line of an LCME or LCMI under reconfiguration:

```
NO CHANGE TO TDM CONNECTION IS ALLOWED DURING RECONFIGURATION
OF LCME/LCMI #
```

LNINV (continued)

The tuple change must be attempted again when the reconfiguration is finished.

If an attempt is made to delete a LEN that is assigned as a DRTU call back path, the following error message is displayed:

```
THIS LEN HAS BEEN ASSIGNED AS THE DRTU CALL BACK LEN
```

If the LEN of the tuple is an RDT LEN and the card code is not RDTCON, RDTLS, RDTLSG, RDTISD, or RDTEBS, the following error message is displayed:

```
LINE CARD SPECIFIED NOT VALID FOR AN IDT
```

If the card code is RDTCON, RDTLS, RDTLSG, RDTISD, or RDTEBS and the LEN is not an RDT LEN, the following error message is displayed:

```
LINE CARD SPECIFIED NOT VALID FOR AN <peripheral name>
```

If the card code is RDTEBS and the RDT is not NT proprietary, the following error message is displayed:

```
INVALID CARD CODE CARD CODE MUST BE {RDTCON, RDTLS, RDTLSG,
RDTISD}.
```

The LEN help prompt is displayed for the following errors:

- `The value entered for field SHELF is smaller than 2.`
- `The value entered for field SHELF is larger than the range set in table RDTINV.`
- `The value entered for field SLOT is smaller than 1.`
- `The value for entered for field SLOT is larger than the range set in table RDTINV.`

If an attempt is made to assign a LEN in table LENLINES that is already assigned to card type of SSLCC and a field FCN value of TN, the following error message is displayed:

Note: This is not true for 3A12AB cards.

```
SPECIAL SERVICES UNITS CANNOT BE DATAFILLED IN LENLINES
```

If the card code is other than 7A20AA, 7A21AA, 7A22AA, 7A23AA, 3A12AB, 3A13AB, or 3A13AC and the card type is SSLCC, the following error message is displayed:

```
THE CARDCODE CANNOT HAVE A CARDTYPE OF SSLCC
```

If the card code does not support the indicated field FCN value, the following error message is displayed:

```
THE CARDCODE CANNOT HAVE THE SPECIFIED FCN
```

If the card code is 7A23AA and entry in field FCN is not SM, the following error message is displayed:

```
THE CARDCODE CAN ONLY HAVE A FCN OF SM
```

If the entry in field FCN is EM, PLR, or TANDEM and the LEN is on an odd numbered circuit, the following error message is displayed:

```
THE LEN MUST BE ON AN EVEN CIRCUIT FOR THIS CARDCODE
```

If the entry in field FCN is EM, PLR, or TANDEM and the LEN-1 does not have a entry in field FCN equal to SM, the following error message is displayed:

```
THE NEXT LEN MUST HAVE A FCN OF SM
```

If the card code is 7A22AA and the LEN is on an even circuit, the following error message is displayed:

```
THE LEN MUST BE ON AN ODD CIRCUIT FOR THIS CARDCODE
```

If the entry in field FCN is SM and the preceding entry is still EM, PLR, or TANDEM, the following error message is displayed:

```
THE PRECEDING EM, PLR, OR TANDEM CARD MUST BE DELETED FIRST OR
PROVISIONED AS OUT OF SERVICE (INSVC = N)
```

If the card code is 7A23AA and the entry in field FCN is not OCUDP, the following error message is displayed:

```
THE CARDCODE CAN ONLY HAVE A FCN OF OCUDP
```

If the card code is 3A12AB and the entry for field FCN is not 2WFXS, the following error message is displayed:

```
THE CARDCODE CAN ONLY HAVE A FCN OF FXS
```

LNINV (continued)

If the card code is 3A13AB or 3A13AC and the entry for field FCN is not 2WFXO, the following error message is displayed:

```
THE CARDCODE CAN ONLY HAVE A FCN OF FXO
```

If an attempt is made to change field FCN through a change (CHA) command, the following error message is displayed:

```
THE FCN CANNOT BE CHANGED
```

If the card code is 7A20AA, 7A21AA, 7A22AA, or 7A23AA and card type is not SSLCC, the following error message is displayed:

```
THE CARDCODE MUST HAVE A CARDTYPE OF SSLCC
```

If the card code is not 7A20AA, 7A21AA, 7A22AA, 7A23AA, 3A12AB, 3A13AB, or 3A13AC and the card type is ISLCC, the following error message is displayed:

```
THE CARDCODE CANNOT HAVE A CARDTYPE OF ISLCC
```

If the card code is 7A20AA, 7A21AA, 7A22AA, or 7A23AA and the card type is not SSLCC or ISLCC, the following error message is displayed:

```
THE CARDCODE MUST HAVE A CARDTYPE OF SSLCC OR ISLCC
```

If the card code is 7A33AA or 7A31AA and the SMU does not have an ISP provisioned in table LTCINV, the following error message is displayed:

```
THE CARDCODE REQUIRES AN ISP ON THE SMU
```

If the card code is 7A31AA or 7A33AA and the card type is not NIL, the following error message is displayed:

```
THE CARDCODE MUST HAVE A CARDTYPE OF NIL
```

The ISDN and RCU MBS card codes cannot be changed. An attempt to do this results in the following error message:

```
RCU 7A31AA OR 7A33AA CARDCODES CANNOT BE CHANGED
```

With a card code entry value of 3A12AB, 3A13AB, or 3A13AC, the card type cannot be changed from SSLCC or ISLCC to NIL. Any attempt to do this results in the following error message:

```
THE CARDTYPE CANNOT BE CHANGED FROM SSLCC OR ISLCC TO NIL
```

An MBS line cannot be changed to HASU from WORKING unless the line state is LMB or INB. An attempt to do so results in the following error message:

```
LINE CANNOT BE CHANGED TO HASU IF THE LINE IS NOT INB OR LMB
```

An MBS line cannot be deleted from WORKING unless the line state is LMB or INB. An attempt to do so results in the following error message:

```
LINE CANNOT BE DELETED IF THE LINE IS NOT INB OR LMB
```

The card type cannot be changed from ISLCC to any other card type. An attempt to do this results in the following error message:

```
CANNOT CHANGE CARDTYPE
```

If an ISDN or MBS line is datafilled, then only an ISDN, MBS, or SM (7A22AA) card can be provisioned in the last card position in the same ISLCC. An attempt to do otherwise results in the following error message:

```
ONLY ISDN/MBS/SM/E2W LINE CARDS CAN BE IN THE LAST CARD
POSITION AND THE LAST CIRCUIT IN THE LINE CARD CARRIER
CANNOT BE ASSIGNED IF AN ISDN OR MBS LINE IS PROVISIONED ON
THE LINE CARD CARRIER
```

If an ISDN or MBS line is datafilled on an ISLCC, where a two-wire or four-wire card (other than 7A22AA) is provisioned in the last card position in the same ISLCC, the following error message is displayed:

```
ISDN OR MBS CANNOT BE ADDED IF THE LAST CARD POSITION
OF THE LINE CARD CARRIER HAS A NON-SM/E2W SPECIAL
SERVICES CARD PROVISIONED OR LAST CIRCUIT IN THE LINE
CARD CARRIER IS ASSIGNED
```

The card type check error message is:

```
CARDCODE/CARDTYPE IS NOT COMPATIBLE WITH CARDCODE/CARDTYPE OF
EXISTING LINES IN LINE CARD CARRIER
```

The LEN check error message is:

```
ISDN, MBS, FX, SS, OR COIN LINES MUST BE EVEN LENs
```

The GND check error message is:

```
GND IS NOT SUPPORTED BY THIS CARDCODE/FUNC
```

LNINV (continued)

If the entry in field CARDCODE is one of 7A25AA, 7A26AA, or 7A27AA, then field CARDTYPE must be datafilled as either SSLCC or ISLCC. Otherwise, the following error message is displayed:

```
THE CARDCODE CANNOT HAVE THE SPECIFIED FCN
```

If the odd and even number of the circuit is not contained within the same card code, the following error message is displayed:

```
EVEN AND ODD LEN MUST HAVE THE SAME CARDCODE
```

If the entry in field CARDCODE is one of 7A20AA or 7A21AA, the value for field FCN is either EM, PLR, or TANDEM, and the card is not placed as the first or third card in the carrier, then the following error message is displayed:

```
THE LEN MUST BE THE 1ST OR 3RD CARD IN THE CARRIER
```

The error message below will be displayed if the following three conditions are met:

- the entry in field CARDCODE is 7A22AA
- the entry in field FCN is SM
- the card is not the second or fourth card in the carrier

```
THE LEN MUST BE THE 2ND OR 4TH CARD IN THE CARRIER
```

If an attempt is made to change field GND to Y when the entry in field CARDCODE is 7A25AA and the COD is datafilled for the line, the following error message is displayed:

```
MUST REMOVE COD OPTION FROM THIS LINE BEFORE CHANGING GND FIELD
TO Y
```

If a new TDM connection is required to be added or deleted due to a tuple change on a line of an RCU under reconfiguration, the following error message is displayed:

```
NO CHANGE TO TDM CONNECTION IS ALLOWED DURING RECONFIGURATION
OF RCU.
```

If an attempt is made to datafill a LEN with an invalid line card code on an LCMI, the following error message is displayed:

```
LINE CARD SPECIFIED NOT VALID FOR AN LCMI THE LCMI ONLY SUPPORTS
BX04AA LINE CARD
```

If the Talk Battery Alarm feature is enabled, the following warning message is displayed prior to the regular confirmation prompt when one of the following occurs:

- the last available WLC on an LCM shelf is deleted from table LNINV using the DEL command
- the last available WLC is changed to a non-WLC pack code using the CHA command

```
Deleting the last available WLC from the LCM shelf.  Loss of
Talk Battery cannot be detected on the LCM shelf.  A minor
alarm and ISTb reason will be raised for the LCM shelf
```

In the above warning message, `available WLC` refers to a WLC in either the HASU or InSv state that can be used to perform the talk battery audit/test.

If the Talk Battery Alarm feature is enabled and one of the following conditions applies, the following notification message is displayed:

- the first available WLC is added to an LCM shelf using the ADD command
- the first available WLC is created by changing an existing non-WLC to a WLC pack code using the CHA command

```
Adding the first available WLC to the LCM shelf.
Loss of Talk Battery can now be detected on the LCM shelf.
The minor alarm and ISTb reason will be cleared for the LCM
shelf.
```

When attempting to add or change a line to an ILDR with cardcode other than BX27, the following error message is displayed:

```
Line card specified not valid for an ILDR.
```

When attempting to add a line to an ILDR with the card number not within the range of 0 through 13, the following error message is displayed:

```
Line card number must be 0 - 13 for an ILDR.
```

When attempting to define an ILDR line with status other than WORKING, the following warning message is displayed:

```
*WARNING* line status changed to WORKING.
```

LNINV (continued)

When attempting to provision an ISDN LEN on an remote ISDN line drawer, the following error message is displayed:

```
Error: <LEN> is not supported by C-side host of UREM. Can
       no longer datafill RLD ISDN LENs on LTC/LGC with MX77
       processor. Must first upgrade to SX05 processor, or move
       LEN(s) to a supported peripheral.
```

If more than eight templates are assigned to an LCM, the following error message is displayed:

```
Can not assign more than 8 templates per LCM.
Current supported templates are:  WL93AA, WL93BA,
WL93CA, WL93DA, WL93EA, WL98AA, WL33AA, and WL17AC.
```

If you attempt to delete an RSDT IN_EFFECT or UNDEFINED line, the deletion is blocked and the following error message is displayed:

```
LEN: HOST 02 01 03 06 MUST BE DELETED FROM RSDTLINE FIRST
```

Miscellaneous

Use of table LNINV must be restricted for some UK telephone companies, because it details the pad group that each line belongs to.

Table history

MMP15

Added card codes WLITAN and WLITBN to field CARDCODE, and added template details for feature Italian WLC Modifications. Also updated and added numerous template details.

Added card code CXIPCD entry to field CARDCODE for feature DMS Datafill for Centrex-IP Peripheral and Centrex-IP Lines.

NA015

For RLD lines associated with the Star Remote, added the possibility to datafill a RLD line using the RLD site, frame number and unit number in the LEN.

With general availability initially scheduled for the NA015-based software release, this feature is planned for patch-back into NA011, NA012, NA013 and NA014-based software releases.

NA014

Added cardcode NP50AA for the UE9000. Updated datafill example to include NP50AA in UE9000.

MMP14

Added templates WLEGAX and WLEGBX to field CARDCODE for Egyptian world line cards.

MMP13

Added templates WLPTAX and WLPTBX to field CARDCODE for Portugal world line cards.

Added cardcode V5PPHN. Added description and example of provisioning a P-Phone on a V5 line.

MMP12

Added templates WLIRAX and WLIRBX to field CARDCODE for Irish WLC templates.

NA012

Added information for integrated channel banks with more than one DS-1 link for 59008509.

Added precaution and error message about ISDN line drawers off NTMX77-based LTCs for 50123558.

Added cardcodes KX05AA, KX05AA, NP43AA, NP44AA, NP45AA, and NP46AA for the UE9000. Added datafill example for UE9000.

EUR010

Added WLNOAX (Norwegian WLC template) for AU3379.

NA010

Error message added for RSDT.

EUR009

Added WLCHAX (Swiss WLC template) for AJ5150.

Added WLAUAX and WLAUBX (Austrian WLC templates) for AJ5210.

APC009

Added the VLCMPR and VLCMCD cardcodes.

Added restrictions to datafill for cardcodes VLCMPR and VLCMCD.

LNINV (continued)

EUR008

Added the following templates to field CARDCODE for Belgium, Netherlands, and Italian WLC:

- WLBEAL
- WLBEAS
- WLBEBL
- WLBEBS
- WLITAX
- WLITBX
- WLNLAL
- WLNLAS
- WLNLBL
- WLNLBS

NA008

Removed information in the “Additional datafill information” section that directed operating company personnel to not set the STATUS field to WORKING for ISDN lines served from an RDT with card code of RDTISD. The RDT ISDN line must be set to WORKING to operate properly.

Added information to support the integrated channel bank in fields LEN, CARDCODE, and CARDINFO.

Added cardcode for 1-Meg Modem Service line cards NTEX17CA and NTEX17DA.

NA007

Added cardcode for the 1-Meg Modem Service on LCM line cards EX17AA and EX17BA.

Added datafill sequence information for table LCMDRINV.

Added new restrictions as a result of the introduction of the ILDR.

EUR006

Added cardcode entries MUX15C and V5BRI.

APC07

Added cardcode WL94AB.

APC06

Added restrictions to datafill when field MEMSIZE in table LCMINV has a value of 4M 4M and example datafill, for Japan only. The only acceptable cardcodes supported are 6X21AA, AB, AC, AD, and BC; all other cardcodes are rejected with appropriate error messages.

APC05.1

Added the following line card types which are only valid for lines connected to generic access nodes (AN) attached to the Global Peripheral Platform (GPP):

- T1ERTH
- T1LOOP
- V5LOOP

NA005

Added cardcode 6X93AA.

The following changes were made for feature AD7656. These changes apply to MSL100 software loads only:

- Added a description of a new line-side interface card for the IPE under "Supplementary information." Reorganized table LNINV.
- Added the following PECs as options in field CARDCODE:
  - 8D02CC
  - 8D02EA
  - 5D11AA

NA004

Added error message information in accordance with feature AF5912, Talk Battery Alarm.

UK002

The following changes were made:

- Added cardcodes DC5A, DC5ADD, and WL98AA.
- Added error message `Can not assign more than 8 templates per LCM. Currently supported templates are: WL93AA, WL93BA, WL93CA, WL93DA, WL93EA, WL98AA, and WL17AC`.

LNINV (continued)

NA002

The following changes were made:

- Added a datafill explanation for the BX04AA entry in field CARDCODE.
- Added WLC templates WL01AX, WL01BX, WL1740, and WL9A40 to field CARDCODE.
- Added Type B's WLC support of metering, which explains why it does not require the NT6X95 Metering Tone Generator card.
- Added LCMI-related card code (BX04AA) datafill information for field CARDCODE. Added LCMI-related card code restriction for existing LNINV tuples.
- Added error code message `LCMI supports only BX0rAA line card.`
- Added a note to the “Lines” section describing how to use SERVORD to add or delete datafill in table LNINV when provisioning remote fiber terminal (RFT) lines.
- Deleted values WL17AC and WL18AA from field CARDCODE. These values are replaced by values 6X17BA and 6X18BA, respectively. This change was made in accordance with PRS BX26823.

BCS36

The following changes were made:

- Revised reference to SPOTS cards to specify that the DMS switch allows these cards to have split service.
- Added error code message (for changes to TDM connections during RCU configuration).
- Added the following WLC template names to field CARDCODE:
  - WL33AA
  - WLBRAN
  - WLBRAL
  - WLBRAC
  - WLBRBN
  - WLBRBL
  - WLBRBC
  - WLPEAX
  - WLPEBX
  - WLPOAX
  - WLPOBX

LNINVEXT

Table name

Line Inventory Extension Table

Functional description

Table LNINVEXT is datafilled when special service line cards 3A12AB, 3A13AB, 3A13AC, 7A20AA, 7A21AA, 7A22AA, 7A23AA, 7A25AA, 7A26AA, and 7A27AA have been datafilled for a remote carrier urban (RCU) line in table LNINV. If field CARDTYPE in table LNINV is datafilled with ISLCC or SSLCC, subfields FCN and INSVC can be datafilled. For 6X12 and 6X13 cards with a CARDTYPE of NIL, field FCN is set to FXS or FXO. The value of field FCN determines the data values that are placed in table LNINVEXT.

Tuples in table LNINVEXT can be modified, but not added or deleted. The default values are determined by the value input for subfield FCN in table LNINV.

To change the values in table LNINVEXT, position on the line equipment number (LEN). The LEN is the key for the table. The values that are placed in table LNINVEXT after the FCN subfield of table LNINV is datafilled can be modified in table LNINVEXT (as long as these values are valid).

Note: Fields LEN and FCN cannot be changed.

For more information on table LNINVEXT, refer to *Translations Guide*.

Datafill sequence and implications

Table LNINV must be datafilled before table LNINVEXT.

Table size

0 to 16 363 tuples

Datafill

The following table lists datafill for table LNINVEXT.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LEN		see subfields	*Line equipment number* This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN" for a complete description of field LEN and associated subfields. Field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT. LEN subfield entry values for line types other than RCU are not valid.
FUNC		see subfield	*Function* This field consists of subfield FCN and refinements.
	FCN	DPO, DPT, DX, EM, ETO, FXO, FXS, OCU, PLR, SM, TANDEM, or TO	*Function* This subfield cannot be changed and is dependent upon the value datafilled for field FCN in table LNINV. It is used to determine which refinements can be datafilled. The correlation between the card codes and the functions that are supported by these cards is shown below. Refer to table LNINV for additional information. DPO - 7A25AA DPT - 7A26AA, 7A27AA DX - 7A21AA EM - 7A20AA, 7A21AA ETO - 7A20AA, 7A21AA FXS - 3A12AB, 7A20AA, 7A25AA FXO - 3A13AB, 3A13AC, 7A20AA, 7A26AA, 7A27AA OCU - 7A23AA PLR - 7A20AA, 7A21AA SM - 7A22AA

LNINVEXT (continued)

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	FCN (continued)		TANDEM - 7A20AA, 7A21AA TO - 7A20AA, 7A21AA, 7A25AA 7A26AA, 7A27AA

FCN = DPO

If the entry in field FCN is DPO, datafill the following refinements.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 120	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 12.0 dB. The default value is 50, which corresponds to 5.0 dB.
	RCV	0 to 100	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 10.0 dB. The default value is 0, which corresponds to 0.0 dB.
	IMP	600 or 900	*Impedance* Enter the required impedance in ohms. The default value is 600.
	CODEC	DYN or PERM	*CODEC power control status* Enter DYN if the power control status is dynamic. Enter PERM if the power control status is permanent.
	HYBRD	0 to 3	*Hybrid balance value* Enter the hybrid balance value required.

FCN = DPT

If the entry is field FCN is DPT, datafill the following refinements.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 120	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 12.0 dB. The default value is 50, which corresponds to 5.0 dB.
	RCV	0 to 100	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. The attenation range is 0.0 to 10.0 dB. The default value is 0, which corresponds to 0.0 dB.
	IMP	600 or 900	*Impedance* Enter the required impedance in ohms. The default is value 600.
	CODEC	DYN or PERM	*CODEC power control status* Enter DYN if the power control status is dynamic. Enter PERM if the power control status is permanent.
	HYBRD	0 to 3	*Hybrid balance value* Enter the hybrid balance value required.

LNINVEXT (continued)

FCN = DX

If the entry in field FCN is DX, datafill the following refinements.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 319	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 31.9 dB. The default value is 180, which corresponds to 18.0 dB.
	RCV	0 to 319	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 31.9 dB. The default value is 90, which corresponds to 9.0 dB.
	IMP	150, 600, or 1200	*Impedance* Enter the required impedance in ohms. The default value is 600.
	PREE	Y or N	*Pre-equalization* Enter Y if pre-equalization is required. The default value is N.
	SL	0 to 15	*Slope equalization* Enter the slope equalization required. The default value is 0 (zero).
	HT	0 to 15	*Height equalization* Enter the degree of height equalization required. The default value is 0.
	BW	0 to 15	*Equalization bandwidth* Enter the degree of equalization bandwidth required.

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
			The default value is 0.
	LOADTYP	N or L	*Cable load type* Enter the cable load type required (N for non-loaded, L for loaded). The default value is N.
	RBAL	0, 162, 364, 486, 649, 811, 973, 1135, 1300, 1462, 1624, 1949, 2111, 2273, or 2435	*DX resistor value* Enter the required DX resistance in ohms. The default value is 0.
	BATTERY	NOR or REV	*Battery* Enter the type of battery required: NOR (normal) or REV (reverse). The default value is NOR.

FCN = ETO

If the entry for field FCN is ETO, datafill the following refinements.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 319	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 31.9 dB. The default value is 180, which corresponds to 18.0 dB.
	RCV	0 to 319	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 31.9 dB.

LNINVEXT (continued)

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
			The default value is 90, which corresponds to 9.0 dB.
	IMP	150, 600, or 1200	*Impedance* Enter the required impedance in ohms. The default value is 600.
	PREE	Y or N	*Pre-equalization* Enter Y if pre-equalization is required. The default value is N.
	SL	0 to 15	*Slope equalization* Enter the slope equalization required. The default value is 0 (zero).
	HT	0 to 15	*Height equalization* Enter the degree of height equalization required. The default value is 0.
	BW	0 to 15	*Equalization bandwidth* Enter the degree of equalization bandwidth required. The default value is 0.
	SC	OFF, NOR, REV, or SINK	*Sealing current* Enter the type of sealing current required (OFF for none, NOR for source normal, REV for source reverse, and SINK for sink). The default value is OFF.
	LOADTYP	N or L	*Cable load type* Enter the required cable load type (N for non-loaded, L for loaded). The default value is N.

FCN = FXO and CARDCODE = 7A20AA, 7A26AA, or 7A27AA

If the entry in field FCN is FXO, and the entry in field CARDCODE of table LNINV is 7A20AA, 7A26AA, or 7A27AA, datafill the following refinements.

Field descriptions for conditional datafill (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 120 (two-wire cards) 0 to 319 (four-wire cards)	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. For four-wire cards (7A20AA), the attenuation range is 0.0 to 31.9 dB. For two-wire cards, the attenuation range is 0.0 to 12.0 dB. The default value is 50, which corresponds to 5.0 dB.
	RCV	0 to 100 (two-wire cards) 0 to 319 (two-wire cards)	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. For four-wire cards (7A20AA), the attenuation range is 0.0 to 31.9 dB. For two-wire cards, the attenuation range is 0.0 to 10.0 dB. The default value is 0, which corresponds to 0 dB.
	IMP	150, 600, 900, or 1200	*Impedance* Enter the required impedance in ohms. The only valid entry values for a CARDCODE of 7A26AA and 7A27AA are 600 and 900. The only valid entry values for a CARDCODE of 7A20AA are 150, 600, or 1200. The default value is 600.
	PREE	Y or N	*Pre-equalization* Enter Y if pre-equalization is required. For a CARDCODE of 7A26AA or 7A27AA, the only valid entry value is N. The default value is N.
	SL	0 to 15	*Slope equalization* Enter the slope equalization required. For a CARDCODE of 7A26AA or 7A27AA, the only valid entry value is 0 (zero).

LNINVEXT (continued)

Field descriptions for conditional datafill (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
			The default value is 0.
	HT	0 to 15	*Height equalization* Enter the degree of height equalization required. For a CARDCODE of 7A26AA or 7A27AA, the only valid entry value is 0. The default value is 0.
	BW	0 to 15	*Equalization bandwidth* Enter the degree of equalization bandwidth required. For a CARDCODE of 7A26AA or 7A27AA, the only valid entry value is 0. The default value is 0.
	LOADTYP	N or L	*Cable load type* Enter the required cable load type (N for non-loaded, L for loaded). For a CARDCODE of 7A26AA or 7A27AA, the only valid entry value is N. The default value is N.
	BATTERY	NOR or REV	*Battery* Enter the type of battery required, normal or reverse. For a CARDCODE of 7A26AA or 7A27AA, the only valid entry value is NOR. The default value is NOR.
	REVBAT	ON or OFF	*Battery reverse signaling* Enter ON if reverse battery signaling is required. Otherwise, enter OFF. For a CARDCODE of 7A26AA or 7A27AA, the only valid entry value is OFF.
	CODEC	DYN or PERM	*CODEC power control status* Enter DYN if the power control status is dynamic. Enter PERM if the power control status is permanent. For a CARDCODE of 7A20AA, the only valid entry value is DYN.

Field descriptions for conditional datafill (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	HYBRD	0 to 3	*Hybrid balance value* Enter the hybrid balance value required. For a CARDCODE of 7A20AA, the only valid entry value is 0.

FCN = FXS and CARDCODE = 7A20AA or 7A25AA

If the entry in field FCN is FXS, and the entry in field CARDCODE of table LNINV is 7A20AA or 7A25AA, datafill the following refinements.

Field descriptions for conditional datafill (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 120 (two-wire cards) 0 to 319 (four-wire cards)	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. For four-wire cards (7A20AA), the attenuation range is 0.0 to 31.9 dB. For two-wire cards (7A25AA), the attenuation range is 0.0 to 12.0 dB. The default value is 50, which corresponds to 5.0 dB.
	RCV	0 to 100 (two-wire cards) 0 to 319 (four-wire cards)	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. For four-wire cards (7A20AA), the attenuation range is 0.0 to 31.9 dB. For two-wire cards (7A25AA), the attenuation range is 0.0 to 10.0 dB. The default value is 0, which corresponds to 0.0 dB.
	IMP	150, 600, 900, or 1200	*Impedance* Enter the required impedance in ohms. The only valid entry values for a CARDCODE of 7A25AA are 600 and 900. The only valid entry values for a CARDCODE of 7A20AA are 150, 600, or 1200. The default value is 600.

LNINVEXT (continued)

Field descriptions for conditional datafill (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	PREE	Y or N	*Pre-equalization* Enter Y if pre-equalization is required. For a CARDCODE of 7A25AA, the only valid entry value is N. The default value is N.
	SL	0 to 15	*Slope equalization* Enter the slope equalization required. For a CARDCODE of 7A25AA, the only valid entry value is 0 (zero). The default value is 0.
	HT	0 to 15	*Height equalization* Enter the degree of height equalization required. For a CARDCODE of 7A25AA, the only valid entry value is 0. The default value is 0.
	BW	0 to 15	*Equalization bandwidth* Enter the degree of equalization bandwidth required. For a CARDCODE of 7A25AA, the only valid entry value is 0. The default value is 0.
	LOADTYP	N or L	*Cable load type* Enter the required cable load type (N for non-loaded, L for loaded). For a CARDCODE of 7A25AA, the only valid entry value is N. The default value is N.
	BATTERY	NOR or REV	*Battery* Enter the type of battery required, normal or reverse. For a CARDCODE of 7A25AA, the only valid entry value is NOR. The default value is NOR.

Field descriptions for conditional datafill (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	REVBAT	ON or OFF	*Battery reverse signaling* Enter ON if reverse battery signaling is required. Otherwise, enter OFF. For a CARDCODE of 7A25AA, the only valid entry value is OFF.
	CODEC	DYN or PERM	*CODEC power control status* Enter DYN if the power control status is dynamic. Enter PERM if the power control status is permanent. For a CARDCODE of 7A20AA, the only valid entry value is DYN.
	HYBRD	0 to 3	*Hybrid balance value* Enter the hybrid balance value required. For a CARDCODE of 7A20AA, the only valid entry value is 0.

FCN = TANDEM, PLR, or EM

If the entry in field FCN is TANDEM, PLR, or EM, datafill the following refinements.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 319	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 31.9 dB. The default value is 180, which corresponds to 18.0 dB.
	RCV	0 to 319	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. The attenuation range is 0.0 to 31.9 dB. The default value is 90, which corresponds to 9.0 dB.

LNINVEXT (continued)

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	IMP	150, 600, or 1200	*Impedance* Enter the required impedance in ohms. The default value is 600.
	SIG	EM1, EM2, PLR1, PLR2, T60, T80, T6S, T8S, T62, or T82	*Signaling configuration* Enter the type of signaling required: • For FCN = EM: • EM2 (E&M Type II) • For FCN = PLR: • PLR1 (PLR Type I) (see note) • PLR2 (PLR Type II) • For FCN = TANDEM: • T6O (six-wire tandem office) (see note) • T8O (eight-wire tandem office) • T6S (six-wire tandem station) • T8S (eight-wire tandem station) • T62 (six-wire tandem two-state) • T82 (eight-wire tandem two-state) ***Note:*** This is the default value.

FCN = TO

If the entry in field FCN is TO, datafill the following refinements.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	TRMT	0 to 120 (two-wirecards) 0 to 319 (four-wire cards)	*Transmission attenuation* Enter the required transmission attenuation in multiples of tenths of a decibel. For four-wire cards, the attenuation range is 0.0 to 31.9 dB. For two-wire cards, the attenuation range is 0.0 to 12.0 dB. The default value is 50, which corresponds to 5.0 dB.
	RCV	0 to 100 (two-wirecards) 0 to 319 (four-wire cards)	*Receive attenuation* Enter the required receive attenuation in multiples of tenths of a decibel. For four-wire cards, the attenuation range is 0.0 to 31.9 dB. For two-wire cards, the attenuation range is 0.0 to 10.0 dB. The default value is 0, which corresponds to 0.0 dB.
	SC	OFF, NOR, REV, or SINK	*Sealing current* Enter the type of sealing current required (OFF for none, NOR for source normal, REV for source reverse, and SINK for sink). For a CARDCODE of 7A25AA, 7A26AA, or 7A27AA, the only valid entry value is OFF. The default value is OFF.
	IMP	600 or 900	*Impedance* Enter the required impedance in ohms. The default value is 600.
	HYBRD	0 to 3	*Hybrid balance value* Enter the hybrid balance value required. For a CARDCODE of 7A20AA or 7A21AA, the only valid entry value is 0 (zero).

LNINVEXT (end)

FCN = OCU

If the entry in field FCN is OCU, datafill the following refinements.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	RATE	2400, 4800, 9600, 19200, or 56000	*Data rate* Enter the data rate required (in bits per second). The default value is 56000.
	SCC	Y or N	*Secondary channel* Enter Y if a secondary channel is required. Enter N if no secondary channel is required. The default value is N.
	ZCS	Y or N	*Zero code suppression* Enter Y if zero-code suppression is required. Enter N if zero-code suppression is not required. If RATE is 56000, ZCS must be set to Y. The default value is N.
	ERRCTL	Y or N	*Error control* Enter Y if error control is required. Enter N if error control is not required. If RATE is 56000, ERRCTL must be set to N. The default value is N.

Datafill example

The following example shows sample datafill for table LNINVEXT.

MAP display example for table LNINVEXT

```
               LEN                                              FUNC
____________________________________________________________________
HOST  00 0 00 00              ETO 180   0  600 Y  4  5  5  NOR L
```

LNMPEOC

Table name

Line Multipoint Embedded Operations Channel Table

Functional description

Table LNMPEOC facilitates the storing of 2B1Q lines that have multipoint EOC line units. This table is datafilled automatically by unsolicited messages from the extended line concentrating module (LCME) and is read only.

Datafill sequence and implications

For normal table operations, table LNMPEOC is read only. During dump and restore, this table must be dumped after table LNINV.

Table size

1000 to 10000 tuples

Datafill

The following table lists datafill for table LNMPEOC.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LEN		see subfields	*Line equipment number* This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN" for a complete description of field LEN and associated subfields. Field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.
MPEOCLU		0 to 6	*Multipoint embedded operations channel line units* Enter the number of multipoint EOC line units on the loop.

LNMPEOC (end)

Datafill example

The following example shows sample datafill for table LNMPEOC.

MAP display example for table LNMPEOC

```
                LEN MPEOCLU
_____________________________________________________________________
HOST  67 0 08 14        4
```

Table history

BCS36

The following changes were made:

- a new table size range of 1000 to 10000 tuples
- text indicates this is now a read only table

BCS35

Table LNMPEOC was introduced.

LNPCODE

Table name

Local Number Portability Code Table

Functional description

Table LNPCODE enables the operating company to specify special routing to a virtual facility group (VFG) for directory numbers that port into a switch.

Datafill for table LNPCODE applies only to incoming LNP calls to ported-in DNs. This feature enables special routing such as to a VFG or a trunk loop-around. Each tuple in the table corresponds to a range of digits. For directory numbers (DN) in each range, specify one of the following:

- treatment to apply when an LNP call to a ported-in DN arrives on the switch
- routing table to use when an LNP call to a ported-in DN arrives on the switch

Datafill sequence and implications

When using the T selector in table RTESEL, datafill the corresponding routing table, for example, to specify routing through table

- OFRT, datafill table OFRT
- IBNRTE, datafill table IBNRTE

Table size

The system dynamically allocates table size according to datafill.

LNPCODE (continued)

Datafill

The following table lists datafill for table LNPCODE. The key consists of the serving translation scheme (STS) and the terminating digits.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
STS		3 digits	Serving translation scheme. This field corresponds to the current STS of the call.
FROMDIGS		1 to 10 digits	From digits. Datafill the start of the range of the terminating NPANXXXXXX that uses the routing information in this table. ***Note:*** Datafill field FROMDIGS using the format (N, NP, NPA, NPAX, NPAXX ... NPANXXXXXX).
TODIGS		1 to 10 digits	To digits. Datafill the end of the range of the terminating NPANXXXXXX that uses the routing information in this table. ***Note:*** Datafill field TODIGS using the format (N, NP, NPA, NPAX, NPAXX ... NPANXXXXXX).
RTE		see subfields	Route. This field contains routing information for the LNP translation and consists of subfields RTESEL, EXTRTEID, TABID, KEY, and RTETRMT.
	RTESEL	T or TRMT	Route selector. This field gives the ported-in routing information for the calls made to the DNs that fall in the range of the FROMDIGS to TODIGS field. The datafill in the STS field matches the STS of the originating call. Datafill this field with either a T selector or TRMT selector. Enter T to datafill routing information. Enter TRMT to datafill a call treatment.
	EXTRTEID		External route identification. This field contains routing information for LNP translations. Fields EXTRTEID contains subfields TABID and KEY.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	TABID	OFRT OFR2 OFR3 OFR4 IBNRTE IBNRT2 IBNRT3 IBNRT4 RRTETTL4	Table identification. Datafill the name of the routing table.
	KEY	1 to 1023	Key. Datafill the key for the routing table.
	RTETRMT	4 characters	Route treatment. Enter a treatment name from the office treatment subtable, TMTCNTL.TREAT.

Datafill example

The following example shows sample datafill for table LNPCODE.

MAP display example for table LNPCODE

```
STS     FROMDIGS     TODIGS     RTE
_____________________________________________________

416     514663       514663      T  IBNRTE   5
416     5142265432   5142265432 TRMT ANCT
```

Tuple 1 applies to calls with an STS of 416 that terminate to a ported-in DN with digits in the range 514 663 0000 to 514 663 9999. This tuple routes calls through table IBNRTE with ID 5

Tuple 2 applies to calls with an STS of 416 that terminate to the ported-in DN 514 226 5432. This tuple applies treatment ANCT.

Table history

NA009

Feature AU2546 introduces table LNPCODE for local number portability (LNP).

LNPCODE (end)

Supplementary information

None

LNPOPTS

Table name

Local Number Portability Options

Functional description

Table LNPOPTS implements the options that the operating company applies to Local Number Portability (LNP).

Datafill sequence and implications

There is no requirement to datafill other tables before table LNPOPTS.

There are eight options in table LNPOPTS as follows:

1. ACG_10D_TRMT
2. BLOCKLNP
3. FLRN_CALLTYPE
4. LNP_305_LOG
5. LNPTCT
6. NP_MAX_CONTAM
7. NPRESERV_CI
8. QPARMS

Note: Operating companies cannot change LNPOPTS tuples with SOC option LNP00200 in the IDLE state. Refer to *Location Routing Number-Local Number Portability Service Implementation Guide*, 297-8981-021.

Table size

Eight tuples

LNPOPTS (continued)

Datafill

The following table lists datafill for LNPOPTS ‘Key’Table.

Field descriptions

Field	Subfield	Entry	Explanation and action
Key		see subfields	Key -This field consists of subfields (OPTIONS) ACG_10D_TRMT, BLOCKLNP, FLRN_CALLTYPE, LNP_305_LOG, LNPTCT, NP_MAX_CONTAM, NPRESERV_CI, QPARMS.
	OPTIONS	ACG_10D_TRMT	This subfield specifies the treatment for LNP calls encountering 10-digit Automatic Call Gapping (10D ACG). The default treatment is AIN Final (AINF).
		BLOCKLNP	This subfield in conjunction with the BLOCKLNP option in table TRKOPTS blocks calls when the previous switch did not perform a necessary LNP query.
		FLRN_CALLTYPE	This subfield allows all FLRN translations to be marked as no prefix local for the purposes of post-LNP billing generation. It is not recommended implementation of LNP FLRN translations to set FLRN_CALLTYPE to NP_PREFIX_LOCAL. This may produce unexpected billing and routing and may not be compatible with future LNP development.
		LNP_305_LOG	This subfield controls whether an LNP305 log is generated for LNP calls where post-query LATA values do not match the pre-query LATA values.
		LNPTCT	This subfield applies the LNP trigger criteria type to the Info Analyzed messages.

Field descriptions

Field	Subfield	Entry	Explanation and action
		NP_MAX_CONTAM	This subfield controls number pooling based on the percentage of contaminent DNs in a thousands block.
		NPRESERV_CI	This subfield controls access to number pooling provisioning through the NPRESERVE CI command.
		QPARMS	This subfield specifies query parameters.

Datafill

The following table lists datafill for LNPOPTS ‘OPTIONS’ Table.

Field descriptions

Field	Subfield	Entry	Explanation and action
OPTIONS		see OPTION field	Enter OPTIONS as described below.
ACG_10D_TRMT	TREATMENT	EXTENDED_TREATMENT	Enter treatment for the 10D ACG call. LNP calls encountering 10D ACG are routed to AINF treatment if no entry is made here.

LNPOPTS (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
BLOCKLNP	BLKNP_STATUS	{ACTIVE, INACTIVE}	ACTIVE: In conjunction with the BLOCKLNP option in TRKOPTS, blocks LNP calls that did not perform a necessary query. Allows specification of a treatment for the blocked calls. ***Note:*** The system prints a warning message when ACTIVE and TREATMENT are selected.The message states that this option can prevent completion of some LNP calls. INACTIVE: Disables BLOCKLNP feature
FLRN_CALLTYPE	FLRN_CT_VALUE	{MATCH_PREQUERY, NO_PREFIX_LOCAL}	MATCH_PREQUERY: Uses prequery call type for routing and billing NO_PREFIX_LOCAL: Forces all FRLN translations to be marked as no prefix local for the purposes of post-LNP billing generation. It is not a recommended implementation of LNP FLRN translations to set FLRN_CALLTYPE to NP_PREFIX_LOCAL. This may produce unexpected billing and routing and may not be compatible with future LNP development.
LNP_305_LOG	NP_LATA_LOG_VALUE	{LOG_ON, LOG_OFF}	LOG_ON: Activates log 305 generation LOG_OFF: Deactivates log 305 generation

LNPOPTS (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
LNPTCT	LNPTCT_VALUE	{PODP , LNP}	PODP: (default) uses normal Trigger Criteria Type for Info_analyzed Messages (NPA, NPAXXX and NPAXXXXXX). LNP: Assigns value LocalNumberPortability to the Trigger Criteria Type field of Info_analyzed Messages.
NP_MAX_CONTAM	NP_MAX_PERCENTAGE_CONTAM	{0 TO 40}	Disallows pooling of thousand block of numbers if more than specified percentage of DNs is contaminated (0-40%)
NPRESERV_CI	NPRESERV_CI_VALUE	{OFF, ON}	OFF: Disallows access to Number Pooling provisioning through the NPRESERVCE CI command. ON: Allows access to Number Pooling provisioning through the NPRESERVCE CI command.
QPARMS	OPTION_NAME		Allows selection of optional query parameters to be sent in an LNP query.
		{LATA Y/N	LATA: Local Access Transport area. Enter Y to include the parameter and N to ignore it. The default is N.
		CHARGNUM Y/N	CHARGNUM: Charge Number. Enter Y to include the parameter and N to ignore it. The default value is Y.
		CLGPTYID Y/N	CLGPTYID: Calling Party Id. Enter Y to include the parameter and N to ignore it. The default value is Y.
		CLGPBGID Y/N	CLGPBGID: Calling Party Business Group ID. Enter Y to include the parameter and N to ignore it. The default value is N.

LNPOPTS (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
		CHGPTYST Y/N	CHGPTYST: Charge Party Station type. Enter Y to include the parameter and N to ignore it. The default value is Y.
		PRIMCARR Y/N	PRIMCARR: Primary Carrier. Enter Y to include the parameter or N to ignore it. The default value is N.
		TCM Y/N	TCM: Trigger Criteria Model. Enter Y to include the parameter and N to ignore it. The default value is N.
		OCLDPTID Y/N	Original called party ID, Enter Y to include the parameter and N to ignore it. The default value is N.
		REDIRPID Y/N	REDIRPID: Redirecting Party ID. Enter Y to include the parameter and N to ignore it. The default value is N.
		REDIRINF Y/N }	REDIRINF: Redirecting Information. Enter Y to include the parameter and N to ignore it. The default is N.

Note: For option QPARMS, the DMS software always sends User Identification (UserID), Bearer Capability (BC) and Called Party identification (CalledParty) mandatory parameters in an LNP Query.

Datafill example

The following example shows sample datafill for table LNPOPTS.

MAP display example for table LNPOPTS

```
TABLE: LNPOPTS
KEY                     OPTIONS

ACG_10D_TRMT            ACG_10D_TRMT AINF
BLOCKLNP                BLOCKLNP INACTIVE
FLRN_CALLTYPE           FLRN_CALLTYPE NO_PREFIX_LOCAL
LNP_305_LOG             LNP_305_LOG LOG_ON
LNPTCT                  LNPTCT PODP
NP_MAX_CONTAM           NP_MAX_CONTAM 10
NPRESERV_CI             NPRESERV_CI OFF
QPARMS                  QPARMS (LATA N) (CHARGNUM Y)
                        (CLGPTYID Y) (CLGPBGID N)
                        (CHGPTYST Y) (PRIMCARR N) (TCM N)
                        (OCLDPTID N) (REDIRPID N)
                        (REDIRINF N) $
```

The following table explains error messages that can occur when you attempt to datafill table LNPOPTS.

Error messages for table LNPOPTS

Message	Explanation	User action
`ERROR: BLOCKLNP tuple may not be changed while Software Optionality Control option LNP00200 is IDLE`	SOC option LNP00200 is in IDLE state.	Activate SOC option LNP00200. Enter the tuple again.
`ERROR: QPARMS tuple may not be changed while Software Optionality Control option LNP00200 is IDLE`	SOC option LNP00200 is in IDLE state.	Activate SOC option LNP00200. Enter the tuple again.
`ERROR: LNPTCT tuple may not be changed while Software Optionality Control option LNP00200 is IDLE`	SOC option LNP00200 is in IDLE state.	Activate SOC option LNP00200. Enter the tuple again.

Table history

SN06 (DMS)

Modified field descriptions base in Datafill section and replaced three examples of datafill with new example under CR Q00714342.

LNPOPTS (end)

NA015

Added option ACG_10D_TRMT.

NA010

Added options LNPTCT and BLOCKLNP.Added error messages.

NA009

Introduced table LNPOPTS.

LNPRTE

Table name

Local Number Portability Route

Functional description

Table LNPRTE enables triggering criteria checking for local number portability (LNP) calls that route from

- pretranslation by table STDPRTCT
- class of service screening by table CLSVSCRC

When a call routes directly out of tables STDPRTCT or CLSVSCRC

- the call translates to table LNPRTE
- the route through table LNPRTE activates LNP criteria checking for the call.

Datafill sequence and implications

LNP recommends that the following tables be datafilled after table LNPRTE:

- office route tables OFRT, OFR2, OFR3, and OFRT4
- integrated business network tables IBNRTE, IBNRT2, IBNRT3, and IBNRT4

Table size

The maximum size is 8184 route tuples.

Datafill

The following table lists datafill for table LNPRTE.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
RTETABID			Routing table identification. This field contains routing information for the LNP translation. This field consists of subfields TABID, FROMIDX, TOIDX, and their refinements.
	TABID	OFRTOFR2O FR3 OFR4 IBNRTE IBNRT2 IBNRT3 IBNRT4	Table identification. Datafill the name of the routing table.
	FROMIDX	Integer from 1 to 1023	*From index* Datafill the pointer to the first tuple in the desired range in the route table named by TABID.
	TOIDX	Integer from1 to 1023	*To index* Datafill the pointer to the last tuple in the desired range in the route table named by TABID.

Datafill example

The following example shows sample datafill for table LNPRTE.

MAP display example for table LNPRTE

```
                                                    RTETABID
_____________________________________________________________

                                                  OFRT   1  3
                                                  OFRT   5  5
                                                 IBNRT2 16 20
```

LNPRTE (end)

Table history

NA009

Feature AU 2525 introduces table LNPRTE.

LNSIGSYS

Table name

Line Signaling System Table

Functional description

In the North American version of the DMS-100 switch, many tables contain signaling system data. These tables include OFCSTD, OFCENG, TRKGRP, TRKSGRP, and TRKMEM. In the international version of the DMS-100 switch, the operating company can define some signaling data. Table LNSIGSYS contains the defined signaling data. This data allows operating companies to modify signaling parameters by trunk subgroup instead of by office.

Table TRKSGRP contains field LNICSSI (incoming line signaling system index) and field LNOGSSI (outgoing line signaling system index). These fields reference an entry in table LNSIGSYS.

Each tuple in table LNSIGSYS describes an instance of a signaling system. Different instances of signaling systems of the same signaling system type can be present. Examples of different instances of signaling systems are incoming, outgoing, and two-way. Examples of signaling system types include NTLS07, NTLS20, and CCITT no.5 signaling (N5).

For example, an administrative agency or operating company can have trunks that use a wink as a proceed-to-send (PTS) signal. The administrative agency or operating company can have trunks that use a delay-dial seize acknowledge signal (SZA) followed by PTS.

A wink-type signaling system differs from a delay-dial type signaling system. A wink-type signaling system requires that table LNSIGSYS contain data for a minimum of two signaling system instances. Some wink trunks in an office can have wink time periods of 150 ms. Other wink trunks can have wink time periods of 100 ms. Two tuples in the table LNSIGSYS have the same signaling system type. A specified office can support 16 entries in field LNSIGIDX.

Each type of entry in table LNSIGSYS has the following design:

```
LNSIGIDX      SIGTYPE      LSSINFO
```

The customer can add a new tuple to table LNSIGSYS to define the name of a signaling system index. The key field is LNSIGSYS. Each signaling system type entered in field SIGTYPE can support a generic signaling system. The fields that appear in field LSSINFO depend on the entries in field SIGTYPE for that tuple. The fields that require datafill are different type. Descriptions of these fields appear separately.

LNSIGSYS (continued)

All the signaling types appear in the following table. See the appropriate section of this table for the datafill of each signaling type. For example, see table LNSIGSYS type DELDIAL to find the datafill of the delay-dial (DELDIAL) signaling system.

Signaling types (Sheet 1 of 2)

Signaling type	Explanation
DELDIAL	Delay-dial signaling
N5	CCITT No.5 signaling (N5)
NTLS03	NTLS03 signaling
NTLS04	NTLS04 signaling
NTLS05	NTLS05 signaling
NTLS06 incoming	NTLS06 incoming signaling
NTLS06 outgoing	NTLS06 outgoing signaling
NTLS07 incoming	NTLS07 incoming signaling
NTLS07 outgoing	NTLS07 outgoing signaling
NTLS08 incoming	NTLS08 incoming signaling
NTLS08 outgoing	NTLS08 outgoing signaling
NTLS09 incoming	NTLS09 incoming signaling
NTLS09 outgoing	NTLS09 outgoing signaling
NTLS10	NTLS10 signaling
NTLS11 incoming	NTLS11 incoming signaling
NTLS11 outgoing	NTLS11 outgoing signaling
NTLS14	NTLS14 signaling
NTLS15 incoming	NTLS15 incoming signaling
NTLS15 outgoing	NTLS15 outgoing signaling
NTLS16 incoming	NTLS16 incoming signaling
NTLS16 outgoing	NTLS16 outgoing signaling
NTLS16 two-way	NTLS16 two-way signaling

Signaling types (Sheet 2 of 2)

Signaling type	Explanation
NTLS20 incoming	NTLS20 incoming signaling
NTLS20 outgoing	NTLS20 outgoing signaling
NTLS22 incoming	NTLS22 incoming signaling
NTLS22 outgoing	NTLS22 outgoing signaling
NTLS24 incoming/outgoing	NTLS24 incoming/outgoing signaling
WINKSIG	Wink (wink-start) signaling

Updating of signaling system data in the peripheral modules

The international digital trunk controller (IDTC) peripheral module (PM) holds the contents of table LNSIGSYS. When the return to service (RTS) of each PM occurs the system downloads the contents of table LNSIGSYS to the PM. If data changes while a PM is in service, the system downloads the data on the next RTS. The RTS can be manual from the PM level of the MAP display. The system can start the RTS on a system-busy PM. If a unit is manually busy, enter the LOADPM CC DATA command to download the data. Perform this command at the PM level of the MAP display.

Making changes to table LNSIGSYS

Some reasons for changing signaling system data are the following:

- to add new trunks with a new signaling system occurs to the switch
- to separate one trunk from the trunk group to experiment with the signaling parameters of the trunk
- to change one or more of the timing parameters for all trunks that use a signaling system
- to change all trunks of a specified signaling system to a new signaling system type

The first two conditions described above, require datafill for the new trunks. You must enter data in table LNSIGSYS before you enter data in table TRKSGRP. For example, table TRKSGRP can require a new entry to support a trunk that requires a new line signaling index. In this event, you must enter data for the index in table LNSIGSYS first. Enter this data in table LNSIGSYS before you enter data for the trunk in table TRKSGRP.

LNSIGSYS (continued)

In the third condition, you do not need change the data in table TRKSGRP. Make the correct changes to the parameters in table LNSIGSYS.

In the fourth condition, the signaling used on a set of trunks requires a large change. The change of signaling used on a set of trunks requires an arrangement with the switching center at the far end of the trunks. Busy all the trunks in the affected trunk group before you change the signaling index in table TRKSGRP. This action makes sure that all data and call processing actions are compatible.

Adding a new tuple to table LNSIGSYS from the MAP terminal

In the first two conditions described before, table LNSIGSYS requires the addition of a new signaling system.

Use the ADD command at the MAP terminal to add a new line signaling index to table LNSIGSYS. See example 1 following. When the prompt SIGTYPE appears, enter the required line signaling type. Prompts appear for any changes from the displayed default values. Enter a blank line to keep the default values. Table DEFDATA defines the default values.

Examples of the procedures appear below. User actions appear in lower case.

Example 1

Adding a new tuple to table LNSIGSYS

```
>table lnsigsys
>add
LNSIGIDX:
>mylnsigidx
SIGTYPE:
>deldial
RCMNSZG:  100
<cr>
SDPRESZA: 100
<cr>
SMNPRPTS: 180
>200
RMNPRSZA: 100
. . .
    (etc.)

TUPLE TO BE CHANGED:
MYLNSIGIDX DELDIAL 100 100 200 ............etc
ENTER Y TO CHANGE, N TO ABORT, OR E TO EDIT
>y
```

Example 2

Datafilling table TRKSGRP

Enter data for the new trunks. See example 2. The value entered for the new subgroup must refer to the new value in field LNSIGIDX in table LNSIGSYS. The new subgroup is in field LNICSSI or field LNOGSSI in table TRKSGRP. The system does not download data at this point in the procedure.

```
>table trksgrp
>position mytrunk 0
MYTRUNK 0 P30CAS SIGSYS N N DELDIAL IC MYSIGIDX MYRGSIGIDX 0
```

Example 3

Busy and return to service

Busy and RTS each trunk in the subgroup to activate the change. Perform this action from the trunk test position (TTP) level of the MAP display. See example 3. If a trunk is already busy for any reason, the RTS procedure activates the change.

```
>mapci  nodisp;mtc;trks;ttp
>post  g  mytrunk
>bsy  all
>rts  all
```

In the examples, the addition of a new line signaling index MYLNSIGIDX with signaling type DELDIAL occurs. The values are the same as the default values for signaling type DELDIAL. The value in field SMNPRPTS changes from 180 ms to 200 ms.

Deleting a line signaling index

Delete the entries in field LNICSSI or field LNOGSSI in table TRKSGRP that refer to the tuple. Delete these entries before you delete a tuple from table LNSIGSYS.

Making changes to existing tuples in table LNSIGSYS

The value of any field except the key field LNSIGIDX or the selector field LNSIGTYP can change through the normal method. See example 1. If the change involves large numbers of trunks, test the new signaling values on a small subgroup first. Perform this action after you define a new line signaling index.

Make sure the values are correct for the test subgroup. Change the original tuple for the subgroup. Busy the members of the test subgroup before you enter data for these members. Enter the data to change the members of the test subgroup to members of the original subgroup.

LNSIGSYS (continued)

Datafill sequence and meaning

You do not need to enter data in other tables before you enter data in table LNSIGSYS.

Table size

0 to 26 tuples

Datafill

Descriptions of field names, subfield names, and correct data ranges for table LNSIGSYS appear in the following pages.

Datafill example

Sample datafill for table LNSIGSYS appears in the following example.

MAP example for table LNSIGSYS

```
                        LNSIGIDX  SIGTYPE
                LSSINFO


_____________________________________________________________

           N5       N5 15 15 15 15 9 9 9 9 9 10  80  5 30
```

Table history

MMP12

Changed the maximum number of tuples to 26.

BCS36

The removal of field RWNKDEL for signaling type NTLS09 outgoing occurred in BCS36. The signaling type NTLS22 was added in BCS36.

BCS35

Fields RMINSSF and RMINSSB were added to NTLS20 outgoing in BCS35. Fields OPTION and Q33TIMER to N5 were added in BCS35.

Additional information

Error messages that can occur when you enter data in table LNSIGSYS appear in this section.

Error messages

Delete the entries in field LNICSSI or field LNOGSSI in table TRKSGRP that refer to the tuple in table LNSIGSYS. If you do not delete the tuples in table TRKSGRP, the following error message appears:

```
UNEXPECTED ERROR CONDITION
CANNOT DELETE THIS TUPLE; IT IS USED BY YTRKSGRP|CLLI
```

LNSIGSYS type DELDIAL

Signaling type DELDIAL

This section describes the datafill that the operating company defines for the delay-dial signaling system.

Datafill

Datafill for table LNSIGSYS type DELDIAL appears in the following table.

Field descriptions (Sheet 1 of 6)

Field	Subfield	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index* Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The table can contain a maximum of 25 line signaling indexes.
SIGTYPE		DELDIAL	*Signaling type* Enter DELDIAL for delay-dial signaling.
LSSINFO		see subfields	*Line signaling system information* This field contains the subfields that follow.
	FILTERTM	20	*Filter time* Enter 20 as the minimum signal duration time for the detection of a line signal. The duration time is in units of 2 ms. The system does not recognize a line signal that continues for less than 40 ms. If you do not enter 20, the tuple is invalid and table control displays the following warning message: `FLTR must be 20 (40 ms) for this SIGTYPE` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).
	RCMNSZG	3 to 1000	*Received minimum seize signal* Enter the minimum time in 2 ms intervals, for the system to detect a seize signal. The recommended range is 50 to 120 (100 to 240 ms).

LNSIGSYS type DELDIAL (continued)

Field descriptions (Sheet 2 of 6)

Field	Subfield	Entry	Explanation and action
	SDPRESZA	3 to 6000	*Send pre-seizure* Enter the time that an incoming trunk waits: • following the detection of seizure • before a response of the transmission of a seize acknowledge signal toward the calling office Enter the time in 2 ms intervals. The recommended range is 1 to 300 (2 to 600 ms).
	SMNPRPTS	5 to 32767	*Send minimum pre-PTS* Enter the guaranteed minimum time between the transmission of a seizure signal and a proceed-to-send (PTS) signal. Enter the minimum time in 2 ms intervals. For example, if a receiver can receive digits at the time the system sends the seizure signal. When this condition occurs, the system delays the transmission of the PTS signal by the amount of time you specify. This procedure allows the originating office to detect the signals. The recommended range is 50 to 175 (100 to 350 ms).
	RMXPRSZA	3 to 32767	*Receive maximum pre-seize acknowledge* Enter the maximum time that an outgoing trunk waits for a seize acknowledge signal. Enter the maximum time in 2 ms intervals. The recommended range is 100 to 110 (200 ms to 220 ms).
	RMNPRPTS	3 to 32767	*Receive minimum pre-PTS* Enter the shortest time that the system accepts as seize acknowledge (SZA) following a PTS signal. Enter the shortest time in 2 ms intervals. The recommended range is 45 to 200 (90 to 400 ms).
	RMXPRPTS	9 to 32767	*Receive maximum pre-PTS* Enter the maximum time that a seized trunk waits for a PTS signal before the trunk times out. Enter the maximum time in 2 ms intervals. The recommended range is 1000 to 10000 (2 to 20 s).

LNSIGSYS type DELDIAL (continued)

Field descriptions (Sheet 3 of 6)

Field	Subfield	Entry	Explanation and action
	SDPTPTS	2 to 10000	*Send post PTS* Enter the minimum time that the trailing edge of a PTS signal continues. Enter the minimum time in 2 ms intervals. The recommended range is 2 to 200 (2 to 400 ms).
	RCMAXFAN	1 to 200	*Receive maximum false answer signal* Enter the time to delay the start of scanning for the answer signal that follows outpulsing. Enter the time in 10 ms intervals. The delay avoids problems with the temporary loop-open. Problems occur when a crossbar switch detaches the register of that crossbar switch from an incoming trunk. This temporary open is 200 to 1000 ms in time. The temporary open normally occurs to a maximum of 800 ms following completion of multifrequency (MF) digit outpulsing or reception. This action does not normally occur on E&M trunks. The delay-dial signaling system is normally for use on E&M trunks. The recommended value is 0. ***Note:*** The type of channel bank equipment in use can cause a false answer to not appear on the A-bit. If a false answer does not appear on the A-bit, you can use a value of 0. The recommended range is 1 to 200 (10 ms to 2 s).
	CLBTIMER	1 to 327 670	*Time-out after clear back signal* Enter the time that an incoming trunk waits following propagation of a clear back signal. The incoming trunk waits for two signals: • a clear forward signal from the calling end • a reanswer signal from the called end Enter the time in 10 ms intervals. Enter -1 to indicate timing does not occur. Entries out of this range are not correct. The recommended range is 1000 to 6400 (10 to 64 s).

LNSIGSYS type DELDIAL (continued)

Field descriptions (Sheet 4 of 6)

Field	Subfield	Entry	Explanation and action
	RCMNCLF	1 to 10000	*Receive minimum clear forward signal* Enter the minimum time required before the system recognizes a clear forward signal. Enter the minimum amount of time in 2 ms intervals. The recommended range is 50 to 200 (100 to 400 ms).
	SDMNCLF	1 to 10000	*Send minimum clear forward signal*. Enter the time that an outgoing trunk maintains the idle state following the transmission of a clear forward signal. Enter the time in 2 ms intervals. The recommended range is 50 to 500 (100 to 1000 ms).
	RCMNCLB	1 to 10000	*Receive minimum clear back signal* Enter the minimum time before the system recognizes a clear back signal. Enter the minimum time in 2 ms intervals. The recommended range is 50 to 200 (100 to 400 ms).
	RCMNRLG	50 to 1000	*Receive minimum release guard signal* Enter the minimum time before the system recognizes a release guard signal. Enter the minimum time in 2 ms intervals. The recommended range is 50 to 500 (100 to 1000 ms).
	RANITMO	500 to 3000	*Receive automatic number identification time* Enter the time that the outgoing end waits for an automatic number identification (ANI) request signal. The ANI request signal is a wink-type signal. Enter the time in 10 ms intervals. The outgoing end can time out before the end receives the ANI request signal. When this condition occurs, the system gives the calling party a treatment. You can enter the type of ANI request failure treatment. The system applies for each route. You can specify a tone or announcement treatment for each route. The recommended range is 500 to 3000 (5 to 30 s).

LNSIGSYS type DELDIAL (continued)

Field descriptions (Sheet 5 of 6)

Field	Subfield	Entry	Explanation and action
	RANIWMIN	50 to 80	*Receive automatic number identification wink minimum* Enter the minimum time that a received ANI wink signal maintains. The system requires this time to recognize the wink signal. Enter the minimum time in 2 ms intervals The recommended range is 50 to 80 (100 to 160 ms).
	RANIWMAX	100 to 175	*Receive automatic number identification wink maximum* Enter the maximum time that a received ANI wink signal maintains. The system requires this time to recognize the wink signal. Enter the maximum time in 2 ms intervals. The recommended range is 100 to 175 (200 to 350 ms).
	RANISETL	25 to 2500	*Post-automatic number identification receive delay* Enter the time that the outgoing end delays before the end sends the digits of the called number. Enter the time in 2 ms intervals. This delay allows analog facility transients to settle. The recommended range is 25 to 2500 (50 ms to 5 s).
	SANIWK	70 to 150	*Send automatic number identification wink* Enter the time of the ANI request wink the system sends. Enter the time in 2 ms intervals. The recommended range is 70 to 150 (140 to 3000 ms).
	SANISETL	20 to 50	*Post-automatic number identification send delay* Enter minimum time after the end of the ANI wink that the incoming end delays before the end sends the answer signal. Enter the minimum time in 2 ms intervals. This delay allows analog facility transients to settle. The recommended range is 20 to 50 (40 to 100 ms).

LNSIGSYS type DELDIAL (end)

Field descriptions (Sheet 6 of 6)

Field	Subfield	Entry	Explanation and action
	GUARDTM	40 to 2000	*Release guard time* Enter the time that an outgoing trunk remains busy: • after the transmission of a clear forward signal • before a search for a release guard signal Enter the time in 10 ms intervals. Entries out of this range are not correct. The recommended range is 40 to 1000 (40 ms to 10 s).
	IDLEPOL	0 or 1	*Idle polarity* Enter the value of the A-bit that the system sends and receives when idle. A value of 0 means that the clear forward signal is a change to 0 and the seizure signal is a 1. A value of 1 means the clear forward signal is 1 and the seizure signal is 0. Normally, channel bank units that interface with E&M signaling require a polarity of 0. Many loop signaling channel banks expect an idle polarity of 1.

LNSIGSYS type N5

Signaling type N5

This section describes the datafill that the operating company defines for the CCITT No.5 signaling (N5) system.

Datafill

Datafill for table LNSIGSYS type N5 appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	Indicates *Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The table can contain a maximum of 16 line signaling indexes.
SIGTYPE		N5	Indicates *Signaling type* . Enter N5 for the N5 signaling type.
LSSINFO		see refinements	Indicates *Line signaling system information*. This field contains the refinements that follow.
	BSFTXTTO	10 to 20	Indicates *N5 busy flash line signal maximum transmit time*. Enter the maximum transmit time that the busy flash signal transmits. Enter the time in intervals of 1 s. The system can transmit the busy flash signal for a period greater than the time you specify. When this condition occurs, the system terminates the signal. The system generates the appropriate log report. The recommended range is 10 s to 20 s. The default value is 15 s.
	ANSTXTTO	10 to 20	*N5 answer line signal maximum transmit time*. Enter the maximum transmit time that the answer line signal transmits. Enter the time in intervals of 1 s. If the system transmits an answer line signal for a period greater than the specified time, the system terminates the signal. The system generates the appropriate log. The recommended range is 10 to 20 s. The default value is 15 s.

LNSIGSYS type N5 (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	CBKTXTTO	10 to 20	*N5 clear back line signal maximum transmit time*. Enter the maximum transmit time that the clear back line signal transmits. Enter the time in intervals of 1 s. If the system transmits the clear back signal for a period greater than the specified time, the system terminates the signal. The system generates the appropriate log. The recommended range is 10 to 20 s. The default value is 15 s.
	CLFTXTTO	10 to 20	*N5 clear forward line signal maximum transmit time*. Enter the maximum transmit time that the clear forward line signal transmits. Enter the time in intervals of 1 s. If the system transmits the clear forward signal for a period greater than the specified time, the system terminates the signal. The system generates an appropriate log. The recommended range is10 s to 20 s. The default value is 15 s.
	PTSTXTTO	4 to 9	*N5 proceed-to-send line signal maximum transmit time*. Enter the maximum transmit time that the proceed-to-send (PTS) line signal transmits. Enter the time in intervals of 1 s. If the system transmits the PTS signal for a period greater than the specified time, the system terminates the signal. The system generates the appropriate log. The recommended range is 4 to 9 s. The default value is 9 s.
	RLGTXTTO	4 to 9	*N5 release guard line signal maximum transmit time*. Enter the maximum transmit time that the release guard line signal transmits. Enter the time in intervals of 1 s. If the system transmits the release guard signal for a period greater than the specified time, the system terminates the signal. The system generates an appropriate log. The recommended range is 4 to 9 s. The default value is 9 s.

LNSIGSYS type N5 (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	BFATXTTO	4 to 9	*N5 busy flash acknowledge line signal maximum transmit time*. Enter the maximum transmit time that the busy flash acknowledge line signal transmits. Enter the time in intervals of 1 s. The system can transmit the busy flash acknowledge signal for a period greater than the specified time. When this condition occurs, the system terminates the signal. The system generates an appropriate log. The recommended range is 4 to 9 s. The default value is 9 s.
	ANATXTTO	4 to 9	*N5 answer acknowledge line signal maximum transmit time*. Enter the maximum transmit time that the answer acknowledge line signal transmits. Enter the time in intervals of 1 s. If the system transmits an answer acknowledge signal for a period greater than the specified time, the system terminates the signal. The system generates an appropriate log. The recommended range is 4 to 9 s. The default value is 9 s.
	CBATXTTO	4 to 9	*N5 clear back acknowledge line signal maximum transmit time*. Enter the maximum transmit time that the clear back acknowledge line signal transmits. Enter the time in intervals of 1 s. The system can transmit the clear back acknowledge signal for a period greater than the specified time. When this condition occurs, the system terminates the signal. The system generates an appropriate log. The recommended range is 4 to 9 s. The default value is 9 s.

LNSIGSYS type N5 (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	CLFRLGTO	2 to 20	*N5 clear forward release guard time-out time*. Enter the maximum time to wait for an outgoing or two-way trunk to release a guard. The trunk releases a guard after the system sends a clear forward signal. The system sends this signal when the trunk is in use for an outgoing call. Enter the time in intervals of 1 s. The system can transmit the clear forward release guard time-out signal for a period greater than the specified time. When this condition occurs, the system places the trunk in a trunk lockout state. To start the automatic system recovery, repeat the clear forward sequence. The recommended range is 2 to 20 s. The default value is 2 s.
	CLFRLGRI	20 to 180	*N5 clear forward release guard sequence repeat interval*. Enter the maximum time between each clear forward release guard sequence. Enter time in intervals of 1 s. If a clear forward signaling sequence fails, the DMS automatically repeats the clear forward sequence. The recommended range is 20 to 180 s. The default value is 80 s.
	CLFRGRCY	1 to 25	*N5 clear forward release guard sequence repeat cycles*. Enter the maximum number of cycles that a clear forward sequence attempts. Enter the numbers of cycles in intervals of 1 cycle. If the attempted clear forward sequences exceed the specified number, the system generates a log entry. The system can correlate the number of clear forward repeat cycles with the time elapsed before the generation of a log entry. The system uses the following formula: Time interval between log entries = (CLFTXTTO + CLFRLGRI) x (CLFRGRCY - 1)

LNSIGSYS type N5 (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
			The formula is accurate to 30 s of the desired time. The accuracy depends on the failure mode of the clear forward sequence. The recommended range is 1 to 25 cycles. The default value is 5 cycles.
	TRKAVTO	20 to 60	*N5 trunk availability time-out time unit*. Enter the maximum transmit time before the trunk returns to idle after a release guard signal stops. Enter the time in intervals of 10 ms. Outgoing access to the incoming end of a two-way trunk can return to idle. Outgoing access can return to idle for the duration of the trunk availability time-out time. This condition can only occur when the release of a guard signal transmission stops. The recommended range is 20 to 60 ms. The default value is 30 ms.
	OPTION (BCS35-)	Q33 or $	*Option*. Enter Q33 to activate the Q33 timer. Enter the timer setting in refinement Q33TIMER. Perform this procedure if feature NC0321 (Circuit Supervision/Transmission Failure Actions Q33) is available. Default value: $
	Q33TIMER (BCS35-)	10 to 30	*Q33 timer setting*. Enter the Q33 timer setting in increments of 1 s. The Q33 timer specifies the length of time to wait for a CCITT Q33 trunk supervision alarm to clear. Enter data in this field when the system activates feature NC0321. The user can enter the Q33 timer for all trunks. The Q33 timer only operates for incoming and two-way trunks. The default value is 10 s.

Signaling type NTLS03

This section describes the customer variable data for the NTLS03 signaling system.

The NTLS03 signaling system is for use in one-way outgoing applications. An example of these applications is terminating trunks from a DMS-200 to an operator switchboard. Call processing operation is seize only, without outpulsing. This line signaling system uses A-bit signaling for all standard telephony signals and includes B-bit blocking and unblocking signals.

Datafill

Datafill for table LNSIGSYS type NTLS03 appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of additions of line signaling indexes that can occur to the table is 16.
SIGTYPE		NTLS03	*Signaling type*. Enter NTLS03 for the NTLS03 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal time for the detection of any line signal. Enter the value in units of 2 ms. The system does not recognize any line signal that occurs for less than 40 ms. If the value that you enter is not 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. The default value is 1.

LNSIGSYS type NTLS03 (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	BIDLPOL	0 or 1	*B-bit idle polarity*. Enter the polarity of the B-bit when idle. The default value is 1.
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time that the idle signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 5 (50 ms).
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that the forward seizure signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time that the forward clear forward signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RANSDEL	0 to 6000	*Receive answer delay*. Enter the maximum delay that follows outpulsing, before scanning for the answer signal. Enter the delay in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time that the backward release guard signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 3 (30 ms).

LNSIGSYS type NTLS03 (end)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	RMINLCKO	0 to 6000	*Receive minimum lockout signal*. Enter the minimum time that a received backward off-hook signal must occur for the system to recognize the signal as a lockout signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 50 (500 ms).
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that a received B-bit blocking signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 50 (500 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal*. Enter the minimum time that a received forward or backward on-hook (idle) signal must occur for the system to recognize the signal as a recovery signal. Enter the minimum time in 10 ms intervals. This procedure allows the trunk to return to the idle state. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RMINUBL	0 to 6000	*Receive minimum unblocking signal*. Enter the minimum time that a received B-bit unblocking signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 50 (500 ms).
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time that a sent clear forward signal or a received release guard signal. Enter the time in 10 ms intervals. This procedure guarantees disconnection at the far end. The recommended range is 10 to 200 (100 ms to 2 s). The default value is 50 (500 ms).

LNSIGSYS type NTLS04

Signaling type NTLS04

This section describes the NTLS04 signaling system datafill that the operating company can define.

The NTLS04 signaling system is for use in one-way incoming applications. An example of these applications is junctor trunking from an operator switchboard to a DMS-200. The operation includes:

- a single A-bit state transition for a proceed-to-send signal
- a restoration to the original state when the stop transmission (ST) signal is received at the end of the digit string

This line signaling system uses only A-bit signaling for all standard telephony signals.

Datafill

Datafill for table LNSIGSYS type NTLS04 appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of additions of line signaling indexes that can occur to table LNSIGSYS is 16.
SIGTYPE		NTLS04	*Signaling type*. Enter NTLS04 for the NTLS04 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.

LNSIGSYS type NTLS04 (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	20	*Filter time*. Enter 20 for the minimum signal duration for detection of any line signal. Enter 20 in units of 2 ms. The system does not recognize any line signal that continues for less than 40 ms. If the value that you enter is not 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 0
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time that an idle signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 5 (50 ms).
	SMINPTS	0 to 6000	*Send minimum backward PTS*. Enter the minimum time that a backward proceed-to-send (PTS) signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	SMINEOD	0 to 6000	I*Send minimum backward end-of-digits*. Enter the minimum time that a backward end-of-digits (EOD) signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 5 (50 ms).

LNSIGSYS type NTLS04 (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time to maintain the backward answer signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	SMINRLG	0 to 6000	*Send minimum release guard signal*. Enter the minimum time to maintain the backward release guard signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	SMINRMB	0 to 6000	*Send minimum remote make busy*. Enter the minimum time of the sent remote make busy signal. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RMINSZG	0 to 200	*Receive minimum seize signal*. Enter the minimum time a received forward seize signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 200 (0 to 2 s). The default value is 20 (200 ms).
	RMINCLF	1 to 1000	*Receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 1 to 1000 (10 ms to 10 s). The default value is 20 (200 ms).

LNSIGSYS type NTLS04 (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RCLFTMO	0 to 6000	*Receive clear forward time-out*. Enter the maximum time that the trunk waits for a received clear forward (CLF) signal or a reanswer (RAN) signal that follows the sending of a clear back (CLB) signal. Enter the maximum time in 10 ms intervals. This value is the incoming lockout time if the originator receives a CLB signal. A CLF signal is not received in return and a RAN signal is not received from the terminator. A value of 0 indicates that timing is not present and the maximum wait time is without limit. The recommended range is 0 to 6000 (0 to 60 s). The default value is 3000 (30 s).
	RANSTIMR	0 to 6000	*Receive answer timer*. Enter the minimum time that the answer signal occcurs before the system recognizes the signal. Enter time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).

LNSIGSYS type NTLS05

Signaling type NTLS05

This section describes the datafill that the operating company can define for the NTLS05 signaling system.

One-way incoming applications use the NTLS05 signaling system. The specialized junctor trunking from an operator switchboard to a DMS-200 is an example of a one-way incoming application. The operation has the same signaling as NTLS04. The operation includes an end-of-selection (EOS), start ringing (SRG), and break-in-request (BIR) signals. The line signaling system uses the A-bit for all standard telephony signals. The line signaling system does not use SRG and BIR signals recognized on the B-bit. The B-bit also blocks and unblocks signals.

Datafill

Datafill for table LNSIGSYS type NTLS05 appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSI. GIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS05	*Signaling type*. Enter NTLS05 for the NTLS05 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements described below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal time period for the detection of any line signal. Enter the time in 2-ms intervals. The system does not recognize any line signal that continues for less than 40 ms. When the value entered is not 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms) Default value: 20 (40 ms).

LNSIGSYS type NTLS05 (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 1
	BIDLPOL	0 or 1	*B-bit idle polarity*. Enter the polarity of the B-bit when idle. Default value: 1
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time to maintain an idle signal for recognition. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s) Default value: 5 (50 ms).
	SMINPTS	0 to 6000	*Send minimum backward PTS*. Enter the minimum time to maintain a backward proceed-to-send (PTS) signal for recognition. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINEOD	0 to 6000	*Send minimum backward end-of-digits*. Enter the minimum time to maintain a backward end-of-digits (EOD) signal for recognition. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINEOS	0 to 6000	*Send minimum end-of-selection signal*. Enter the minimum time to maintain the backward end-of-selection (EOS) signal for recognition. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINSSF	0 to 6000	*Send minimum subscriber free signal*. Enter the minimum time to maintain the backward subscriber free signal for recognition. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS05 (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time to maintain the backward answer signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINRLG	0 to 6000	*Send minimum release guard signal*. Enter the minimum time to maintain the backward release guard signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINRMB	0 to 6000	*Send minimum remote make busy*. Enter the minimum timeperiod of the sent remote make busy signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RMINSZG	0 to 200	*Receive minimum seize signal*. Enter the minimum time to maintain a received forward seizure signal for recognition. Enter the time in 10-ms intervals. Recommended range: 0 to 200 (0 to 2 s). Default value: 10 (100 ms).
	RMINFOT	1 to 20	*Receive minimum forward transfer signal*. Enter the minimum time to maintain a received forward transfer signal for recognition. Enter the time in 10-ms intervals. This signal is synonymous with start ringing (SRG) and break-in-request (BIR) signals. Recommended range: 1 to 20 (10 to 200 ms). Default value: 20 (200 ms)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RMINCLF	1 to 1000	*Receive minimum clear forward signal*. Enter the minimum time to maintain a received clear forward signal for recognition. Enter the time in 10-ms intervals. Recommended range: 1 to 1000 (10 ms to 10 s). Default value: 20 (200 ms)
	RCLFTMO	0 to 6000	*Receive clear forward time-out*. Enter the maximum time to indicate that the trunk waits for a received clear forward (CLF) signal or a reanswer (RAN) signal. Enter the time in 10-ms intervals. This RAN signal follows the sending of a clear back (CLB) signal. This value is the incoming lockout time if the following condtions occur: • the system sends a CLB signal to the originator • the system does not receive a CLF signal • the terminator does not send an RAN signal A value of 0 indicates timing is not present. The maximum wait time becomes infinite. Recommended range: 0 to 6000 (0 to 60 s). Default value: 3000 (30 s)
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time to maintain a received B-bit blocking signal for recognition. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms)
	RMINUBL	0 to 6000	*Receive minimum unblocking signal*. Enter the minimum time to maintain a received B-bit unblocking signal for recognition. Enter this time in 1--ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms)
	RANSTIMR	0 to 6000	*Receive answer timer*. Enter the minimum time to maintain the answer signal for recognition. Recommended range: 0 to 6000 (0 to 60 s). Default value: 20 (200 ms)

LNSIGSYS type NTLS06 incoming

Signaling type NTLS06 incoming

This section describes the datafill that the operating company defines for the NTLS06 incoming signaling system.

The system uses NTLS06 incoming signaling system in one-way incoming E&M applications. These applications are from a DMS-200 to end offices that carry BA-1 switchboard traffic. The switchboard traffic originates on trunks with NTLS05 signaling. The operation is the same as delay-dial signaling. The operation includes the end-of-selection (EOS), start ringing (SRG), and break-in-request (BIR) signals. The line signaling system uses A-bit signaling for all standard telephony signals. The line signaling system uses A-bit signaling for EOS, SRG, and BIR signals.

Datafill

The following table lists the datafill for table LNSIGSYS type NTLS06 incoming.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of additions of line signaling indexes to the table is 16.
SIGTYPE		NTLS06	*Signaling type*. Enter NTLS06 for the NTLS06 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains refinements. Descriptions of these refinements appear below.

LNSIGSYS type NTLS06 incoming (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time, in units of 2 ms. This entry indicates the detection of any line signal. The system does not recognize any line signal that continues for less than 40 ms. If the value entered is not 20, table control sets the field to 20 and gives the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms. Default value: 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 0
	SIGDIR	IC	*Signaling direction*. Enter IC (incoming) for the signaling direction value. Default value: OG
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time in 10 ms intervals to maintain an idle signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	SMINSZA	0 to 6000	*Send minimum backward seizure signal*. Enter the minimum time in 10 ms intervals to maintain a backward seize acknowledge signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s. Default value: 20 (200 ms).
	SMINPTS	0 to 6000	*Send minimum backward PTS*. Enter the minimum time, in 10 ms intervals. This entry indicates the maintenance of a backward proceed-to-send (PTS) signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 20 (100 ms).

LNSIGSYS type NTLS06 incoming (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINEOS	0 to 6000	*Send minimum end-of-selection signal*. Enter the minimum time in 10 ms intervals to maintain the backward end-of-selection (EOS) signal. Recommended range: 0 to 6000 (0 s to 60 s. Default value: 5 (50 ms).
	SMINSSF	0 to 6000	*Send minimum subscriber free signal*. Enter the minimum time in 10 ms intervals to maintain the backward subscriber free signal. Recommended range: 0 to 6000 (0 s to 60 s. Default value: 10 (100 ms).
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time in 10 ms intervals to maintain the backward answer signal. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	SMINRAN	0 to 6000	*Send minimum reanswer signal*. Enter the minimum time in 10 ms intervals to maintain the backward reanswer signal. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time in 10 ms intervals to maintain the backward clear back signal. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	SMINRLG	0 to 6000	*Send minimum release guard signal*. Enter the minimum time in 10 ms intervals to maintain the backward release guard signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	SMINBLO	0 to 6000	*Send minimum blocking signal*. Enter the minimum time in 10 ms intervals to maintain the backward A-bit blocking signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS06 incoming (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RMINSZG	0 to 200	*Receive minimum seize signal*. Enter the minimum time in 10 ms intervals to maintain received forward seize signal for recognition. Recommended range: 0 to 200 (0 to 2 s). Default value: 10 (100 ms).
	RMINCLF	1 to 1000	*Receive minimum clear forward signal*. Enter the minimum time in 10 ms intervals to maintain a received clear forward signal for recognition. Recommended range: 1 to 1000 (10 ms to 10 s). Default value: 21 (210 ms).
	RMINFOT	1 to 20	*Receive minimum forward transfer signal*. Enter the minimum time in 10 ms intervals to maintain a received forward transfer signal for recognition. This signal is identified with the start ringing (SRG) and break-in-request (BIR) signals. Recommended range: 1 to 20 (10 ms to 200 ms). Default value: 8 (80 ms).
	RMAXFOT	10 to 50	*Receive maximum forward transfer signal*. Enter the maximum time in 10 ms intervals to maintain a received forward signal for recognition. This signal is identified with the SRG and BIR signals. Use of this field occurs in applications in which the ring forward signal takes the form of a pulse. The entry in this field defines the upper time limit for the pulse. Recommended range: 10 to 50 (100 ms to 500 ms). Default value: 20 (200 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal*. Enter the minimum time in 10 ms intervals to maintain a received forward or backward on-hook signal as a recovery signal. An on-hook signal is idle. The received forward or backward on-hook signals allow the trunk to return to the idle state. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS06 outgoing

Signaling type NTLS06 outgoing

This section describes the datafill that the operating company defines for the NTLS06 outgoing signaling system.

The system uses the NTLS06 outgoing signaling system in one-way outgoing E&M applications. These outgoing applications are from a DMS-200 to end offices. The end offices carry BA-1 switchboard traffic that originates on trunks with NTLS05 signaling. The operation is the same as delay-dial signaling. The operation includes the end-of-selection (EOS), start ringing (SRG), and break-in-request (BIR) signals. The line signaling system uses A-bit signaling for all standard telephony signals and for EOS, SRG, and BIR signals.

Datafill

Datafill for table LNSIGSYS type NTLS06 outgoing appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of additions of line signaling indexes to the table is 16.
SIGTYPE		NTLS06	*Signaling type*. Enter NTLS06 for the NTLS06 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains refinements. Descriptions of these refinements appear below.

LNSIGSYS type NTLS06 outgoing (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time, in units of 2 ms, for the detection of any line signal. The system does not recognize any line signal that persists for less than 40 ms. If you do not enter the value 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms). Default value: 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 0
	SIGDIR	OG	*Signaling direction*. Enter OG for the outgoing signaling direction. Default value: OG
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time in 10 ms intervals to maintain an idle signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time in 10 ms intervals to maintain the forward seize signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 20 (200 ms).
	SFOTTM	5 to 50	*Send forward transfer pulse time*. Enter the length in 10 ms intervals of the forward transfer pulse signal. This signal is synonymous with the SRG and BIR signals. Recommended range: 5 to 50 (50 ms to 500 ms). Default value: 10 (100 ms).

LNSIGSYS type NTLS06 outgoing (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SFOTTM2	5 to 50	*Send forward transfer time*. Enter the length in 10 ms intervals to maintain the trailing edge of the forward transfer signal. Recommended range: 5 to 50 (50 ms to 500 ms). Default value: 10 (100 ms).
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time in 10 ms intervals to maintain the forward clear forward signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	RSZADEL	0 to 6000	*Receive seize acknowledge delay*. Enter the delay time in 10 ms intervals first that must occur before the scan for the seize acknowledge signal begins. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	RMINSZA	0 to 6000	*Receive minimum seize acknowledge signal*. Enter the minimum time in 10 ms intervals to maintain a received backward seize acknowledge signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	RSZATMO	0 to 6000	*Receive seize acknowledge time-out*. Enter the maximum time in 10 ms intervals to allow for the reception of a seize acknowledge signal. The seize acknowledge signal follows a seize signal that the system sends. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 500 (5 s).
	RPTSTMO	0 to 6000	*Receive PTS time-out*. Enter the maximum time in 10 ms intervals to wait for reception of a proceed-to-send (PTS) signal. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 500 (5 s).

LNSIGSYS type NTLS06 outgoing (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	OUTPDEL	0 to 6000	*Outpulse pulse delay*. Enter the delay in 10 ms intervals that must occur before outpulsing starts. This outpulsing occurs after the system receives the wink PTS signal. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 7 (70 ms).
	RANSDEL	0 to 6000	*Receive answer delay.* Enter the maximum delay in 10 ms intervals that must follow outpulsing before a scan for the answer signal. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 20 (200 ms).
	RMINRAN	0 to 6000	*Receive minimum reanswer signal*. Enter the minimum time in 10 ms intervals to maintain a received backward reanswer signal for recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 3 (30 ms).
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time in 10 ms intervals to maintain the backward release guard signal recognition. Recommended range: 0 to 6000 (0 to 60 s). Default value: 3 (30 ms).
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time in 10 ms intervals to maintain a sent clear forward or a received release guard signal. This maintenance of this signal is to guarantee the far-end disconnection. Recommended range: 10 to 200 (100 ms to 2 s). Default value: 70 (700 ms).

LNSIGSYS type NTLS06 outgoing (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINLCKO	0 to 6000	*Receive minimum lockout signal*. Enter the minimum time in 10 ms intervals to maintain a received backward off-hook signal for lockout recognition. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal*. Enter the minimum time in 10 ms intervals to maintain a received forward or backward on-hook signal for recognition as a recovery signal. The on-hook signal is idle. This process allows the trunk to return to the idle state. Recommended range: 0 to 6000 (0 s to 60 s). Default value: 10 (100 ms).

Signaling type NTLS07 incoming

This section describes the datafill that the operating company can define for the NTLS07 incoming signaling system.

One-way incoming applications from toll exchanges to a DMS-100 use the NTLS07 incoming signaling system. The operation is the same as wink signaling. The operation includes the end-of-selection (EOS), start ringing (SRG), and break-in-request (BIR) signals. This signaling system uses A-bit signaling for standard telephony signals except SRG and BIR signals. The SRG and BIR signals use B-bit signaling. The EOS, SRG and BIR signals make this signaling system compatible with NTLS05. The B-bit signaling blocks and unblocks signals.

Datafill

The datafill for table LNSIGSYS type NTLS07 incoming appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The table can contain a maximum number of 16 line signaling indexes.
SIGTYPE		NTLS07	*Signaling type*. Enter NTLS07 for the NTLS07 signaling type.
LSSINFO		refer to refinements	*Line signaling system information*. This field has the refinements that follow.

LNSIGSYS type NTLS07 incoming (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	20	*Filter time*. Enter 20 for the minimum signal duration time for the detection of a line signal. The duration time must be in units of 2 ms. The system does not recognize a line signal that continues for less than 40 ms. When the entry value is not 20, table control sets the field to 20. The following warning message appears: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms). Default value: 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 1
	BIDLPOL	0 or 1	*B-bit idle polarity*. Enter the polarity of the B-bit when idle. Default value: 1
	SIGDIR	IC	*Signaling direction*. Enter IC for the incoming signaling direction.
	RMINSZG	0 to 200	*Receive minimum seize signal*. Enter the minimum time that a received forward seize signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 200 (0 to 2 s). Default value: 20 (200 ms).
	RMINCLF	1 to 1000	*Receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal continues for detection. Recommended range: 1 to 1000 (10 ms to 10 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS07 incoming (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time a sent clear forward or a received release guard signal continues to guarantee the far-end disconnection. Enter the time in 10-ms intervals. Recommended range: 10 to 200 (100 ms to 2 s). Default value: 70 (700 ms).
	SPTSTM	10 to 35	*Send PTS off-hook timing*. Enter the time to maintain the sent backwards proceed to send (PTS) signal pulse (the off-hook pulse). Enter the time in 10-ms intervals. Recommended range: 10 to 35 (100 to 350 ms). Default value: 20 (200 ms).
	SPTSTM2	0 to 6000	*Send PTS on-hook timing*. Enter the time to maintain the end of the sent backwards PTS signal pulse. Enter the time in 10-ms intervals. This entry defines the time to maintain the on-hook signal after the off-hook pulse.
	SMINEOS	0 to 6000	*Send minimum end-of-selection signal*. Enter the minimum time to maintain the backward end-of-selection (EOS) signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 5 (50 ms).
	SMINSSF	0 to 6000	*Send minimum subscriber free signal*. Enter the minimum time to maintain the backward subscriber free signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time to maintain the backward answer signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS07 incoming (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SMINRAN	0 to 6000	*Send minimum reanswer signal* . Enter the minimum time to maintain the backward reanswer signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINRLG	0 to 6000	*Send minimum release guard signal*. Enter the minimum time to maintain the backward release guard signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RMINFOT	1 to 20	*Receive minimum forward transfer signal*. Enter the minimum time that a received forward transfer signal maintains for detection. Enter the time in 10-ms intervals. This signal is like the start ringing (SRG) and break-in-request (BIR) signals. Recommended range: 1 to 20 (10 to 200 ms). Default value: 8 (80 ms).
	RMAXFOT	10 to 50	*Receive maximum forward transfer signal*. Enter the maximum time that a received forward signal continues for detection. Enter the time in 10-ms intervals. This signal is like the SRG and BIR signals. Applications where the ring forward signal is a pulse use this field. The entry in this field defines the upper time limit for the pulse. Recommended range: 10 to 50 (100 to 500 ms). Default value: 20 (200 ms).

LNSIGSYS type NTLS07 incoming (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that a received forward or backward blocking signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal* . Enter the minimum time that a received forward or backward on-hook (idle) signal continues for detection as a recovery signal. Enter the time in 10-ms intervals. This signal allows the trunk to return to the idle state. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RMINUBL	0 to 6000	*Receive minimum unblocking signal*. Enter the minimum time that a received forward or backward unblocking signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	SMINBLO	0 to 6000	*Send minimum blocking signal*. Enter the minimum time that a backward blocking signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time that a backward idle signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 5 (50 ms).

LNSIGSYS type NTLS07 outgoing

Signaling type NTLS07 outgoing

This section describes the datafill that the operating company can define for the NTLS07 outgoing signaling system.

One-way outgoing applications from a DMS-200 to end offices use outgoing NTLS07 signaling systems. The operation is the same as wink signaling. This operation includes the end-of-selection (EOS), start ringing (SRG) and break-in-request (BIR) signals. This line signaling system uses A-bit signaling for all standard telephony signals except SRG and BIR signals. The SRG and BIR signals use B-bit signaling. The EOS, SRG and BIR signals make this line signaling system compatible with NTLS05. The B-bit also blocks and unblocks signals.

Datafill

The datafill for table LNSIGSYS type NTLS07 outgoing appear in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The table can contain a maximum number of 16 line signaling indexes.
SIGTYPE		NTLS07	*Signaling type*. Enter NTLS07 for the NTLS07 signaling type.
LSSINFO		refer to refinements	*Line signaling system information*. Descriptions of the refinements that this field has follows.

LNSIGSYS type NTLS07 outgoing (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time for the detection of any line signal. Enter the time in units of 2 ms. The system does not recognize a line signal that continues for less than 40 ms. When the entry value is not 20, table control sets the field to 20. The following warning message appears: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms). Default value: 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 1
	BIDLPOL	0 or 1	*B-bit idle polarity*. Enter the polarity of the B-bit when idle. Default value: 1
	SIGDIR	OG	*Signaling direction*. Enter OG for the outgoing signaling direction.
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that the forward seize signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 20 (200 ms).
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time that the clear forward signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS07 outgoing (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time that a sent clear forward or a received release guard signal continues to guarantee the far-end disconnection. Enter the time in 10-ms intervals. Recommended range: 10 to 200 (100 ms to 2 s). Default value: 70 (700 ms).
	RPTSDEL	0 to 6000	*Receive PTS delay*. Enter the delay time before the start of a scan for the proceed-to-send (PTS) signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RPTSTMO	0 to 6000	*Receive PTS time-out*. Enter the maximum time to wait for the reception of a PTS signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 500 (5 s).
	RMINPTS	8 to 20	*Receive minimum PTS signal*. Enter the minimum length of a received backward PTS signal pulse (wink). Enter the time in 10-ms intervals. Recommended range: 8 to 20 (80 to 200 ms) . Default value: 10 (100 ms).
	RMAXPTS	20 to 35	*Receive maximum PTS signal*. Enter the maximum length of a received backward PTS signal pulse (wink). Enter the time in 10-ms intervals. Recommended range: 20 to 35 (200 to 350 ms). Default value: 35 (350 ms).
	OUTPDEL	0 to 6000	*Outpulse delay*. Enter the time to delay before outpulsing begins. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 7 (70 ms).

LNSIGSYS type NTLS07 outgoing (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RANSDEL	0 to 6000	*Receive answer delay*. Enter the maximum delay that follows an outpulse before the scan for the answer signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 20 (200 ms).
	SFOTTM	5 to 50	*Send forward transfer pulse time*. Enter the length of the ring forward wink signal sent forward. Enter the time in 10-ms intervals. This signal is like the start ringing (SRG) and break-in-request (BIR) signals. Recommended range: 5 to 50 (50 to 500 ms). Default value: 12 (120 ms).
	SFOTTM2	5 to 50	*Send forward transfer time*. Enter the length that the trailing edge of the ring forward wink signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 5 to 50 (50 to 500 ms). Default value: 10 (100 ms).
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time that the backward release guard signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 3 (30 ms).
	RMINLCKO	0 to 6000	*Receive minimum lockout signal*. Enter the minimum time that a received backward off-hook signal continues for detection as a lockout signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS07 outgoing (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINRCVY	0 to 6000	*Receive minimum recovery signal* . Enter the minimum time that a received forward or backward on-hook (idle) signal continues for detection as a recovery signal. Enter the time in 10-ms intervals. Enter the time. This signal allows the trunk to return to the idle state. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms)
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that a received forward or backward blocking signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms)
	RMINUBL	0 to 6000	*Receive minimum unblocking signal*. Enter the minimum time that a received forward or backward unblocking signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time that a backward idle signal continues for detection. Enter in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 5 (50 ms).

Signaling type NTLS08 incoming

This section describes the datafill that the operating company can define for the NTLS08 incoming signaling system.

The NTLS08 incoming signaling system is for the use of one-way incoming applications that use E&M signaling. These applications are from VISA to DMS-200. The operation of the NTLS08 and the NTLS04 for incoming signals is similar. The operation uses a wink for the proceed-to-send (PTS) and does not have end-of-digits (EOD) signal. Telephony signals in the protocol of this line signaling system use A-bit signaling.

Datafill

The datafill for table LNSIGSYS type NTLS08 incoming appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index defined by the operating company. This field is the key to table LNSIGSYS. The table can contain a maximum number of 16 line signaling indexes.
SIGTYPE		NTLS08	*Signaling type* . Enter NTLS08 for the NTLS08 signaling type.
LSSINFO		refer to refinements	*Line signaling system information*. Descriptions of the refinements that this field has follow.
	FILTERTM	20	*Filter time*. Enter 20 for the minimum signal duration time for the detection of a line signal. Enter the time in units of 2 ms. The system does not recognize a line signal that continues for less than 40 ms. When the entry value is not 20, table control sets the field to 20. The following warning message appears: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms). Default value: 20 (40 ms).

LNSIGSYS type NTLS08 incoming (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 0
	SMINIDL	0 to 6000	*Send minimum idle signal* . Enter the minimum time that an idle signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	LSSDIR	IC, OG, or 2W	*Line signaling system direction*. Enter the signaling direction of the trunk. Enter IC for incoming, OG for outgoing or 2W for two-way.
	SIGDIR	IC	*Signaling direction*. Enter IC for the incoming signaling direction. Default value: IC
	SPTSTM	10 to 35	*Send PTS off-hook timing*. Enter the time to maintain the sent backwards proceed-to-send (PTS) signal (the off-hook wink start pulse). Enter the time in 10-ms intervals. Recommended range: 10 to 35 (100 to 350 ms) . Default value: 20 (200 ms).
	SPTSTM2	0 to 6000	*Send PTS on-hook timing*. Enter the time to maintain the end of the sent backwards PTS signal pulse. Enter the time in 10-ms intervals. This is the time to maintain on-hook after the off-hook wink start pulse. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time to continue the backward answer (ANS) signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS08 incoming (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 16 (160 ms).
	SMINRLG	0 to 6000	*Send minimum release guard signal*. Enter the minimum time to maintain the backward release guard signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 16 (160 ms).
	SMINRMB	0 to 6000	*Send minimum remote make busy*. Enter the minimum duration of the sent remote make busy signal. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RMINSZG	0 to 200	*Receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 200 (0 to 2 s). Default value: 10 (200 ms).
	RMINCLF	1 to 1000	*Receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal continues for detection. Enter in 10-ms intervals. Recommended range: 1 to 1000 (10 ms to 10 s). Default value: 16 (160 ms).

LNSIGSYS type NTLS08 incoming (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RCLFTMO	0 to 6000	*Receive clear forward time-out*. Enter the maximum time that the trunk waits for a received clear forward (CLF) signal or a reanswer (RAN) signal. Enter the time in 10-ms intervals. These signals follow a sent clear back (CLB) signal. This value is the incoming lockout time when the following occurs: • the originator receives the CLB • the receipt of a CLF in return does not occur • the reception of a RAN from the terminator does not occur An entry of 0 indicates timing is not present and the maximum wait time is without limit. Recommended range: 0 to 6000 (0 to 60 s). Default value: 3000 (30 s).
	RANSTIMR	0 to 6000	*Receive answer timer*. Enter the minimum time that the answer signal continues for detection. Enter the time in 10-ms intervals. Recommended range: 0 to 6000 (0 to 60 s). Default value: 20 (200 ms).

Signaling type NTLS08 outgoing

Datafill the operating company can define for the NTLS08 outgoing signaling system appears in this section.

The NTLS08 outgoing signaling system is for one-way outgoing applications where E&M signaling is in use. This one-way outgoing is from a DMS-200 to VISA. This system is like NTLS03 for outgoing signals. This system does not have B-bit signals. Telephony signals in the protocol of this line signaling system use A-bit signaling only.

Datafill

Datafill for table LNSIGSYS type NTLS08 outgoing appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS08	*Signalingtype*. Enter NTLS08 for the NTLS08 line signaling type.
LSSINFO		refer to refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time, in units of 2 ms, to detect a line signal. The system does not recognize a line signal that persists for less than 40 ms. If the value you enter is not 20, table control sets the field to 20. The following warning message appears: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms). Default value: 20 (40 ms).

LNSIGSYS type NTLS08 outgoing (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 0
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time, in 10 ms intervals, to maintain an idle signal. The time must allow the system to recognize the signal Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	LSSDIR	IC, OG, or 2W	*Line signaling system direction*. Enter the signaling direction of the trunk. Enter IC for incoming, OG for outgoing or 2W for two-way.
	SIGDIR	OG	*Signaling direction*. Enter OG for the outgoing signaling direction. Default value: IC
	SMINSZG	0 to 6000	*Send minimum seize signal* . Enter the minimum time, in 10 ms intervals, to maintain the forward seize signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time, in 10 ms intervals, to maintain the forward clear forward signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 16 (160 ms).
	RANSDEL	0 to 6000	*Receive answer delay*. Enter the maximum delay after outpulsing, in 10 ms intervals, before the system scans for the answer signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 20 (200 ms).

LNSIGSYS type NTLS08 outgoing (end)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time, in 10 ms intervals, to maintain the backward release guard signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 16 (160 ms).
	RMINLCKO	0 to 6000	*Receive minimum lockout signal*. Enter the minimum time, in 10 ms intervals, to maintain a received backward off-hook signal. The time must allow the system to recognize the signal as a lockout signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal* . Enter the minimum time, in 10 ms intervals, to maintain a received forward on-hook, idle, signal. The time must allow the system to recognize the signal. This action allows the trunk to return to an idle state. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time, in 10 ms intervals, to wait before you return the line to an idle state after the call clears. Recommended range: 10 to 200 (100 ms to 2 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS09 incoming

Signaling type NTLS09 incoming

Datafill the operating company defines for the NTLS09 incoming signaling system appears in this section.

The NTLS09 incoming signaling system is for one-way incoming direct current (dc) loop signaling trunks. These trunks support malicious call trace for the Turkish network. The signaling system is in use between the DMS-100 local offices and the DMS-100 offices that connect to non-DMS-100 local offices. Telephony signals in the protocol of this line signaling system use A-bit and B-bit signaling.

Datafill

Datafill for table LNSIGSYS type NTLS09 incoming appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric 1 to 16 characters	*Line signaling index*. Enter the signaling system index the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS09	*Signaling type*. Enter NTLS09 for the NTLS09 signaling type.
LSSINFO		refer to refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time, in units of 2 ms, to detect a line signal. The system does not recognize a line signal that persists for less than 40 ms. If the value you enter is not 20, table control sets the field to 20. The following warning message appears: FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED. Recommended setting: 20 (40 ms). Default value: 20 (40 ms).

LNSIGSYS type NTLS09 incoming (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 1
	BIDLPOL	0 or 1	*B-bit idle polarity*. Enter the polarity of the B-bit when idle. Default value: 1
	LSSDIR	IC, OG, or 2W	*Line signaling system direction*. Enter the signaling direction of the trunk. Enter IC for incoming, OG for outgoing or 2W for two-way.
	SIGDIR	IC	*Signaling direction*. Enter IC for the incoming signaling direction. Default value: OG
	SIDLTM	0 to 6000	*Send minimum backward idle signal*. Enter the minimum time, in 10 ms intervals, to maintain a backward idle signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s) Default value: 10 (10 ms).
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time, in 10 ms intervals, to maintain a received blocking signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal*. Enter the minimum time, in 10 ms intervals, to maintain a received forward or backward on-hook (idle) signal. The time must allow the system to recognize the signal. This action allows the trunk to return to the idle state. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS09 incoming (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RMINUBL	0 to 6000	*Receive minimum unblocking signal*. Enter the minimum time, in 10 ms intervals, to maintain a received backward unblocking signal, for the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	SWNKTM	0 to 6000	*Send wink off-hook time*. Enter the minimum time, in 10 ms intervals, to maintain the off-hook allocation of the wink signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 15 (150 ms).
	SWNKTM2	0 to 6000	*Send wink on-hook time*. Enter the minimum time, in 10 ms intervals, to maintain the on-hook part of the wink signal. Recommended range: 0 to 6000 (0 to 60). Default value: 1 (10 ms).
	SDCRTM	0 to 6000	*Send destination control request pulse time*. Enter the minimum time, in 10 ms intervals, to maintain the off-hook part of the destination control request signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SANSTM	0 to 6000	*Send answer time*. Enter the minimum time, in 10 ms intervals, to maintain the sent answer signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SMCTTM	0 to 6000	*Send malicious call trace time*. Enter the minimum time, in 10 ms intervals, to maintain the sent malicious call trace signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS09 incoming (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SCLBTM	0 to 6000	*Send clear back time*. Enter the minimum time, in 10 ms intervals, to maintain the backward clear back signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SRLGTM	0 to 6000	*Send release guard time*. Enter the minimum time, in 10 ms intervals, to maintain the backward release guard signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	SBLOTM	0 to 6000	*Send blocking signal time*. Enter the minimum time, in 10 ms intervals, to maintain the backward blocking signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RMINSZG	0 to 200	*Receive minimum seize signal*. Enter the minimum time, in 10 ms intervals, to maintain a received forward seize signal. The time must allow the system to recognize the signal. Recommended range: 0 to 200 (0 to 2 s). Default value: 20 (200 ms).
	RMINCLF	1 to 1000	*Receive minimum clear forward signal*. Enter the minimum time, in 10 ms intervals, to maintain a received clear forward signal. The time must allow the system to recognize the signal. Recommended range: 1 to 1000 (10 ms to 10 s). Default value: 21 (210 ms).

LNSIGSYS type NTLS09 outgoing

Signaling type NTLS09 outgoing

Datafill the operating company defines for the NTLS09 outgoing signaling system appears in this section.

The NTLS09 outgoing signaling system is for one-way outgoing direct current (dc) loop signaling trunks. These trunks support malicious call trace for the Turkish network. This signaling system is in use between DMS-100 local offices and DMS-100 offices. These offices connect to non-DMS-100 local offices. Telephony signals in the protocol of this line signaling system use A-bit and B-bit signaling.

Datafill

Datafill for table LNSIGSYS type NTLS09 outgoing appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric 1 to 16 characters	*Line signaling index*. Enter the signaling system index the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS09	*Signaling type*. Enter NTLS09 for the NTLS09 signaling type.
LSSINFO		refer to refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time, in units of 2 ms, to detect a line signal. The system does not recognize a line signal that persists for less than 40 ms. If the value you enter is not 20, table control sets the field to 20. The following warning message appears: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms). Default value: 20 (40 ms).

LNSIGSYS type NTLS09 outgoing (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. Default value: 1
	BIDLPOL	0 or 1	*B-bit idle polarity*. Enter the polarity of the B-bit when idle. Default value: 1
	LSSDIR	IC, OG, or 2W	*Line signaling system direction*. Enter the signaling direction of the trunk. Enter IC for incoming, OG for outgoing, or 2W for two-way.
	SIGDIR	OG	*Signaling direction*. Enter OG for the outgoing signaling direction. Default value: OG
	SIDLTM	0 to 6000	*Send minimum backward idle signal*. Enter the minimum time, in 10 ms intervals, to maintain a backward idle signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (10 ms).
	RMINBLO	0 to 6000	*Receive minimum blocking signal.* Enter the minimum time, in 10 ms intervals, to maintain a received B-bit blocking signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal*. Enter the minimum time, in 10 ms intervals, to maintain a received forward or backward on-hook (idle signal). The time must allow the system to recognize the signal. This action allow the trunk to return to the idle state. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS09 outgoing (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINUBL	0 to 6000	*Receive minimum unblocking signal.* Enter the minimum time, in 10 ms intervals, to maintain a received B-bit unblocking signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms).
	SSZGTM	0 to 6000	*Send seize signal time*. Enter the minimum time, in 10 ms intervals, to maintain the forward seize signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 1 (10 ms).
	SCLFTM	0 to 6000	*Send clear forward signal time*. Enter the minimum time, in 10 ms intervals, to maintain the clear forward signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RMINWNK	8 to 20	*Receive minimum wink signal*. Enter the minimum time, in 10 ms intervals, to maintain a received backward wink (proceed-to-send) signal. The time must allow the system to recognize the signal. Recommended range: 8 to 20 (80 to 200 ms). Default value: 10 (100 ms).
	RMAXWNK	20 to 35	*Receive maximum wink*. Enter the maximum time, in 10 ms intervals, to maintain a received backward wink signal. The time must allow the system to recognize the signal. Recommended range: 20 to 35 (200 to 350 ms). Default value: 35 (350 ms).
	RWNKTMO	0 to 6000	*Receive wink time-out*. Enter the maximum time, in 10 ms intervals, to wait for receipt of a backward wink signal. This action occurs after a seizure signal transmits and after the time field RWNKDEL specifies. Recommended range: 0 to 6000 (0 to 60 s). Default value: 500 (5 s).

LNSIGSYS type NTLS09 outgoing (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINDCR	8 to 20	*Receive minimum destination control request*. Enter the minimum length, in 10 ms intervals, of a received backward destination control request pulse. Recommended range: 8 to 20 (80 to 200 ms). Default value: 8 (80 ms).
	RMAXDCR	20 to 35	*Receive maximum destination control request. Enter the maximum length, in 10 ms interval*s, of a received backward destination control request pulse. Recommended range: 20 to 35 (200 to 350 ms). Default value: 20 (200 ms).
	OUTPDEL	0 to 6000	*Outpulse pulse delay*. Enter the delay, in 10 ms intervals, before you start outpulsing after the wink, proceed-to-send, signal is received. Recommended range: 0 to 6000 (0 to 60 s). Default value: 7 (70 ms).
	RANSDEL	0 to 6000	*Receive answer delay*. Enter the maximum delay following outpulsing, in 10 ms intervals, before the system scans for the answer signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 20 (200 ms).
	RMINRAN	0 to 6000	*Receive minimum reanswer signal*. Enter the minimum time, in 10 ms intervals, to maintain a received backward reanswer signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 3 (30 ms).
	RMINMCT	0 to 6000	*Receive minimum malicious call trace signal*. Enter the minimum time, in 10 ms intervals, to maintain the malicious call trace signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

LNSIGSYS type NTLS09 outgoing (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMCTRLS	0 to 6000	*Receive minimum malicious call trace release signal*. Enter the minimum time, in 10 ms intervals, to maintain the malicious call trace release signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 50 (500 ms)
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time, in 10 ms intervals, to maintain the backward release guard signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 3 (30 ms).
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time, in 10 ms intervals, to maintain a sent clear forward or a received release guard signal. This time guarantees the far-end disconnection. Recommended range: 10 to 200 (100 ms to 2 s). Default value: 70 (700 ms).
	RMINLCKO	0 to 6000	*Receive minimum lockout signal*. Enter the minimum time, in 10 ms intervals, to maintain a received backward off-hook signal. The time must allow the system to recognize the signal. Recommended range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).

Signaling type NTLS10

This section describes the datafill that the operating company can define for the NTLS10 signaling system.

The outgoing and incoming trunks that use loop disconnect signaling use the NTLSI0 signaling system. The interworking on the Caribbean expansion project (CEP) requires this signaling system.

Loop disconnect signaling is a way to transmit supervisory and address information on a trunk circuit. The interworking process uses NTLS20 signaling system. Use of this signaling system occurs between step-by-step (SXS) equipment and the DMS-100 central office through an Ericsson channel bank.

Loop disconnect signaling is a two-wire direct current (dc) continuous signaling system of the immediate-start type.

The system derives signals from the on-hook and off-hook conditions of the subscriber telephone set. This action results in a series of loops and disconnections. When the customer picks up the receiver, an off-hook condition results. This process forms a loop that allows current to flow. Each dialed digit results in on-hook pulses that represent the digit. On-hook pulses are break pulses.

An interdigit pause (IDP) indicates the end of a train of pulses. The end of a train of pulses can be the end of a digit. An example of an IDP is an off-hook signal of greater time than the make time between pulses.

The originator is the controlling party in this application. A clear-back signal from the terminator has a time-out value on reanswer. If the originator remains off-hook after the clear-back signal, the terminating party can establish the call again. The establish the call again, the terminating party must go off-hook before the time-out value expires. The off-hook condition results when the terminating party answers the call again. If the time-out limit expires, the system force-clears the call.

This digital application uses A-bits and B-bits to receive and transmit digital codes. The A-bits and B-bits are part of an ABCD-bit facility in time slot 16 of a PCM30 system. A primary multiplexer converts the outgoing digital codes to three-wire analog signals. The primary multiplexer also converts the incoming signals to three-wire analog signals. A primary multiplexer is a channel bank.

LNSIGSYS type NTLS10 (continued)

This digital installation does not use the C-bits and D-bits to receive and transmit digital codes. These C-bits and D-bits are set to 11.

Note: Manual hold (MHD) uses the C-bit.

The primary multiplexer performs analog and digital conversion as follows:

- digital code → analog signal
- analog signal → διγιταλ χοδε

For example, the digital code for a line seizure can transmit over the A-bits and B-bits. When this digital code transmits over these bits, a signal from circuit idle to circuit seized occurs. The signal changes from on-hook to off-hook.

Line signals normally continue because this signaling system is continuous signaling system. Outgoing and incoming circuits require only minimum timing.

Datafill

Datafill for table LNSIGSYS type NTLS10 appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index. The operating company defines this index. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS10	*Signaling type*. Enter NTLS10 for the NTLS10 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements. Descriptions of these refinements follow.

LNSIGSYS type NTLS10 (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time for the detection of any line signal. The time is in units of 2 ms. The system does not recognize any line signal that persists for less than 40 ms. If you do not enter the value 20, table control sets the field to 20. Table control generates the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms) Default value: 20 (40 ms)
	DIRECTION	see subfields	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	IC or OG	*Signaling direction*. Enter IC for the incoming signaling direction. You do not need to enter data in any refinements. Enter OG for the outgoing signaling direction. Enter data in the following refinements: • ORMNANS • ORMNCLB • ORMNBLK • ORMNUBK • ORMXCLB • ORMNSZA • ORMXSZA • ORMXRAN • ORMNMHD A description of this process follows. Default value: OG

LNSIGSYS type NTLS10 (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	ORMNANS	50 to 1000	*Outgoing receive minimum answer signal recognition time*. Enter the minimum maintenance time in which the recognition of an answer signal can occur. This time is in 2-ms intervals Recommended range: 50 to 1000 (100 ms to 2 s). Default value: 50 (100 ms)
	ORMNCLB	50 to 1000	*Outgoing receive minimum clear back signal*. Enter the minimum maintenance time in which the recognition of a received clear-back signal can occur. This time is in 2-ms intervals. Recommended range: 50 to 1000 (100 ms to 2 s). Default value: 50 (100 ms)
	ORMNBLK	250 to 2500	*Outgoing receive minimum blocking signal*. Enter the minimum time of maintenance in which the recognition of a received blocking signal can occur. This time is in 2-ms intervals Recommended range: 250 to 2500 (500 ms to 5 s). Default value: 500 (1 s)
	ORMNUBK	250 to 2500	*Outgoing receive minimum unblocking signal .* Enter the minimum maintenance time in which the recognition of a received unblocking signal can occur. This time is in 2-ms intervals. Recommended range: 250 to 2500 (500 ms to 5 s) . Default value: 500 (1 s)
	ORMXCLB	50 to 1000	*Outgoing receive maximum clear back signal* . Enter a maximum wait time. This time is in 2-ms intervals. This time is the time that the system must wait between the transmission of a clear-forward signal and the clear back signal. If the time expires and the system does not receive a clear back signal, the system assumes the circuit has faults. Recommended range: 50 to 1000 (100 ms to 2 s) . Default value: 350 (700 ms)

LNSIGSYS type NTLS10 (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	ORMNSZA	50 to 1000	*Outgoing receive minimum seize acknowledge*. Enter the minimum maintenance time in which the recognition of a seize-acknowledge signal can occur. This time is in 2-ms intervals Recommended values: 50 to 100 (100 to 200 ms) . Default value: 50 (100 ms)
	ORMXSZA	50 to 1000	*Outgoing receive maximum seize-acknowledge*. Enter the maximum time that the system must wait for the reception of a seize-acknowledge signal. This time is in 2-ms intervals. Recommended range: 50 to 1000 (100 ms to 2 s) . Default value: 350 (700 ms)
	ORMXRAN	500 to 30000	*Outgoing receive maximum reanswer*. Enter the maximum time that the system must wait for a reanswer. This time is in 2-ms intervals. If the reanswer does not occur before this time expires, the system force-clears the call. Recommended range: 500 to 30000 (1 to 60 s) . Default value: 5000 (10 s)
	ORMNHLD	50 to 1000	*Outgoing receive minimum manual hold*. Enter the minimum maintenance time in which the recognition of a manual hold signal can occur. This time is in 2-ms intervals. Recommended range: 50 to 1000 (100 ms to 2 s) . Default value: 50 (100 ms)

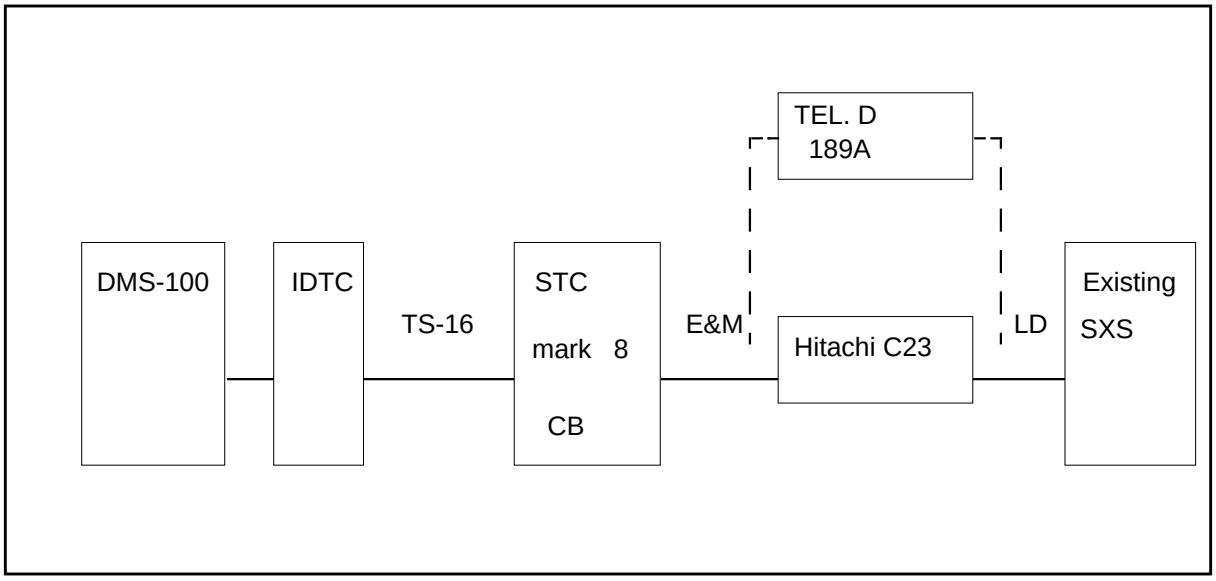
LNSIGSYS type NTLS11 incoming

Signaling type NTLS11 incoming

Datafill that the operating company defines for the NTLS11 incoming signaling system appears in this section.

The NTLS11 signaling system is for incoming and outgoing trunks that use E&M signaling. The NTLS11 signaling system does not support two-way E&M trunks. Interworking in the Caribbean expansion project requires E&M signaling. The E&M signaling functions first with a signaling terminal controller (STC) mark 8 channel bank (CB). The interworking in the Caribbean expansion project appears inthe follwoing figure.

Interworking in the Carribean expansion project



The system converts the digital codes in time slot 16 (TS-16) of the PCM30 international digital trunk controller (IDTC) system to E&M signals. This conversion occurs in the channel bank. The TEL.D or Hitachi converters convert the E&M signals to loop disconnect signals for the step-by-step (SXS) exchange.

The line signals are digitized E&M type encoded in time slot 16 of the PCM30 system. The register signals are dial pulses. The system transmits and receives these dial pulses in time slot 16.

The analog interface is a four-wire E&M channel unit in the STC mark 8 channel bank. The system conveys the dial pulses on the M (transmit) lead for

outpulsing from the DMS. The system conveys the dial pulses on the E (receive) lead for reception from the SXS.

The system derives the signals the on-hook and off-hook conditions of the telephone set of the subscriber. The conditions on the E&M leads for on-hook and off-hook conditions appear in the follwing table . The E&M leads are on the analog side of the multiplexer.

On- and off-hook E&M signaling conditions

Conditions	M lead	E lead
On-hook	Open	Open
Off-hook	Earth	Earth

A TEL.D 189A or a Hitachi C23 SA-2BWT converter converts the E&M signals to loop disconnect signals. The system sends these signals to the SXS exchange.

In this digital implementation, the system only transmits and receives the codes on the A-bit of the ABCD-bit facility. This ABCD-bit facility is in time slot 16 of the PCM30 system. The channel bank converts the outgoing digital codes to M lead analog signals. The channel bank converts the incoming E lead signals to the digital codes for the DMS. The value of the B-bits, C-bits, and D-bits are always 1, 0, and 1, in this order. The digital codes the STC mark 8 channel bank uses, appear in the following table.

Codes used by the STC mark 8

Conditions	Transmit ABCD	Receive ABCD
On-hook	1101	1101
Off-hook	0101	0101

LNSIGSYS type NTLS11 incoming (continued)

Datafill

Datafill for table LNSIGSYS type NTLS11 incoming appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric 1 to 16 characters	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. You can add a maximum number of 16 line signaling indexes to this table.
SIGTYPE		NTLS11	*Signaling type*. Enter NTLS11 for the NTLS11 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that follow.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time to detect any line signal. This signal duration time is in units of 2 ms. The system does not recognize a line signal that continues for less than 40 ms. If you do not enter a value of 20, table control sets the field to 20. The following warning message appears: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` Recommended setting: 20 (40 ms). Default value: 20 (40 ms).
	IDLEPOL	0 or 1	*Idle A-bit polarity*. Enter the polarity of the idle A-bit. Default value: 1
	DIRECTION	see subfields	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	IC	*Signal direction*. Enter IC for the incoming signaling direction.

LNSIGSYS type NTLS11 incoming (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	IRMNSZG	50 to 1000	*Incoming receive minimum seize signal*. Enter the minimum time that a received forward seize signal must occur for the system to recognize the signal. This time is in 2 ms intervals. Recommended range: 50 to 1000 (100 ms to 2 s). Default value: 100 (200 ms).
	IRMNCLF	50 to 1000	*Incoming receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal must occur for the system to recognize the signal. This time is in 2 ms intervals. Recommended range: 50 to 1000 (100 ms to 2 s). Default value: 100 (200 ms).

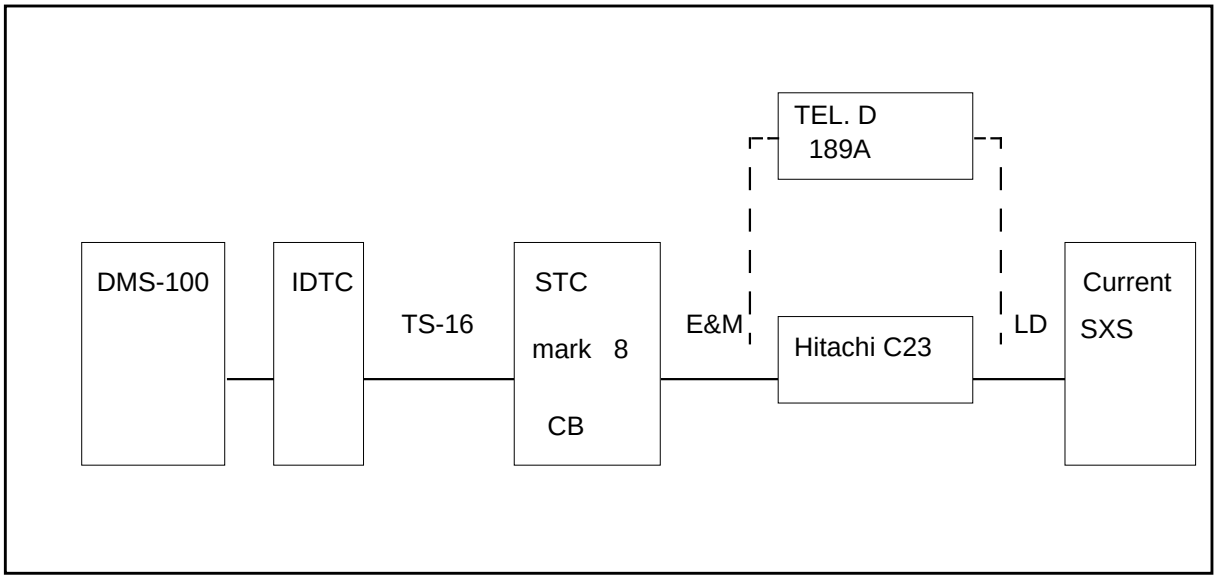
LNSIGSYS type NTLS11 outgoing

Signaling type NTLS11 outgoing

Datafill the operating company can define for the NTLS11 outgoing signaling system appears in this section.

The NTLS11 signaling system is for incoming and outgoing trunks that use E&M signaling. The system does not support two-way E&M trunks. The E&M signaling is a requirement for interworking in the Caribbean expansion project. The E&M signaling is in use with an signaling terminal controller (STC) mark 8 channel bank (CB) first. The interworking appears in the following figure.

Interworking in the Carribean expansion project



The digital codes in time slot 16 (TS-16) of the PCM30 international digital trunk controller (IDTC) system convert to E&M signals in the channel bank. The TEL.D or Hitachi converters convert the E&M signals to loop disconnect signals for the step-by-step (SXS) exchange.

The line signals are digitized E&M type that are coded in time slot 16 of the PCM30 system. The register signals are dial pulses that time slot 16 transmits and receives.

The analog interface is a four-wire E&M channel unit in the STC mark 8 channel bank. The dial pulses are conveyed on the M, transmit, lead for

outpulsing from the DMS. The dial pulses are conveyed on the E, receive, lead for reception from the SXS.

The signals come from the on-hook and off-hook conditions of the telephone set of the subscriber. The conditions of the E&M leads appear in table 1. The E&M leads are on the analog side of the multiplexer, for on-hook and off-hook conditions.

On-hook and off-hook E&M signaling conditions

Conditions	M lead	E lead
On-hook	Open	Open
Off-hook	Earth	Earth

A TEL.D 189A or a Hitachi C23 SA-2BWT converter converts the E&M signals. The converters convert the E&M signals to loop disconnect signals that go to the SXS exchange.

In this digital application, the A-bit of the ABCD-bit facility transmits and receives the codes. The ABCD facility is in time slot 16 of the PCM30 system. The channel bank converts the outgoing digital codes into M lead analog signals. The channel bank converts the incoming E lead signals to the digital codes for the DMS. The B-bits, C-bits and D-bits are set to 1, 0 and 1, in that order. The digital codes that the STC mark 8 channel bank uses appear in the following table.

Codes used by the STC mark 8

Conditions	Transmit ABCD	Receive ABCD
On-hook	1101	1101
Off-hook	0101	0101

LNSIGSYS type NTLS11 outgoing (continued)

Datafill

Datafill for table LNSIGSYS type NTLS11 outgoing appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric 1 to 16 characters	*Line signaling index*. Enter the signaling system index the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS11	*Signaling type*. Enter NTLS11 for the NTLS11 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time to detect any line signal. The time is in units of 2 ms. The system does not recognize a line signal that occurs for less than 40 ms. If the value you enter is not 20, table control sets the field to 20 and gives the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20, 40 ms. The default value is 20, 40 ms.
	IDLEPOL	0 or 1	*Idle A-bit polarity*. Enter the polarity of the A-bit when idle. Default value: 1
	DIRECTION	see subfields	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	OG	*Signal direction*. Enter OG for the outgoing signaling direction.

LNSIGSYS type NTLS11 outgoing (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ORMNANS	50 to 1000	*Outgoing receive minimum answer signal recognition time*. Enter the minimum time the answer signal must occur. The time is in 2-ms intervals for the system to recognize the signal. The recommended range is 50 to 1000, 100 ms to 2 s. The default value is 100, 200 ms.
	ORMNCLB	50 to 1000	*Outgoing receive minimum clear back signal*. Enter the minimum duration time before the system recognizes a clear back signal. The time is in 2-ms intervals. The recommended range is 50 to 1000, 100 ms to 2 s. The default value is 100, 200 ms.
	ORMNBLK	50 to 1000	*Outgoing receive minimum blocking signal*. Enter the minimum time a received blocking signal must occur for the system to recognize the signal. The time is in 2-ms intervals. The recommended range is 50 to 1000, 100 ms to 2 s. The default value is 500, 1 s.
	ORMNUBK	50 to 1000	*Outgoing receive minimum unblocking signal* . Enter the minimum time a received unblocking signal must occur for the system to recognize the signal. The time is in 2-ms intervals. The recommended range is 50 to 1000, 100 ms to 2 s. The default value is 500, 1 s.
	ORMNPSP	25 to 500	*Outgoing receive minimum presending pause* . Enter the minimum presending pause to allow for the operating delay of the SXS exchange. This action occurs after the system signals the seizure. The recommended value is 25 to 500, 50 ms to 1 s. The default value is 150, 300 ms.

LNSIGSYS type NTLS14

Signaling type NTLS14

The description of the datafill that the operating company can define for the NTLS14 signaling system appears in this section.

The semi-permanent connection trunks use the NTLS14 signaling system. The Caribbean expansion project and international switching units use this signaling system. This signaling type ignores the signaling parameters.

Datafill

Datafill for table LNSIGSYS type NTLS14 appears in the following table.

xxxField descriptions

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS15	*Signaling type*. Enter NTLS15 for the NTLS15 signaling type.
LSSINFO		see to refinement	*Line signaling system information*. This field contains refinement FILTERTM.
	FILTERTM	20	*Filter time*. Enter 20 for the minimum signal period time to detect any line signal. The value is in units of 2 ms. The system does not recognize a line signal that occurs for less than 40 ms. If the value you enter is not 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).

Signaling type NTLS15 incoming

The description of the datafill that the operating company can define for the NTLS15 incoming signaling system appears in this section.

The one-way incoming international traffic operator position (ITOPS) or metering (MTR) trunks use the NTLS15 incoming signaling system. The MTR trunks support operator control of disconnect, and not originator control. The MTR trunks support operator ringback and operator ring forward. International DMS-100 and international DMS-200 switching units use this signaling to implement international TOPS applications. This signaling system can support delay-dial start or wink start signals.

Datafill

Datafill for table LNSIGSYS type NTLS15 incoming appears in the following table.

Field descriptions (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS15	*Signaling type*. Enter NTLS15 for the NTLS15 signaling type.
LSSINFO		see to refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal period time to detect a line signal. Enter the signal period time in units of 2 ms. The system does not recognize line signal that occurs for less than 40 ms. If the value you enter is not 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).

LNSIGSYS type NTLS15 incoming (continued)

Field descriptions (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when the trunk is in the defined idle state. The default value is 1.
	DIRECTION	see to subfield	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	IC	*Signaling direction*. Enter IC for the incoming signaling direction. Default value: IC
	SIDLTM	0 to 6000	*Send minimum backward idle signal*. Enter the minimum time that a backward idle signal must continue for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	SFOTTM	5 to 50	*Send forward transfer pulse time*. Enter the length of the ring forward wink signal the system sends forward. Enter the length in 10 ms intervals. This signal has the same meaning as the start ringing and break in request signals. The recommended range is 5 to 50 (50 to 500 ms). The default value is 12 (120 ms).
	SFOTTM2	0 to 6000	*Send forward transfer time*. Enter the length that the ring-forward end of the wink signal the system sends forward occurs. Enter the length in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINFOT	0 to 6000	*Receive minimum forward transfer signal*. Enter the minimum time that a received forward transfer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. This signal has the same meaning as the start ringing and break-in-request signals. The recommended range is 1 to 20 (10 to 200 ms). The default value is 8 (80 ms).

LNSIGSYS type NTLS15 incoming (continued)

Field descriptions (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	RMAXFOT	0 to 6000	*Receive maximum forward transfer signal*. Enter the maximum time that a received forward signal must occur for the system to recognize the signal. Enter the maximum time in 10 ms intervals. This signal is the same as the start ringing and break-in-request signals. This field is for use in applications where the ring forward signal is a pulse. The entry in this field defines the upper time limit for the pulse. The recommended range is 10 to 50 (100 to 500 ms). The default value is 20 (200 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal*. Enter the minimum time a received forward or backward on-hook (idle) signal must occur to be recognized as a recovery signal. The recovery signal allows the trunk to return to the idle state. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time a sent clear forward or a received release guard signal must occur to guarantee the far-end disconnection. Enter the minimum time in 10 ms intervals. This value makes sure that the system does not idle the outgoing trunk before the incoming end completes the release sequence. The recommended range is 10 to 200 (100 ms to 2 s). The default value is 70 (700 ms).
	RMINRAN	0 to 6000	*Receive minimum reanswer signal*. Enter the minimum time that a received backward reanswer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 3 (30 ms)

LNSIGSYS type NTLS15 incoming (continued)

Field descriptions (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	SMINSZA	0 to 6000	*Send minimum backward seizure signal*. Enter the minimum time that a backward seize acknowledge signal, or delay-dial start, must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 3 (30 ms).
	SMINPTS	0 to 6000	*Send minimum backward PTS*. Enter the minimum time that a backward proceed-to-send (PTS) signal (delay-dial start) must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SPTSTM	10 to 35	*Send PTS off-hook timing*. Enter the time to maintain the sent backwards PTS signal, the off-hook wink start pulse. Enter the time in 10 ms intervals. The recommended range is 10 to 35 (100 to 350 ms). The default value is 15 (150 ms).
	SPTSTM2	0 to 6000	*Send PTS on-hook timing*. Enter the time to maintain the end of the sent backwards PTS signal pulse. The sent backwards PTS signal pulse is the time to maintain on-hook after the off-hook wink start pulse. Enter the time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time to maintain the backward answer signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS15 incoming (continued)

Field descriptions (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINRLG	0 to 6000	*Send minimum release guard signal*. Enter the minimum time to maintain the backward release guard signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SANIWK	14 to 30	*Send automatic number identification wink*. Enter the duration of the backward sent automatic number identification (ANI) request wink. Enter the duration in 10 ms intervals. The recommended range is 14 to 30 (140 to 3000 ms). The default value is 20 (200 ms).
	SANISETL	0 to 6000	*Post-automatic number identification send delay*. Enter the minimum time after the end of the ANI wink that the incoming end delays before the end sends the answer signal. The delay is a requirement. The delay allows analog facility transients to settle. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINRMB	0 to 6000	*Send minimum remote make busy*. Enter the minimum time of the sent remote make busy signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).

LNSIGSYS type NTLS15 incoming (end)

Field descriptions (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	RMINSZG	0 to 200	*Receive minimum seize signal*. Enter the minimum time that a received forward seize signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 200 (0 to 2 s). The default value is 20 (200 ms).
	RMINCLF	1 to 1000	*Receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 1 to 1000 (10 ms to 10 s). The default value is 21 (210 ms).

Signaling type NTLS15 outgoing

The description for the datafill that the operating company can define for the NTLS15 outgoing signaling system appears in this section.

One-way outgoing international traffic operator position systems (ITOPS) or metering (MTR) trunks use the NTLS15 outgoing signaling system. The MTR trunks support operator control of disconnect, operator ringback, and operator ring forward. The MTR trunks do not support originator control. International DMS-100 and international DMS-200 switching units use this signaling system to implement ITOPS applications. This signaling system can support delay-dial start or wink start signals.

Datafill

Datafill for table LNSIGSYS type NTLS15 outgoing appears in the following table.

Field descriptions (Sheet 1 of 7)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS15	*Signaling type*. Enter NTLS15 for the NTLS15 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time for the detection of any line signal. Enter the minimum signal duration time in units of 2 ms. The system does not recognize a line signal that occurs for less than 40 ms. If the value you enter is not 20, table control sets the field to 20. Table control gives the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).

LNSIGSYS type NTLS15 outgoing (continued)

Field descriptions (Sheet 2 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when the trunk is in the defined idle state. The default value is 1.
	DIRECTION	see subfields	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	OG	*Signaling direction*. Enter OG for the outgoing signaling direction. The default value is IC.
	SIDLTM	0 to 6000	*Send minimum backward idle signal*. Enter the minimum time that a backward idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (10 ms).
	SFOTTM	5 to 50	*Send forward transfer pulse time*. Enter the length of the ring forward wink signal the system sends forward. Enter the length in 10 ms intervals. This signal is the same as the start ringing and break-in-request signals. The recommended range is 5 to 50 (50 to 500 ms). The default value is: 12 (120 ms)
	SFOTTM2	0 to 6000	*Send forward transfer time* . Enter the time that the system maintains the ring forward end of a wink signal the system sends forward. Enter the length in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINFOT	0 to 6000	*Receive minimum forward transfer signal*. Enter the minimum time that a received forward transfer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. This signal is the same as the start ringing and break-in-request signals. The recommended range is 1 to 20 (10 to 200 ms). The default value is 8 (80 ms).

LNSIGSYS type NTLS15 outgoing (continued)

Field descriptions (Sheet 3 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	RMAXFOT	0 to 6000	*Receive maximum forward transfer signal*. Enter the maximum time that a received forward signal must occur for the system to recognize the signal. Enter the maximum time in 10 ms intervals. This signal is the same as the start ringing and break-in-request signals. This field is for use in applications where the ring forward signal is a pulse. The entry in this field defines the upper time limit for the pulse. The recommended range is 10 to 50 (100 to 500 ms). The default value is: 20 (200 ms).
	RMINRCVY	0 to 6000	*Receive minimum recovery signal* . Enter the minimum time that a received forward or backward on-hook (idle) signal must occur for the system to recognize the signal as a recovery signal. The recovery signal allows the trunk to return to the idle state. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	GUARDTM	10 to 200	*Guard time*. Enter the minimum time that the system maintains a sent clear forward or a received release guard signal. This action guarantees the far-end disconnection. Enter the minimum time in 10 ms intervals. This value makes sure that the outgoing trunk is not idle before the incoming end completes the release sequence. The recommended range is 10 to 200 (100 ms to 2 s). The default value is 70 (700 ms).
	RMINRAN	0 to 6000	*Receive minimum reanswer signal*. Enter the minimum time that a received backward reanswer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals The recommended range is 0 to 6000 (0 to 60 s). The default value is 3 (30 ms).

LNSIGSYS type NTLS15 outgoing (continued)

Field descriptions (Sheet 4 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that the forward seize signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms)
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time that the forward clear forward signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINPTS	0 to 6000	*Receive minimum PTS signal*. Enter the minimum time that a received backward proceed-to-send (PTS) signal pulse must occur for the system to recognize the signal. This event occurs after the PTS signal pulse receives a seize acknowledge (SZA) signal. Enter the minimum time in 10 ms intervals. This time allows the line transients to settle. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RMINSZA	0 to 6000	*Receive minimum seize acknowledge signal*. Enter the minimum time that the system must maintain a received backward SZA signal for recognition. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RSZATMO	0 to 6000	*Receive seize acknowledge time-out*. Enter the maximum time allowed to receive a backward SZA signal. This event follows the transmission of a seize signal. Enter the maximum time in 10 ms intervals. This value defines the time-out interval for a no-delay-dial or a no-integrity failure. The recommended range is 0 to 6000 (0 to 60 s). The default value is 500 (5 s).

LNSIGSYS type NTLS15 outgoing (continued)

Field descriptions (Sheet 5 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	RPTSTMO	0 to 6000	*Receive PTS time-out*. Enter the maximum time allowed to receive a backward PTS signal. Enter the maximum time in 10 ms intervals. This value defines the time-out interval for a no-start-dial fail condition. The recommended range is 0 to 6000 (0 to 60 s). The default value is 500 (5 s).
	RMINANS	0 to 6000	*Receive minimum answer*. Enter the minimum time that a received backward answer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 3 (30 ms). *Receive minimum clear back signal*. Enter the minimum time that a received backward clear back must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 30 (300 ms).
	RMINCLB	0 to 6000	
	RMINWNK	8 to 20	*Receive minimum wink signal*. Enter the minimum time that a received backward wink signal (PTS) must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 8 to 20 (80 to 200 ms). The default value is 10 (100 ms).
	RMAXWNK	20 to 35	*Receive maximum wink signal*. Enter the maximum time that a received backward wink signal (PTS) must occur for the system to recognize the signal. Enter the maximum time in 10 ms intervals. The recommended range: 20 to 35 (200 to 350 ms). The default value is 35 (350 ms).

LNSIGSYS type NTLS15 outgoing (continued)

Field descriptions (Sheet 6 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time that the backward release guard signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 30 (300 ms).
	RMINLCKO	0 to 6000	*Receive minimum lockout signal*. Enter the minimum time that a received backward off-hook signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RANIWMIN	10 to 16	*Receive automatic number identification wink minimum*. Enter the minimum time that a received Automatic Number Identification (ANI) wink signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 10 to 16 (100 to 160 ms). The default value is 14 (140 ms).
	RANIWMAX	20 to 35	*Receive automatic number identification wink maximum*. Enter the maximum time that a received ANI wink signal must occur for the system to recognize the signal. Enter the maximum time in 10 ms intervals. The recommended range is 20 to 35 (200 to 350 ms). The default value is 30 (300 ms).

LNSIGSYS type NTLS15 outgoing (end)

Field descriptions (Sheet 7 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	RANITMO	500 to 3000	*Receive automatic number identification time*. Enter the time that the outgoing end waits for an ANI request signal after the end outpulses the called digits. The ANI request signal is a wink-type signal. Enter the time in 10 ms intervals. If the outgoing end times out before the end receives the ANI request signal, the calling party routes to a treatment. Each route has datafill that defines the type of ANI request failure treatment the system. The datafill can be tone or announcement for each route. The recommended range is 500 to 3000 (5 to 30 s). The default value is 3000 (30 s).
	RANISETL	5 to 500	*Post-automatic number identification receive delay*. Enter the time that the outgoing end delays before the end sends the digits of the called number. Enter the time in 2 ms intervals. The delay is a requirement. The delay allows analog facility transients to settle. The recommended range is 25 to 2500 (50 ms to 5 s). The default value is 25 (50 ms).

LNSIGSYS type NTLS16 incoming

Signaling type NTLS16 incoming

The description of the datafill that the operating company defines for the NTLS16 incoming signaling system appears in this section.

The digital CCITT signaling system R2 (R2) trunk call processing uses the NTLS16 incoming signaling system on international DMS-100/200 switches in Morocco and Brazil. The NTLS16 uses both the A-bits and B-bits to support one-way operation. The NTLS16 does not use the C-bits and D-bits. The C-bit has a value of 0. The D-bit has a value of 1.

One-way operation

The NTLS16 signaling system operates on one-way trunks only. Table control prevents the entry of data in two-way trunks.

Meter pulses

The NTLS16 signaling system recognizes meter pulses during the conversation part of the call sequence. The DMS does not count the meter pulses. The DMS does not make the meter pulses available through a metering or billing system. The NTLS16 signaling system does not tandem the meter pulses across the switch. The NTLS16 signaling system does not generate metering pulses.

Datafill

Datafill for table LNSIGSYS type NTLS16 incoming appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS16	*Signaling type*. Enter NTLS16 for the NTLS16 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.

LNSIGSYS type NTLS16 incoming (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	5 to 63	*Filter time*. Enter the minimum signal duration time for the system to detect a line signal. Enter the minimum signal duration time in units of 2 ms. Any line signal that occurs for less than the datafilled filter time is not recognized. The recommended range is 5 to 63 (10 to 126 ms). The default value is 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. The default value is 1.
	BIDLPOL	0 or 1	*B-bit idle polarity*. Enter the polarity of the B-bit when idle. The default value is 0.
	DIRECTION	see subfield	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	IC	*Signaling direction*. Enter IC for the incoming signaling direction. The default value is IC.
	SMINIDLE	0 to 6000	*Send minimum idle signal*. Enter the minimum time for the system to maintain an idle signal for recognition. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINIDLE	0 to 6000	*Receive minimum idle signal*. Enter the minimum time that an idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).

LNSIGSYS type NTLS16 incoming (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINSZA	0 to 6000	*Send minimum backward seizure signal*. Enter the minimum time that a backward seize acknowledge signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time, in 10 ms intervals, that a backward answer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	SMINBLO	0 to 6000	*Send minimum blocking signal*. Enter the minimum time for the system to maintain a backward blocking signal for recognition. Enter the minimum value in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time for the system to maintain a received forward seize signal for recognition. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).

LNSIGSYS type NTLS16 incoming (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RMINCLF	0 to 6000	*Receive minimum clear forward signal*. Enter the minimum time for the system to maintain a received clear forward signal for recognition. Enter the minimum time in 10 ms intervals. The recommended range is 1 to 6000 (10 ms to 60 s). The default value is 30 (300 ms).
	RMINFLT	0 to 6000	*Received minimum fault signal*. Enter the minimum time for the system to maintain a received fault signal for recognition. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (zero).

LNSIGSYS type NTLS16 outgoing

Signaling type NTLS16 outgoing

The description of the datafill that the operating company can define for the NTLS16 outgoing signaling system appears in this section.

Digital CCITT signaling system R2 (R2) trunk call processing uses the NTLS16 outgoing signaling system on international DMS-100/200 switches in Morocco and Brazil. The NTLS16 line signaling uses the A-bits and B-bits to support one-way operation. The NTLS16 does not use the C-bit and the D-bits. The C-bit has a value of 0. The D-bit has a value of 1.

One-way operation

The NTLS16 signaling system operates on one-way trunks only. Table control prevents the entry of data in two-way trunks.

Meter pulses

The NTLS16 signaling system recognizes meter pulses during the conversation part of the call sequence. The DMS does not count the meter pulses. The DMS does not make the meter pulses available through a metering or billing system. The NTLS16 signaling system does not tandem the meter pulses across the switch. The NTLS16 does not generate metering pulses.

Datafill

Datafill for table LNSIGSYS type NTLS16 outgoing appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS16	*Signaling type*. Enter NTLS16 for the NTLS16 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.

LNSIGSYS type NTLS16 outgoing (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	5 to 63	*Filter time*. Enter the minimum signal duration time for the detection of any line signal. Enter the minimum signal duration time in units of 2 ms. The system does not recognize a line signal that occurs for less than the filter time entry. The recommended range is 5 to 63 (10 to 126 ms). The default value is 20 (40 ms).
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. The default value is 1.
	BIDLPOL	0 or 1	*B-bit idle polarity* . Enter the polarity of the B-bit when idle. The default value is 0 (zero).
	DIRECTION	see subfield	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	OG	*Signaling direction*. Enter OG for the outgoing signaling direction. The default value is IC.
	SMINIDLE	0 to 6000	*Send minimum idle signal*. Enter the minimum time that an idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINIDLE	0 to 6000	*Receive minimum idle signal*. Enter the minimum time that a received idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).

LNSIGSYS type NTLS16 outgoing (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that the forward seize signal must occur for the system to recognize the signal. Enter the minimum value in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINCLF	0 to 6000	*Send minimum clear forward signal* . Enter the minimum time that a clear forward signal must occur for the signal to recognize the signal. Enter the minimum value in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINSZA	0 to 6000	*Receive minimum seize acknowledge signal*. Enter the minimum time that a received backward seize acknowledge signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RSZATMO	0 to 6000	*Receive seize acknowledge time-out*. Enter the maximum time to wait for the reception of a seize acknowledge signal. This signal follows the transmission of a seize signal. Enter the maximum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 300 (3 s).
	RMINANS	0 to 6000	*Receive minimum answer*. Enter the minimum time that a received backward answer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).

LNSIGSYS type NTLS16 outgoing (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINCLB	0 to 6000	*Receive minimum clear back signal*. Enter the minimum time that a received clear back signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that a received blocking signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 50 (500 ms).
	RRLGTMO	0 to 6000	*Receive release guard time-out*. Enter the maximum time to wait before the system starts a repeat clear forward signal. This event occurs if reception of a release guard signal does not occur after transmission of a clear forward signal. Enter the maximum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 1000 (10 s).
	RMINFRLS	0 to 6000	*Receive minimum force release signal*. Enter the minimum time that a received force release signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms units. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS16 outgoing (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SMINFRLA	0 to 6000	*Send minimum force release acknowledge signal*. Enter the minimum time that a sent force release acknowledge signal must occur for the system to recognize the signal. Enter the minimum value in 10 ms units. The recommended range is 0 to 600 (0 to 60 s). The default value is 0 (0 ms).
	SMINFLT	0 to 6000	*Send minimum fault signal*. Enter the minimum time that a sent fault signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms units. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

Signaling type NTLS16 two-way

The description of the datafill that the operating company can define for the NTLS16 two-way signaling system appears in this section.

Digital CCITT signaling system R2 (R2) trunk call processing uses the NTLS16 two-way signaling system on international DMS-100/200 switches. The NTLS16 two-way signaling uses the A-bits and B-bits to support two-way operation. The NTLS16 does not use the C-bits and the D-bits. The C-bit has a value of 0. The D-bit has a value of 1.

Meter pulses

The NTLS16 signaling system recognizes meter pulses during the conversation part of the call sequence. The DMS does not count the meter pulses. The DMS does not make the meter pulses available through a metering or billing system. The NTLS16 signaling system does not tandem the meter pulses across the switch. The NTLS16 does not generate metering pulses.

Datafill

Datafill for table LNSIGSYS type NTLS16 two-way appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS16	*Signaling type*. Enter NTLS16 for the NTLS16 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	5 to 63	*Filter time*. Enter the minimum signal time for the detection of any line signal. Enter the minimum time in units of 2 ms. The system does not recognize a line signal that occurs for less than the filter time. The recommended range is 5 to 63 (10 to 126 ms). The default value is 20 (40 ms).

LNSIGSYS type NTLS16 two-way (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle polarity*. Enter the polarity of the A-bit when idle. The default value is 1.
	BIDLPOL	0 or 1	*B-bit idle polarity* . Enter the polarity of the B-bit when idle. The default value is 0 (zero).
	DIRECTION	see subfield	*Direction* . This field contains subfield SIGDIR.
	SIGDIR	2W	*Signaling direction*. Enter 2W for the two-way signaling direction. The default value is 2W.
	SMINIDLE	0 to 6000	*Send minimum idle signal*. Enter the minimum time that an idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINIDLE	0 to 6000	*Receive minimum idle signal*. Enter the minimum time that an idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	SMINSZA	0 to 6000	*Send minimum backward seizure signal*. Enter the minimum time that a backward seize acknowledge signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINANS	0 to 6000	*Send minimum answer signal* . Enter the minimum time that a backward answer signal must occur for the system to recognize the signal. Enter the minimum value in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).

LNSIGSYS type NTLS16 two-way (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	SMINBLO	0 to 6000	*Send minimum blocking signal* . Enter the minimum time that a backward blocking signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that a received forward seize signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).
	RMINCLF	0 to 6000	*Receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 1 to 6000 (10 ms to 60 s). The default value is 30 (300 ms).
	RMINFLT	0 to 6000	*Received minimum fault signal*. Enter the minimum time that a received fault signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms units. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that the forward seize signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS16 two-way (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time that a clear forward signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	RMINSZA	0 to 6000	*Receive minimum seize acknowledge signal*. Enter the minimum time that a received backward seize acknowledge signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RSZATMO	0 to 6000	*Receive seize acknowledge time-out*. Enter the maximum time to wait for the system to receive a seize acknowledge signal. The reception of the signal occurs after the transmission of a seize signal. Enter the maximum time to wait in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 300 (3 s).
	RMINANS	0 to 6000	*Receive minimum answer*. Enter the minimum time that a received backward answer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).
	RMINCLB	0 to 6000	*Receive minimum clear back signal*. Enter the minimum time that a received clear back signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).

LNSIGSYS type NTLS16 two-way (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that a received blocking signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 50 (500 ms).
	RRLGTMO	0 to 6000	*Receive release guard time-out*. Enter the maximum time to wait before the transmission of a repeat clear forward signal occurs. The transmission occurs if the system does not receive a release guard signal after the transmission of a clear forward signal. Enter the maximum time to wait in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 1000 (10 s).
	RMINFRLS	0 to 6000	*Received minimum force release signal*. Enter the minimum time that a received force release signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINFRLA	0 to 6000	*Send minimum force release acknowledge signal*. Enter the minimum time that a sent force release acknowledge signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS20 incoming

Signaling type NTLS20 incoming

The description of the datafill that the operating company defines for the NTLS20 incoming signaling system appears n this section.

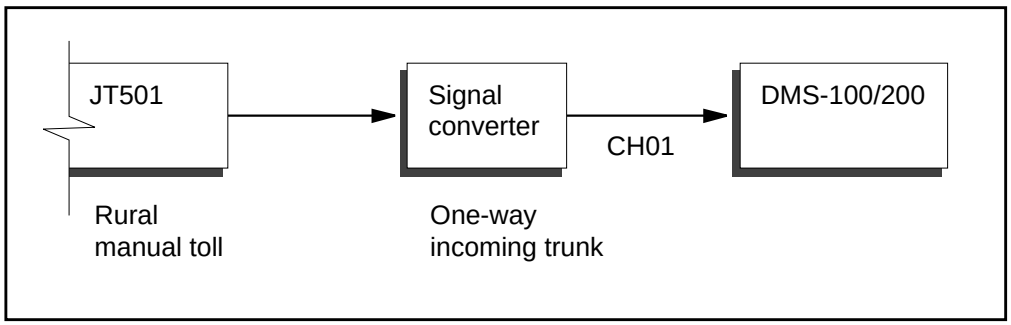
The trunk call processing in China uses the NTLS20 incoming signaling system on international DMS-100/200 switches. Chinese digital line signaling uses three signaling bits, A, B, and C, in the signaling channel of the PCM30 message signaling carrier. The A-bit indicates the hook state of the originating and the terminating agents. The B-bit is for seizure acknowledgment, terminating only, and blocking. The C-bit provides operator events signaling and meter signaling.

The NTLS20 signaling system provides line signals for eight trunk interfaces CH01 to CH07, and CH09.

Trunks are entered with data as NTLS20 incoming support CH01, CH03, CH04, CH05, incoming CH06, incoming CH07, and CH09 trunk interfaces. The name CH08 is not in use.

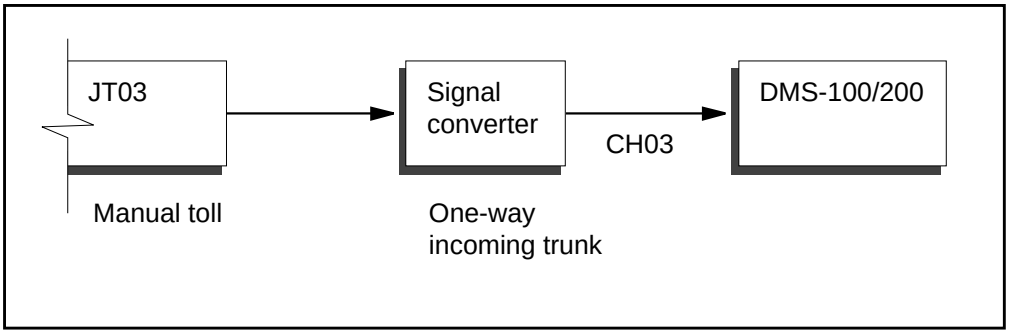
The CH01 is a one-way incoming trunk that originates from a Chinese JT501 operator switchboard, the rural manual toll. This trunk is a direct current (dc) dial pulse (DC/DP) trunk. Only local call completion uses this trunk. The CH01 trunk appears in the following figure.

CH01 trunk interface



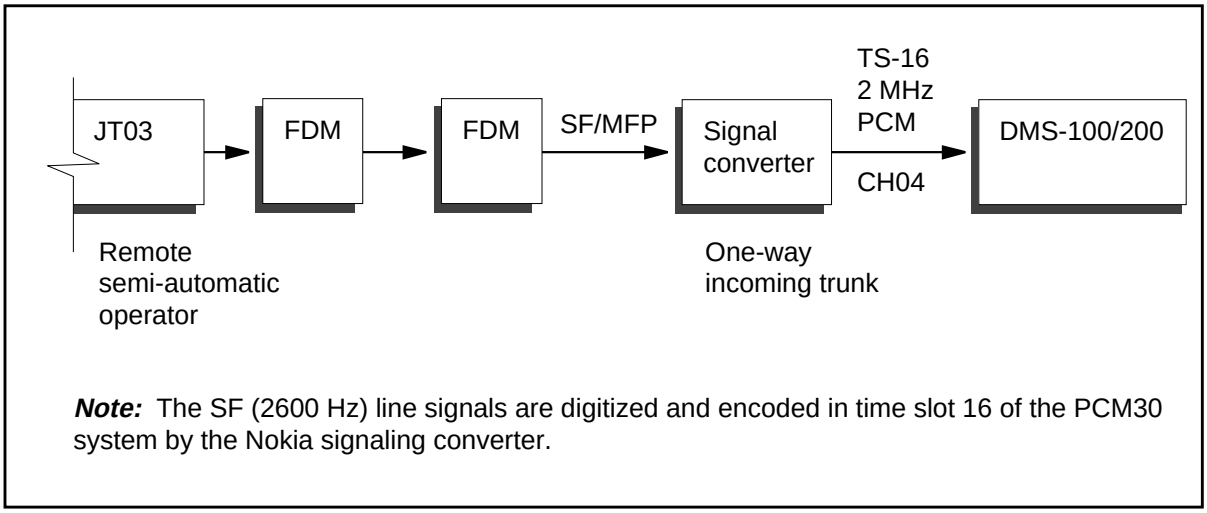
The CHO3 is a one-way incoming trunk that originates from a Chinese JT03 manual operator switchboard, the manual toll. This trunk type completes local calls for suburban subscribers. This trunk is a DC/DP dial type like the CH01. The trunk appears in the following figure.

CH03 trunk interface



The CH04 is a one-way incoming trunk that originates from a remote semi-automatic toll operator through a JT03 operator switchboard. The CH04 uses single frequency (SF) line signaling and multifrequency pulsed (MFP) register signaling. This trunk type is in use for incoming semiautomatic toll call completion on a frequency division multiplex (FDM) route. This trunk type can carry operator signals. The CH04 trunk appears in the following figure.

CH04 trunk interface

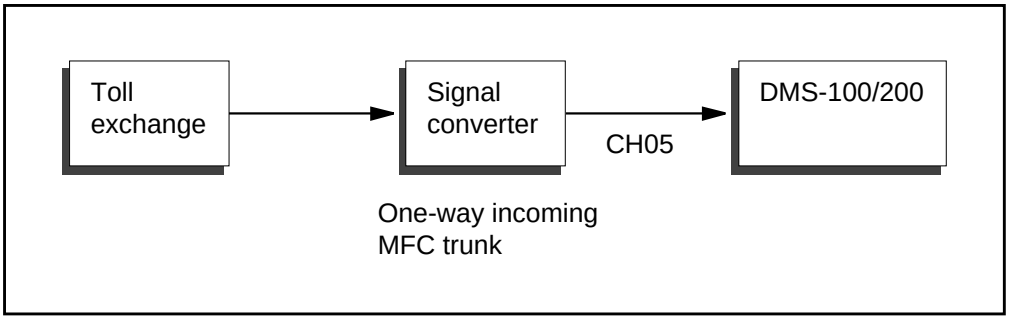


Note: The SF (2600 Hz) line signals are digitized and encoded in time slot 16 of the PCM30 system by the Nokia signaling converter.

The CH05 is a one-way incoming multifrequency compelled (MFC) trunk that originates from a toll exchange. This trunk type is in use for automatic toll calls. This trunk types can carry operator signals. The CH05 trunk appears in the following figure.

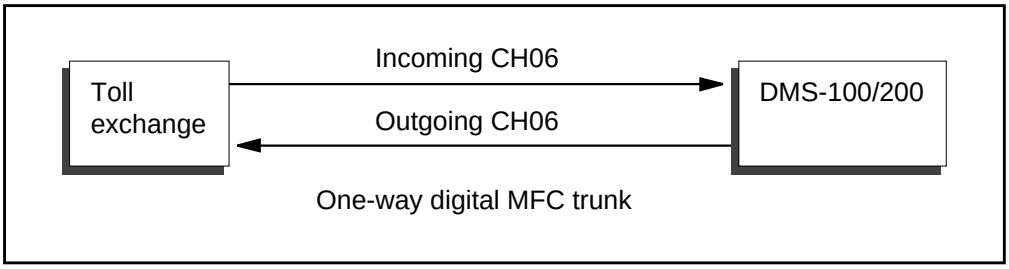
LNSIGSYS type NTLS20 incoming (continued)

CH05 trunk interface



The CH06 is a one-way, incoming or outgoing, digital MFC trunk between a DMS-100/200 and a toll exchange. This trunk type is used for automatic toll calls. This trunk type can carry operator signals. The CH06 trunk appears in the following figure.

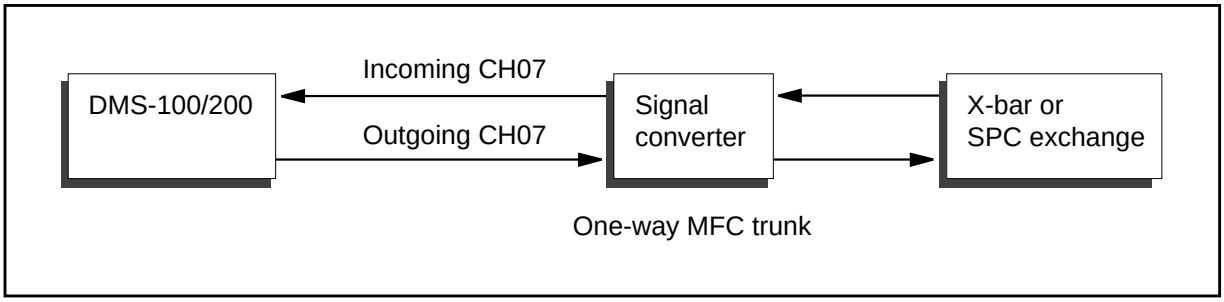
CH06 trunk interface



The CH07 is a one-way, outgoing or incoming, MFC trunk. The trunk is between a DMS-100/200 and a crossbar (X-bar) or stored program control (SPC) exchange. This trunk type is in use for automatic toll calls. This trunk type can carry operator signals. The CH07 trunk appears in the following figure.

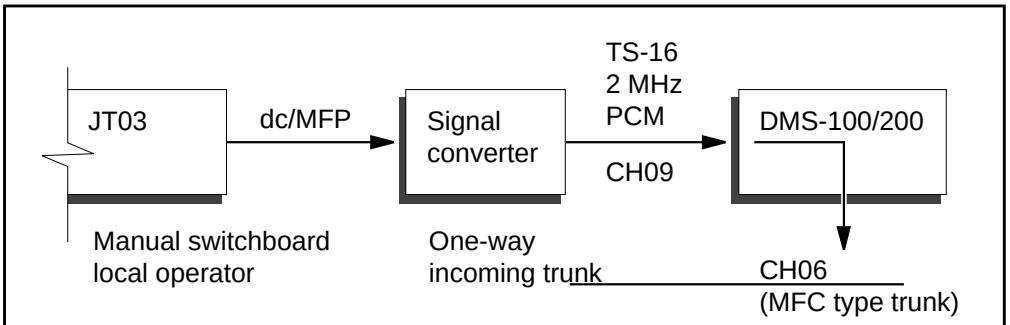
LNSIGSYS type NTLS20 incoming (continued)

CH07 trunk interface



The CH09 is a one-way incoming trunk that originates from a local manual toll operator through a JT03 operator switchboard. The CH09 uses dc line signaling and MFP register signaling. This trunk type establishes outgoing trunks on pulse code modulation links to other digital switches. This trunk type can carry operator signals. The lines are CHO6 or MFC type trunks. The CH09 trunk appears in the following figure.

CH09 trunk interface



Note: The dc line signals are digitized and encoded in time slot 16 of the PCM30 system by the Nokia signaling converter.

LNSIGSYS type NTLS20 incoming (continued)

Datafill

Datafill for table LNSIGSYS type NTLS20 incoming appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS20	*Signaling type*. Enter NTLS20 for the NTLS20 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time to detect a line signal. Enter the minimum signal duration time in units of 2 ms. The system does not recognize a line signal that occurs for less than 40 ms. If the value you enter is not 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).
	DIRECTION	see subfield	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	IC	*Signaling direction*. Enter IC for the incoming signaling direction.
	SMINIDLE	0 to 500	*Send minimum idle signal*. Enter the minimum time that a backward idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS20 incoming (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RMINIDLE	0 to 6000	*Receive minimum idle signal*. Enter the minimum time that a backward idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	RMINSZG	0 to 6000	*Receive minimum seize signal*. Enter the minimum time that a received forward seize signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).
	RMINCLF	0 to 6000	*Receive minimum clear forward signal*. Enter the minimum time that a received clear forward signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 30 (300 ms).
	RMINFOT	0 to 6000	*Receive minimum forward transfer signal*. Enter the minimum time that a received forward transfer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 ms). The default value is 12 (120 ms).
	RFOTSETL	0 to 6000	*Receive forward transfer settling time*. Enter the delay, after the system receives the forward transfer signal. The delay is the setting time. Enter the delay in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 ms). The default value is 10 (100 ms).
	SMINSZA	0 to 6000	*Send minimum backward seizure signal*. Enter the minimum time that a backward seize acknowledge signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS20 incoming (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINSSF	0 to 6000	*Send minimum subscriber free signal*. Enter the minimum time to maintain the backward subscriber free signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINSSB	0 to 6000	*Send minimum subscriber busy signal*. Enter the minimum time to maintain the backward subscriber busy signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time to maintain the backward answer signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	SMINBLO	0 to 6000	*Send minimum blocking signal*. Enter the minimum time that a backward B-bit blocking signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time to maintain the backward clear back signal. Enter the minimum value in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	SMINRLG	0 to 6000	*Send minimum release guard signal*. Enter the minimum time to maintain the backward release guard signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS20 incoming (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINUBLO	0 to 6000	*Send minimum unblocking signal*. Enter the minimum time to maintain an unblocking signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINRGB	0 to 6000	*Send minimum ring back signal*. Enter the minimum time to maintain a ringback signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 12 (120 ms).

LNSIGSYS type NTLS20 outgoing

Signaling type NTLS20 outgoing

The description of the datafill that the operating company defines for the NTLS20 outgoing signaling system appears in this section.

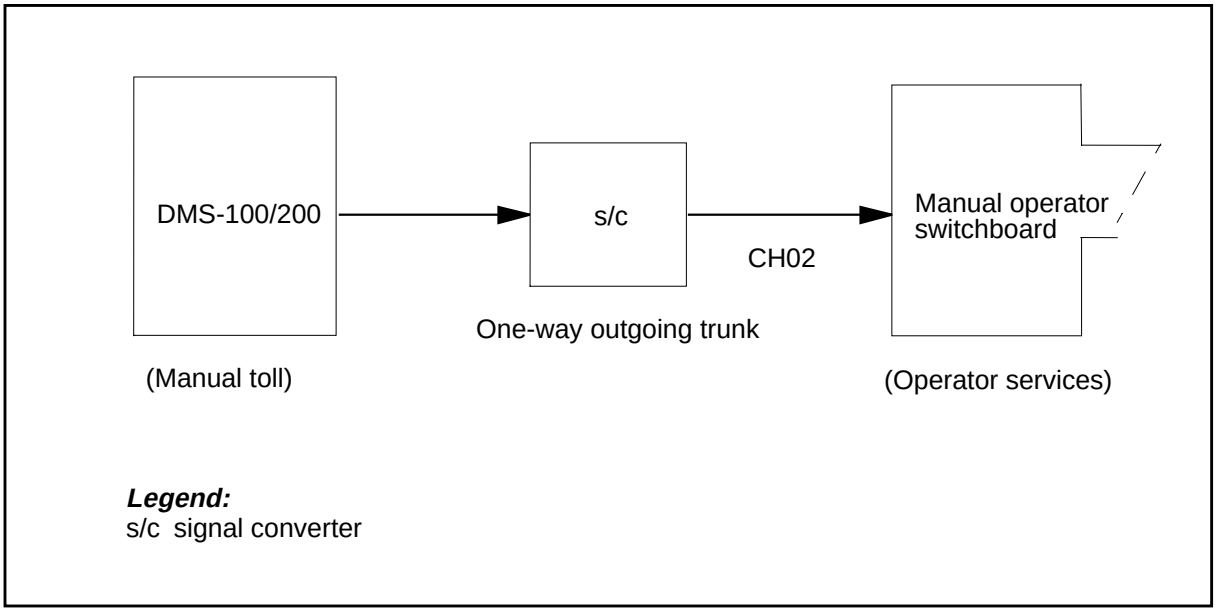
China uses the NTLS20 outgoing signaling system for trunk call processing that international DMS-100/200 switches perform. Chinese digital line signaling uses three signaling bits in the signaling channel of the PCM30 carrier. These signaling bits are A-bit, B-bit and C-bit. The A-bit indicates the hook state of the originating and terminating agents. The B-bit is for seizure acknowledgment, terminating only, and blocking. The C-bit provides operator event signaling and meter signaling.

The NTLS20 signaling system provides line signals for the eight trunk interfaces CH01 to CH07, and CH09.

The NTLS20 outgoing trunks support CH02, outgoing CH06, and outgoing CH07 trunk interfaces. The name CH08 is not in use.

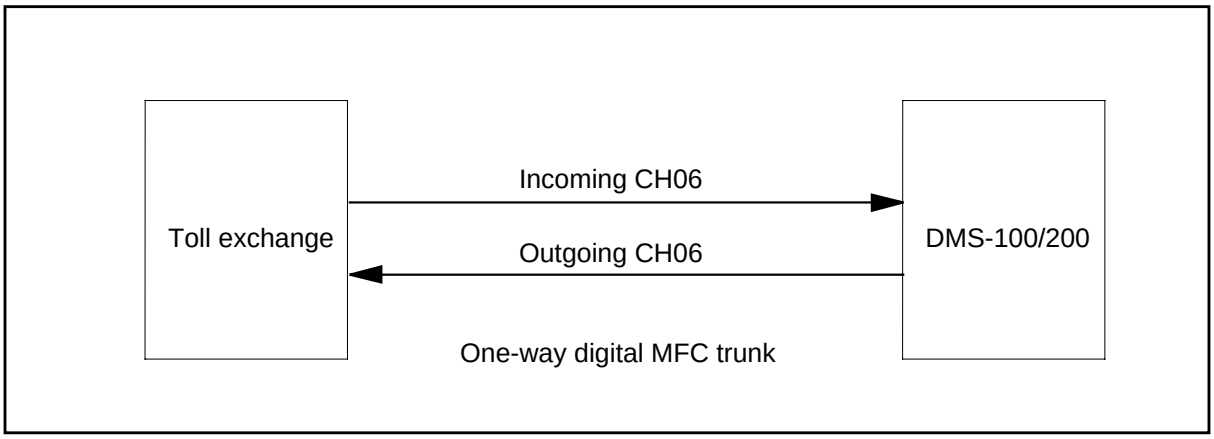
The CH02 is a one-way outgoing trunk that originates at a DMS-100/200. The CH02 terminates at a manual operator services switchboard. The CH02 is a seize-only trunk without digit outpulsing. This trunk supplies inquiry and call booking services for subscribers. The CH02 trunk appears in the following figure.

CH02 trunk interface



The CH06 is a one-way, incoming or outgoing, digital multifrequency compelled (MFC) trunk between a DMS-100/200 and a toll exchange. This trunk type is in use for automatic toll calls. This trunk type can carry operator signals. The CH06 trunk appears in the following figure.

CH06 trunk interface

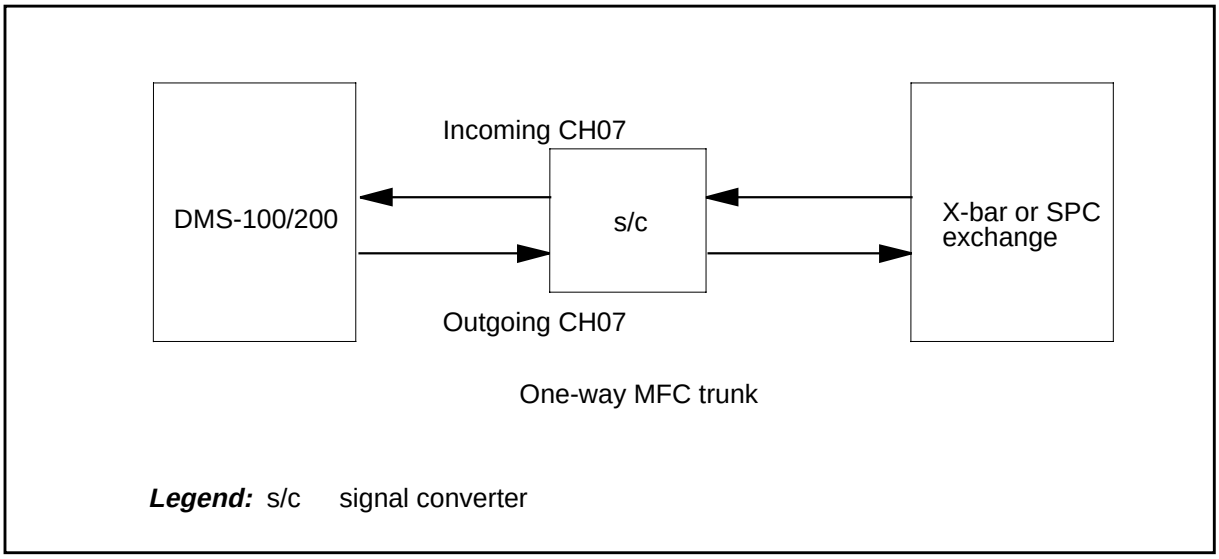


The CH07 is a one-way, outgoing or incoming, MFC trunk. The CH07 is between a DMS-100/200 and a crossbar (X-bar) or stored program control (SPC) exchange. This trunk type is in use for automatic toll calls. This trunk

LNSIGSYS type NTLS20 outgoing (continued)

type can carry operator signals. The CH06 trunk appears in the following figure.

CH07 trunk interface



Datafill

Datafill for table LNSIGSYS type NTLS20 outgoing appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS20	*Signaling type*. Enter NTLS20 for the NTLS20 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.

LNSIGSYS type NTLS20 outgoing (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	FILTERTM	20	*Filter time*. Enter 20 as the minimum signal duration time for the detection of any line signal. Enter the minimum signal duration time in units of 2 ms. A line signal that occurs for less than 40 ms is not recognized. If the value you enter is not 20, table control sets the field to 20. Table control provides the following warning message: `FILTERTM PARAMETER SET TO 20. THIS PARAMETER CANNOT BE MODIFIED.` The recommended setting is 20 (40 ms). The default value is 20 (40 ms).
	DIRECTION	see subfield	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	OG	*Signaling direction*. Enter OG for the outgoing signaling direction.
	SMINIDLE	0 to 500	*Send minimum idle signal*. Enter the minimum time that a backward idle signal must occur for the system to recognize the signal. Enter the time in 10 ms intervals. The recommended range is 0 to 500 (0 to 5 s). The default value is 0 (0 ms).
	RMINIDLE	0 to 6000	*Receive minimum idle signal*. Enter the minimum time that a backward idle signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 20 (200 ms).
	RMINANS	0 to 6000	*Receive minimum answer*. Enter the minimum time that a received backward answer signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).

LNSIGSYS type NTLS20 outgoing (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that a received backward blocking signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 50 (500 ms).
	RMINUBLO	0 to 6000	*Receive minimum unblocking signal*. Enter the minimum time that a received backward unblocking signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RMINCLB	0 to 6000	*Receive minimum clear back signal*. Enter the minimum time that a received clear back signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time that a received release guard signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 30 (300 ms).
	RSZATMO	0 to 12000	*Receive seize acknowledge time-out*. Enter the maximum time to wait for the reception of a seize acknowledge signal. This event occurs after the transmission of a seize signal. Enter the maximum time to wait in 10 ms intervals. The recommended range is 0 to 12000 (0 to 120 s). The default value is 300 (3 s).

LNSIGSYS type NTLS20 outgoing (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RMINSZA	0 to 6000	*Receive minimum seize acknowledge signal*. Enter the minimum time that a received backward seize acknowledge signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	RRLGTMO	0 to 6000	*Receive release guard time-out*. Enter the maximum time to wait before the transmission of a repeat clear forward signal. This event occurs if the system does not receive a release guard signal after the transmission to a clear forward signal. Enter the maximum time to wait in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 500 (5 s).
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time that a clear forward signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).
	SMINRCLF	0 to 6000	*Send minimum repeat clear forward signal*. Enter the minimum time that a repeat clear forward signal must occur for the system to recognize the signal. Enter the minimum in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 10 (100 ms).
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that a seizure signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 0 (0 ms).

LNSIGSYS type NTLS20 outgoing (end)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SMINFOT	0 to 6000	*Send minimum forward transfer signal*. Enter the minimum time that a sent forward transfer signal must occur for the system to recognize the signal. Enter minimum time in10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 15 (150 ms).
	RMINRGB	0 to 6000	*Receive minimum ringback signal*. Enter the minimum time that a received ringback signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 8 (80 ms).
	RRGBSETL	0 to 6000	*Receive ringback settling time*. Enter the delay after the system receives the ringback signal. The delay is the setting time. Enter the delay in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 ms). The default value is 10 (100 ms).
	RMINSSF (BCS35-)	0 to 6000	*Receive minimum subscriber status free signal*. Enter the minimum time that a received subscriber status free signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 5 (50 ms).
	RMINSSB (BCS35-)	0 to 6000	*Receive minimum subscriber status busy signal*. Enter the minimum time that a received subscriber status busy signal must occur for the system to recognize the signal. Enter the minimum time in 10 ms intervals. The recommended range is 0 to 6000 (0 to 60 s). The default value is 5 (50 ms).

Signaling type NTLS22 incoming

The datafill that the operating company defines for the NTLS22 incoming signaling system appears in this section.

The NTLS22 signaling system uses T2 signaling. The T2 line signaling in the telephony network in the Commonwealth of Independent States (CIS) is for incoming toll calls. The toll calls include toll to tandem, tandem to tandem, tandem to local, and toll to local calls.

The NTLS22 signaling system is based on A-bits and B-bits in the signaling channel of the PCM30 carrier. This condition occurs to support one-way operation. The signaling system does not use C-bits and D-bits. The values of the C-bits and D-bits are 0 and 1.

Datafill

Datafill for table LNSIGSYS type NTLS22 incoming appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum addition of line signaling indexes to the table is 16.
SIGTYPE		NTLS22	*Signaling type*. Enter NTLS22 for the NTLS22 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.
	DIRECTION	refer to the subfield	*Direction*. This field contains subfield SIGDIR.
	SIGDIR	IC	*Signaling direction*. Enter IC for the incoming signaling direction. Default value: IC

LNSIGSYS type NTLS22 incoming (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINIDL	0 to 6000	*Send minimum idle signal*. Enter the minimum time that the system maintains a sent idle signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 20 (200 ms).
	RMINSZG	0 to 6000	*Receive minimum seize signal*. Enter the minimum time that the system maintains a received seize signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is15 (150 ms).
	RMINCLF	0 to 6000	*Receive minimum clear forward signal*. Enter the minimum time that the system maintains a received clear forward signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 30 (300 ms).
	RMINDRNG	0 to 6000	*Receive minimum decadic ringing signal*. Enter the minimum time that the system maintains a received decadic ring signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 30 (300 ms).
	SMINSZA	0 to 6000	*Send minimum backward seizure signal*. Enter the minimum time that the system maintains a sent backward seize acknowledge signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).
	SMINBLO	0 to 6000	*Send minimum blocking signal*. Enter the minimum time that the system maintains a sent backward B-bit blocking signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).

LNSIGSYS type NTLS22 incoming (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SMINBIDL	0 to 6000	*Send minimum blocking signal*. Enter the minimum time that the system maintains a sent backward idle signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).
	SMINSSB	0 to 6000	*Send minimum subscriber busy or blocked signal*. Enter the minimum time that the system maintains a sent subscriber busy or blocked signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).
	SMINCLB	0 to 6000	*Send minimum clear back signal*. Enter the minimum time that the system maintains a sent clear back signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 20 (200 ms).
	SMINANS	0 to 6000	*Send minimum answer signal*. Enter the minimum time that the system maintains a sent answer signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 20 (200 ms).
	RCLFTMO	0 to 30000	*Receive clear forward signal time-out*. Enter the maximum time to wait for a received clear forward signal after a backward subscriber busy or blocked signal. Enter the time in 10 ms intervals. Recommended range is 0 to 30000 (0 to 300 s). Default value is 180 (1800 ms).

LNSIGSYS type NTLS22 incoming (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RDRNGTMO	0 to 30000	*Receive decadic ring signal time-out*. Enter the maximum time to wait for a received decadic ring signal after a backward idle signal. Enter the time in 10 ms intervals. Recommended range is 0 to 30000 (0 to 300 s). Default value is 180 (18 000 ms).
	SANSTMO	0 to 30000	*Send answer signal time-out*. Enter the maximum time to wait for a sent answer signal after the ringing starts. Enter the time in 10 ms intervals. Recommended range is 0 to 18000 (0 to 1800 s). Default value is 9000 (90 000 ms).

Signaling type NTLS22 outgoing

The datafill that the operating system defines for the NTLS22 outgoing signaling system appears in this section.

The NTLS22 signaling system is based on T2 signaling. The T2 line signaling in the telephony network in the Commonwealth of Independent States (CIS) is for incoming toll calls. These calls include toll to tandem, tandem to tandem, tandem to local, and toll to local calls.

The NTLS22 signaling system is based on the A-bit and B-bits in the signaling channel of the PCM30 carrier. This condition allows support for one-way operation. The signaling system does not use C-bits and D-bits. The values of these bits are 0 and 1.

Datafill

Datafill for table LNSIGSYS type NTLS22 outgoing appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum addition of line signaling indexes to the table is 16.
SIGTYPE		NTLS22	*Signaling type*. Enter NTLS22 for the NTLS22 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements that appear below.
	DIRECTION	see subfield	*Direction*. This field contains the subfield SIGDIR.
	SIGDIR	OG	*Signaling direction*. The entry of OG is only for test purposes. Enter OG for the outgoing signaling direction. Default value: IC

LNSIGSYS type NTLS22 outgoing (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RMINIDL	0 to 6000	*Receive minimum idle signal*. Enter the minimum time that the system maintains a received idle signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 20 (20 ms).
	SMINSZG	0 to 6000	*Send minimum seize signal*. Enter the minimum time that the system maintains a sent seize signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).
	SMINCLF	0 to 6000	*Send minimum clear forward signal*. Enter the minimum time that the system maintains a sent clear forward signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).
	SMINDRNGS	0 to 6000	*Send minimum decadic ringing signals*. Enter the minimum time that the system maintains a sent decadic ring stop signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 0 (0 ms).
	RMINSZA	0 to 6000	*Receive minimum backward seizure signal*. Enter the minimum time that the system maintains a received backward seize acknowledge signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 10 (100 ms).
	RMINBLO	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that the system maintains a received backward B-bit blocking signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 50 (500 ms).

LNSIGSYS type NTLS22 outgoing (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RMINBIDL	0 to 6000	*Receive minimum blocking signal*. Enter the minimum time that the system maintains a received backward idle signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 15 (150 ms).
	RMINSSB	0 to 6000	*Receive minimum subscriber busy or blocked signal*. Enter the minimum time that the system maintains a received subscriber busy or blocked signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 10 (100 ms).
	RMINCLB	0 to 6000	*Receive minimum clear back signal*. Enter the minimum time that the system maintains a received clear back signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 15 (150 ms).
	RMINANS	0 to 6000	*Receive minimum answer signal*. Enter the minimum time that the system maintains a received answer signal for recognition. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 15 (150 ms).
	RIDLTMO	0 to 30000	*Receive maximum idle signal time-out*. Enter the maximum time to wait for a received idle signal after the system sends a clear forward signal. Enter the time in 10 ms intervals. Recommended range is 0 to 30000 (0 to 300 s). Default value: 180 (1800 ms).

LNSIGSYS type NTLS22 outgoing (end)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RSZATMO	0 to 6000	*Receive maximum seize acknowledge signal*. Enter the maximum time to wait for a received seize acknowledge signal after the system sends a seize signal. Enter the time in 10 ms intervals. Recommended range is 0 to 6000 (0 to 60 s). Default value is 70 (700 ms)
	RBIDLTMO	0 to 30000	*Receive maximum backward idle signal time-out*. Enter the maximum time to wait for a received backward idle signal or a subscriber busy or blocked signal after the end of register signaling. Enter the time in 10 ms intervals. Recommended range is 0 to 30000 (0 to 300 s). Default value is 180 (1800 ms).
	RANSTMO	0 to 18000	*Receive maximum backward answer signal time-out*. Enter the maximum time to wait for a received backward answer signal after the reception of a subscriber free signal. Enter the time in 10 ms intervals. Recommended range is 0 to 18000 (0 to 180 s). Default value is 7200 (72 000 ms)
	SDRNGON	0 to 6000	*Send decadic ringing on*. Enter the pulse duration for decadic ringing pulses. Recommended range: 0 to 6000 (60 s) Default value: 1200 (1.2 s)
	SDRNGOFF	0 to 6000	*Send decadic ringing off*. Enter the pause duration for decadic ringing pulses. Recommended range: 0 to 6000 (60 s) Default value: 200 (2 s)
	RMINRLG	0 to 6000	*Receive minimum release guard signal*. Enter the minimum time that the system maintains a received release guard signal for recognition. Enter the time in 10 ms intervals. Recommended range: 0 to 6000 (0 to 60 s) Default value: 10 (100 ms).

Signaling type NTLS24 incoming/outgoing

This section describes the datafill that the operating company can define for the NTLS24 incoming/outgoing signaling system. The NTLS24 is the digital A-bit pulsed line signaling protocol for the DMS-100i and DMS-200i switches. The NTLS24 specifies the generic line signaling requirements and interactions for originating and terminating trunk traffic.

The NTLS24 incoming/outgoing signaling system is a one-bit pulsed line signaling protocol for the PCM30 carrier. The NTLS24 only uses the A-bit from the PCM30 carrier. The default values for the B-, C-, and D-bits that remain are CCITT recommended values. The CCITT recommended values are 1, 0, and 1.

Datafill

Datafill for table LNSIGSYS type NTLS24 incoming/outgoing appears in the following table.

Field descriptions (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index*. Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum number of line signaling indexes that you can add to the table is 16.
SIGTYPE		NTLS24	*Signaling type*. Enter NTLS24 for the NTLS24 signaling type.
LSSINFO		see refinements	*Line signaling system information*. This field contains the refinements described below.
	FILTERTM	5 to 63	*Filter time*. Enter the minimum signal time period in which recognition of a signal can occur. Enter the time in 2-ms intervals. Range: 5 to 63 (10 to 126 ms). Default value: 20 (40 ms).

LNSIGSYS type NTLS24 incoming/outgoing (continued)

Field descriptions (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	AIDLPOL	0 or 1	*A-bit idle state*. Enter the polarity of the A-bit if the trunk is in the defined idle state. Range: 0 or 1. Default value: 1. *B-bit idle state*. Enter the polarity of the B-bit if the trunk is in the defined idle state. Range: 0 or 1. Default value: 1.
	BIDLPOL	0 or 1	
	CIDLPOL	0 or 1	*C-bit idle state*. Enter the polarity of the C-bit if the trunk is in the defined idle state. Range: 0 or 1. Default value: 0.
	DIDLPOL	0 or 1	*D-bit idle state*. Enter the polarity of the D-bit if the trunk is in the defined idle state. Range: 0 or 1. Default value: 1.
	SIGDIR	IC, OG, or 2W	*Signaling direction*. Enter the signaling direction of the trunk in relation to the end that can seize the trunk. Range: IC, OG, 2W. Default value: IC.
	RMINSPLS	0 to 6000	*Minimum recognition time - short pulse*. Enter the minimum recognition time in which the system can receive a short pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RMAXSPLS	0 to 6000	*Maximum recognition time - short pulse*. Enter the maximum recognition time in which the system can receive a short pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 20 (200 ms).

LNSIGSYS type NTLS24 incoming/outgoing (continued)

Field descriptions (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	RMINLPLS	0 to 6000	*Minimum recognition time - long pulse*. Enter the minimum recognition time in which the system can receive a long pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 40 (400 ms).
	RMAXLPLS	0 to 6000	*Maximum recognition time - long pulse*. Enter the maximum recognition time in which the system can receive a long pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 80 (800 ms).
	RMINEPLS	0 to 6000	*Minimum recognition time - extended pulse* Enter the minimum recognition time in which the system can receive an extended pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 0 (0 ms).
	RMAXEPLS	0 to 6000	*Maximum recognition time - extended pulse*. Enter the maximum recognition time in which the system can receive an extended pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 0 (0 ms).
	SSPLSDUR	0 to 6000	*Sending duration - short pulse*. Enter the time period in which the system can send a short pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 15 (150 ms)
	SLPLSDUR	0 to 6000	*Sending duration - long pulse*. Enter the time period in which the system can send a long pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 60 (600 ms).

LNSIGSYS type NTLS24 incoming/outgoing (continued)

Field descriptions (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	SEPLSDUR	0 to 6000	*Sending duration - extended pulse*. Enter the duration in which the system can send an extended pulse. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 0 (0 ms).
	RPLSOFF	0 to 6000	*Minimum receive idle time*. Enter the minimum time that a pulse must continue after the change to the idle state. Enter the time in 10-ms intervals. This value completes the recognition of a pulse. This value must be less than the value in field SMINIDL. Range: 0 to 6000 (0 to 60 s). Default value: 24 (240 ms).
	SMINIDL	0 to 6000	*Minimum idle time between signals*. Enter the minimum time between two signals that follow one after the other. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 30 (300 ms).
	SMINBLO	0 to 6000	*Minimum duration - send blocking signal*. Enter the minimum time in which the system can send a blocking signal. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 250 (2500 ms).
	RMINBLO	0 to 6000	*Minimum duration - receive blocking signal*. Enter the minimum time in which the recognition of a signal as a blocking signal must continue. Enter the time in 10-ms intervals. This value must be greater than the longest possible pulse received. Recommended range: 0 to 6000 (0 to 60 s). Default value: 250 (2500 ms).

LNSIGSYS type NTLS24 incoming/outgoing (continued)

Field descriptions (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	REPCLFTM	0 to 6000	*Repeat clear forward time-out*. Enter the delay that occurs before the system sends a seize and clear forward (CLF) signal. Enter the time in 10-ms intervals. The system sends a seize and CLF signal if the system does not receive a release guard (RLG) signal. This value must be 10 s, or the greater value of the sum of RLG and CLF send signal durations. The default value 0 (zero) suppresses the functionality of this field. Recommended range: 0 to 6000 (0 to 60 s). Default value: 0 (zero).
	SIDLTM	0 to 6000	*Signaling idle time*. Enter the line signaling idle time. Enter the time in 10-ms intervals. Range: 0 to 500 (0 to 5 s). Default value: 10 (100 ms).
	RMINRCVY	0 to 6000	*Recovery idle time*. Enter the minimum idle time before the system recovers the trunk. Enter the time in 10-ms intervals. Range: 0 to 6000 (0 to 60 s). Default value: 10 (100 ms).
	RANITMO	500 to 3000	*Automatic number identification time*. Enter the minimum time required before an automatic number identification (ANI) time-out occurs. Enter the minimum time in 10-ms intervals. Range: 500 to 3000 (0.5 to 30 s). Default value: 3000 (30 s).
	SZG	EXTENDED, LONG, NIL, or SHORT	*Seizure signal*. Enter the definition for the seizure signal pulse. Default value: SHORT
	ANS	EXTENDED, LONG, NIL, or SHORT	*Answer signal*. Enter the definition for the answer signal pulse. Default value: SHORT

LNSIGSYS type NTLS24 incoming/outgoing (end)

Field descriptions (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	CLB	EXTENDED, LONG, NIL, or SHORT	*Clear back signal*. Enter the definition for the clear back signal pulse. Default value: LONG
	CLF	EXTENDED, LONG, NIL, or SHORT	*Clear forward signal*. Enter the definition for the clear forward signal pulse. Default value: LONG
	RLG	EXTENDED, LONG, NIL, or SHORT	*Release guard signal*. Enter the definition for the release guard signal pulse. Default value: LONG
	FRLS	EXTENDED, LONG, NIL, or SHORT	*Force release signal*. Enter the definition for the force release signal pulse. Default value: NIL
	FOT	EXTENDED, LONG, NIL, or SHORT	*Forward transfer signal*. Enter the definition for the forward transfer signal pulse. Default value: NIL
	SZA	EXTENDED, LONG, NIL, or SHORT	*Seize acknowledge signal*. Enter the definition for the seize-acknowledgesignal pulse. Default value: NIL
	PTS	EXTENDED, LONG, NIL, or SHORT	*Proceed to send signal*. Enter the definition for the proceed to send signal pulse. Default value: NIL
	ANI	EXTENDED, LONG, NIL, or SHORT	*Automatic number identification signal*. Enter the definition for the ANI signal pulse. Default value: NIL

Signaling type WINKSIG

Datafill that the operating company can define for the wink (wink-start) signaling system appears in this section.

Datafill

Field names, subfield names, and correct data ranges for table LNSIGSYS appear in the following table.

Field descriptions (Sheet 1 of 9)

Field	Subfield	Entry	Explanation and action
LNSIGIDX		alphanumeric (1 to 16 characters)	*Line signaling index* Enter the signaling system index that the operating company defines. This field is the key to table LNSIGSYS. The maximum addition of line signaling indexes to the table is 25.
SIGTYPE		WINKSIG	*Signaling type* Enter WINKSIG for wink signaling.
LSSINFO		see subfields	*Line signaling system information* This field contains the subfields that appear below.
	FILTERTM	20	*Filter time* Enter 20 as the minimum signal duration time for the detection of a line signal. Enter the time in 2 ms intervals. The system does not recognize a line signal that lasts for less than 40 ms. If you do not enter 20, the tuple is invalid and table control displays the following warning message: `FLTR must be 20 (40 ms) for this SIGTYPE` Recommended setting is 20 (40 ms). Default value is 20 (40 ms). ***Note:*** For MMP loads, operating company personnel have the option of a range from 5 to 63. Operating company personnel can enter the time in 2-ms increments.

LNSIGSYS type WINKSIG (continued)

Field descriptions (Sheet 2 of 9)

Field	Subfield	Entry	Explanation and action
	RCMNSZG	3 to 1000	*Received minimum seize signal* Enter the minimum time necessary to detect a seize signal. Enter the time in 2 ms intervals. Recommended range is 40 to 250 (80 to 500 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	SENDPTS	2 to 10000	*Send PTS (wink) signal* Enter the duration of the transmitted proceed-to-send (PTS) signal (wink) in 2 ms intervals. Recommended range is 45 to 250 (90 to 500 ms).
	SDPTPTS	1 to 100	*Send post-PTS* Enter the minimum amount of time that the trailing edge of a PTS (wink) signal lasts. Enter the time in 2 ms intervals. Recommended range is 1 to 100 (2 to 200 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	SENDIDL	0 to 6000	*Send idle signal* Enter the minimum amount of time for the idle signal to last. Enter the time in ms.
	RMNPRPTS	25 to 25000	*Receive minimum Post-PTS* Enter the time that a seized trunk must return to idle before the recognition of the PTS signal. Enter the time in 2 ms intervals. Recommended range is 25 to 50 (50 to 100 ms). ***Note:*** For MMP loads, the range is 0 to 6000.

LNSIGSYS type WINKSIG (continued)

Field descriptions (Sheet 3 of 9)

Field	Subfield	Entry	Explanation and action
	RMXPRPTS	250 to 30000	*Receive maximum pre-PTS* Enter the maximum time that a seized trunk waits for a PTS signal before timing out. Enter the time in 2 ms intervals. Recommended range is 2000 to 10000 (4 to 20 s). ***Note:*** The range for MMP loads is 0 to 6000.
	RMINPTS	20 to 100	*Minimum received PTS signal* Enter the minimum time that the system accepts as a PTS (wink) signal. Enter the time in 2 ms intervals. Recommended range is 45 to 250 (90 to 500 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	RMAXPTS	50 to 500	*Maximum received PTS signal* Enter the maximum time that the system accepts as a PTS (wink) signal. Enter the time in 2 ms intervals. Recommended range is 100 to 250 (200 to 500 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	RCMAXFAN	1 to 200	*Receive maximum false answer* Enter the time to delay the start of scanning for the answer signal that follows outpulsing. Enter the time in 10 ms intervals. The insertion of this delay prevents confusion of the momentary loop open. The momentary loop open occurs when a crossbar switch detaches the register of the crossbar switch from an incoming trunk. This momentary open lasts from 200 to 800 ms. The momentary open occurs up to 800 ms after the completion of multifrequency (MF) digit outpulsing or reception, or both. Recommended range is 0 to 200 (0 to 2000 ms). ***Note:*** This field is not available for MMP.

LNSIGSYS type WINKSIG (continued)

Field descriptions (Sheet 4 of 9)

Field	Subfield	Entry	Explanation and action
	CLBTIMER	1 to 6553 5	*Time-out after clear back signal* Enter the time that an incoming trunk waits after the propagation of a clear back signal. Enter the time in 10 ms intervals. The incoming trunks waits for a clear forward signal from the calling end or a reanswer signal from the called end. Enter -1 to indicate that timing does not occur. Entries outside this range are not correct. Recommended range is 500 to 6400 (5 to 64 s) or -1 (to indicate timing does not occur). ***Note:*** This field is not available for MMP.
	RCMNRANS	0 to 6000	*Receive minimum RAN signal* Enter the minimum amount of time the outgoing trunk must identify the reanswer (RAN) signal. Enter the time in ms.
	RCMNANS	0 to 6000	*Receive minimum ANS signal* Enter the minimum amount of time the outgoing trunk must identify the answer (ANS) signal. Enter the time in ms.
	RCMNBLO	0 to 6000	*Receive minimum BLO signal* Enter the minimum time the block (BLO) signal must last. Enter the time in ms.
	RCMNUBL	0 to 6000	*Receive minimum UBL signal* Enter the minimum amount of time required before the outgoing trunk identifies the unblock (UBL) signal. Enter the minimum time required
	SDMNUBL	0 to 6000	*Send minimum UBL signal* Enter the time that an outgoing trunk maintains the idle state after the transmission of an unblock (UBL) signal.

LNSIGSYS type WINKSIG (continued)

Field descriptions (Sheet 5 of 9)

Field	Subfield	Entry	Explanation and action
	RCMNCLF	1 to 10000	*Receive minimum clear forward signal* Enter the minimum amount of time required before the recognition of a clear forward signal. Enter the time in 2 ms intervals. Recommended range is 45 to 500 (90 to 1000 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	SDMNCLF	1 to 10000	*Send minimum clear forward signal* Enter the time that an outgoing trunk maintains the idle state after the transmission of a clear forward signal. Enter the time in 2 ms intervals. Recommended range is 45 to 500 (90 to 1000 ms). ***Note:*** This field is not available for MMP.
	RCMNCLB	1 to 10000	*Receive minimum clear back signal* Enter the minimum time before the recognition of a clear back signal. Enter the time in 2 ms intervals. Recommended range is 45 to 500 (90 to 1000 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	SDMNCLB	0 to 10000	*Send minimum clear back signal* Enter the time that an outgoing trunk maintains the idle state after the transmission of a clear back signal. Recommended range is 45 to 500 (90 to 1000 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	RCMNRLG	50 to 1000	*Receive minimum release guard signal* Enter the minimum time before the recognition of a release guard. Enter the time in 2 ms intervals. Recommended range is 50 to 500 (100 to 1000 ms) ***Note:*** For MMP loads, the range is 0 to 6000.

LNSIGSYS type WINKSIG (continued)

Field descriptions (Sheet 6 of 9)

Field	Subfield	Entry	Explanation and action
	SDMNRLG		*Send minimum release guard signal* Enter the minimum time after the recognition of a release guard. Enter the time in 2 ms intervals. Recommended range is 50 to 500 (100 to 1000 ms) ***Note:*** For MMP loads, the range is 0 to 6000.
	RANITMO	500 to 3000	*Receive automatic number identification time* Enter the time that the outgoing end waits for an automatic number identification (ANI) request signal (a wink-type signal). Enter the time in 10 ms intervals. If the outgoing end times out before receiving the ANI request signal, the calling party receives a treatment. The type of ANI request failure treatment can be a tone or announcement entry for each route. Recommended range is 500 to 3000 (5 to 30 s). ***Note:*** For MMP loads, the range is 0 to 6000.
	RANIWMIN	50 to 80	*Receive automatic number identification wink minimum* Enter the minimum amount of time that the system maintains a received ANI wink signal for recognition. Enter the time in 2 ms intervals. Recommended range is 50 to 80 (100 to 160 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	RANIWMAX	100 to 175	*Receive automatic number identification wink maximum* Enter the maximum amount of time that the system maintains a received ANI wink signal for recognition. Enter the time in 2 ms intervals. Recommended range is 100 to 175 (200 to 350 ms). ***Note:*** For MMP loads, the range is 0 to 6000.

LNSIGSYS type WINKSIG (continued)

Field descriptions (Sheet 7 of 9)

Field	Subfield	Entry	Explanation and action
	RANISETL	25 to 2500	*Post-automatic number identification receive delay* Enter the time that the outgoing end delays before the outgoing end sends the digits of the called number. Enter the time in 2 ms intervals. The delay is necessary to allow analog facility transients to settle. Recommended range is 25 to 2500 (50 ms to 5 s). ***Note:*** For MMP loads, the range is 0 to 6000.
	SANIWK	70 to 150	*Send automatic number identification wink* Enter the time of the ANI request wink that the system sends. Enter the time in 2 ms intervals. Recommended range is 70 to 150 (140 to 3000 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	SANISETL	20 to 50	*Post-automatic number identification send delay* Enter the minimum time that the incoming end delays after the end of the ANI wink. Enter the minimum time before the incoming end sends the answer signal. Enter the time in 2 ms intervals. The delay is necessary to allow analog facility transients to settle. Recommended range is 20 to 50 (40 to 100 ms). ***Note:*** For MMP loads, the range is 0 to 6000.
	GUARDTM	50 to 1000	*Release guard time* Enter the time that an outgoing trunk remains busy after the system sends a clear forward signal. Enter the time the trunk remains busy before the outgoing trunk looks for a release guard signal. Enter the time in 10 ms intervals. Recommended range is 50 to 2000 (500 ms to 20 s). ***Note:*** This field is not available for MMP.

LNSIGSYS type WINKSIG (continued)

Field descriptions (Sheet 8 of 9)

Field	Subfield	Entry	Explanation and action
	IDLEPOL	0 or 1	*Idle polarity* Enter the value of the A-bit sent and received when idle. A value of 0 means that a clear forward signal is a transition to 0. A seizing signal is a 1. A value of 1 means a clear forward signal is 1. A seizing signal is 0. Channel units that interface to E&M signaling require a polarity of 0. Many loop signaling channel banks expect an idle polarity of 1. ***Note:*** This field is not available for MMP.
	BLKBIT	A or B	*Blocking bit* This field indicates if A-bit or B-bit blocking is necessary. ***Note:*** This field is not available for MMP. Enter A if the switching office is in the Caribbean. Enter B if the switching office is in Turkey.
	RTWPRSZG	0 to 6000	*Route two-way SZG signal* Enter the maximum amount of time the two-way trunk waits after sending the seize (SZG) signal from the incoming side. Enter the time in ms.
	RMXPTSDD	0 to 6000	Maximum timer signal for delay dial Enter the maximum value for delay dial. Enter the time in ms.
	RMXTSO	0 to 6000	*Maximum signal for two-stage outpulsing* Enter the maximum value for two-stage outpulsing wink duration.
	KPDELAY	0 to 6000	*Kick pulse delay* Enter the amount of time the outgoing trunk waits before sending the kick pulse digit for the calling number.

LNSIGSYS type WINKSIG (end)

Field descriptions (Sheet 9 of 9)

Field	Subfield	Entry	Explanation and action
	SENDANI	0 to 6000	*Send automatic number identification (ANI)* Enter the time between the ic_reg_complete and ani_wink signals.
	SENDPTS	0 to 6000	*Send PTS* Enter the length of time for the proceed to send (PTS) signal to last.
	SNDEXPTS	0 to 6000	*Send extended PTS* Enter the length of time to extend the duration of the PTS signal.

LNSMTCE

ATTENTION
This table applies to new or modified content for SN09 (DMS) that is valid through the current release.

Line maintenance

Table Line Maintenance (LNSMTCE) is part of a MAP-oriented approach to the maintenance of lines as an alternative to the existing logs system. This table provides line maintenance capabilities through two main functions: thresholding and alarm generation on line troubles, and buffering of line trouble information.

The generation of alarms is caused by line troubles that reach or exceed the operating company defined thresholds. A failure count is pegged on all software failure paths. This failure count is measured against the operating company-defined levels to determine which alarm, if any, is generated. The operating company datafills table LNSMTCE for minor, major, and critical alarms as percentages of the datafilled value in field ATMPCNT (the number of call attempts). The datafilled value in field ATMPCNT represents the number of call attempts that must take place before the failure count for the line concentrating device (LCD) or line group (LGRP) on which the line exists is decremented by one. In other words, an LCD/LGRP is given a credit of one for every ***n*** (the value in field ATMPCNT) attempts that take place on lines on that LCD/LGRP. This credit is provided by decrementing the failure count on that LCD/LGRP by one if it is non-zero.

Alarm generation is implemented by a thresholding process running once every 60 s. The thresholding process is established if the failure count of an LCD/LGRP reaches or exceeds the operating company defined alarm thresholds. The thresholding process generates the appropriate alarm based on the current trouble count and the alarm threshold levels datafilled for the specific LCD/LGRP. On generation of an alarm, a 15-min wakeup is initiated during which the alarm level may not decrease except when manually cleared. If a higher priority alarm is generated, it is set with a refreshed 15-min wakeup. The thresholding

process calculates and generates alarm levels for each LCD/LGRP according to the following algorithm:

1. Compare the adjusted failure count to the critical alarm threshold level. If the count is greater than or equal to critical, go to 5.
2. Compare the adjusted failure count to the major alarm threshold level. If the count is greater than or equal to major, go to 5.
3. Compare the adjusted failure count to the minor alarm threshold level. If the count is greater than or equal to minor, go to 5.
4. Get the next LCD/LGRP adjusted failure count since no alarm condition exists; go to 1.
5. If an alarm exists on the specific LCD /LGRPof a higher priority currently activated, go to 1. If an alarm exists of the same priority currently activated, refresh the 15-min wakeup, then go to 1. If no alarm is presently activated, generate the appropriate alarm level with a 15-min wakeup, then go to 1.

The alarm level thresholds entered by the operating company represent a percentage of the value in field ATMPCNT (call attempts). The values entered by the operating company are translated to an absolute trouble count dependent on the datafilled value in field ATMPCNT before being compared to the adjusted failure count. For example, if the value in field ATMPCNT is 200 and the value in field CPMINALM is 10, the absolute trouble count is 20.

Call attempts are pegged in the same place as the corresponding operational measurements (OM). This attempt count is used to adjust the failure count to represent more accurately the failure level on each LCD/LGRP.

The buffering capability places line trouble information in buffers for each LCD/LGRP, and lines are identified by their line equipment number (LEN) within the buffer. The operating company has the capability to allocate buffers for each LCD/LGRP in the office.

For each LCD/LGRP, a pair of buffers exists to identify the lines with problems. One of these buffers is a trouble buffer that can contain up to 10 entries representing the 10 lines on the LCD/LGRP that are experiencing the most trouble (this buffer is referred to as the upper buffer for the remainder of this description). The other buffer can contain up to five entries and is used to screen out lines with only one occurrence of a problem (this buffer is referred to as the lower buffer).

Store for the buffers can be allocated selectively by the table control of table LNSMTCE. The buffers to contain the trouble information

generated by call processing can be allocated or de-allocated by changing field CPBUFRQD in table LNSMTCE. If the buffer pair is desired, the store for the upper and lower buffers is allocated in the following manner. The upper buffer contains the 10 most recent lines on an LCD/LGRP experiencing the most trouble, that is, the lines that have the highest failure count (greater than one) and had these failures most recently. The lower buffer (up to five entries) is used to screen out members with fewer than two troubles. Field CPBUFRQD is used to allocate or de-allocate the buffers. This field takes the value Y or N. Buffers cannot be de-allocated while a continuous buffer display is in progress in the LNSTRBL sublevel of the LNS subsystem at any MAP.

The contents of the upper buffer structure are as follows:

- identification of the line (LEN)
- time of the last line trouble (yr/mon/day/hr/min/sec)
- count of the troubles on that line (integer)
- brief text trouble description

The contents of the lower buffer structure are as follows:

- identification of the line (LEN)
- time of the last line trouble (yr/mon/day/hr/min/sec)

Only the contents of the upper buffer are accessible through the LTP and MAP level LNSTRBL. The MAP level LNSTRBL is below the LNS subsystem, parallel to the LTP sublevel, and enhancements have been made to the POST command in the LTP sublevel.

If trouble occurs on a line during call processing where a log report is presently being generated, a buffering procedure is called to update the trouble buffers associated with the LCD/LGRP on which that line exists. This procedure searches the upper buffer of the LCD/LGRP for an instance of the line with the problem. If the line is found in the upper buffer, the last trouble time and the trouble description fields of the entry are updated. In addition, the trouble count field of the entry is incremented by one. If the line is not found in the upper buffer, the procedure searches the lower buffer for the line. If the line is found, the entry in the lower buffer is moved into the upper buffer. The entry being moved either fills an empty spot in the upper buffer, if one is available, or overwrites the oldest entry. If the line is not found in the lower buffer, it is placed there by filling an empty spot or overwriting the oldest entry if no empty spot is available.

An example of a line experiencing two troubles and the resulting buffer entries is shown in the following tables. The table “1st trouble, lower

buffer" shows the resulting lower buffer entry for the first trouble. The table “2nd trouble" shows that the entry from the 1st trouble, lower buffer table has moved from the lower buffer to the upper buffer. The table “2nd trouble, lower buffer" shows that the lower buffer entry is removed.

1st trouble

Upper buffer	ID	Count	Time stamp	Trouble description
0				
			.	
			.	
9				

1st trouble, lower buffer

Lower buffer	ID	Time stamp
0	219	1984/05/09 04:33:21
		.
		.
4		

2nd trouble

Upper buffer	ID	Count	Time stamp	Trouble description
0	219		1984/05/09 04:34:19	7. perm signal
			.	

2nd trouble

Upper buffer	ID	Count	Time stamp	Trouble description
9			.	

2nd trouble, lower buffer

Lower buffer	ID	Time stamp
0		
		.
		.
4		

A list of all text descriptions that can be seen in a buffer entry when it is displayed at the LNSTRBL level is shown below.

1. VACANT CODE ANNOUNCEMENT
2. NO CKT AVAILABLE : OG TRK
3. MISDIRECTED CAMA ANN.
4. UNAUTHORIZED CODE ANN.
5. EMERGENCY ANNOUNCEMENT
6. INWATS OUTSIDE VALID ZONE
7. PERMANENT SIGNAL
8. PARTIAL DIAL
9. EXTRA PULSE
10. FALSE START
11. MUTILATED PULSE
12. MUTILATED DIGIT
13. INVALID ST DIGIT RECEIVED
14. ANI OFFICE FAILURE

15. ANI NUMBER FAILURE
16. ANI TIME OUT
17. NO START DIAL : OG TRK
18. INTEGRITY FAILURE
19. INTEGRITY LOST
20. FALSE KP
21. REVERSED TRUNK : OG TRK
22. UNEXPECTED STOPDIAL:OG TRK
23. EXPECTED STOP TIMEOUT: TRK
24. CAMA POSITION FAULT
25. CAMA POSITION TROUBLE
26. ANNOUNCEMENT MACH TROUBLE
27. TRUNK RESET FAILED: OG TRK
28. TRUNK RESET : OG TRK
29. HIT DETECTED
30. PRE-ROUTE ABANDON
31. NO5 SIG VIOLATION: OG TRK
32. DIG RCVR NOISE HIGH
33. DIG RCVR NOISE MARGINAL
34. NO INTERDIGIT PAUSE
35. LARGE TWIST
36. MORE THAN TWO FREQUENCIES
37. FLUCTUATION ON MF RECEIVER
38. RINGING FAILED
39. COIN COLLECT FAILED
40. COIN RETURN FAILED
41. ANI TEST FAILED
42. COIN PRESENT TEST FAILED
43. CP IOMSG LOST
44. BAD CP IOMSG
45. ANI FAILED, ONI SUCCEEDED
46. INVALID ANI REQUEST

47. BAD KEYSET
48. LINE CARD FAULT
49. DU SYNC LOST
50. GROUND LOOP FAIL
51. ABANDON ON RP INC TRK
52. OVERALL RP TIMEOUT
53. INVALID RP DIGIT
54. UNDETERMINED RP ERROR
55. EXCESS DIGITS
56. DP PERMANENT SIGNAL
57. MF PERMANENT SIGNAL
58. DGT PERMANENT SIGNAL
59. DP RECEPTION TROUBLE
60. MF RECEPTION TROUBLE
61. DGT RECEPTION TROUBLE
62. ANI RECEPTION TROUBLE
63. ONI RECEPTION TROUBLE
64. LOCKOUT ON
65. LOCKOUT OFF
66. OUTPULSING TROUBLE: OG TRK
67. ROUTING TROUBLE
68. BIPOLAR VIOLATION
69. FOREIGN EMF DETECTED
70. FOREIGN EMF REMOVED
71. NO 3WC EXTENSION BLOCKS
72. NO PERM EXTENSION BLOCKS
73. NO TEMP EXTENSION BLOCKS
74. NO CONF CIRCUIT AVAILABLE
75. NO MULTIBLKS OR CCBS AVAIL
76. NO NETWORK CONN AVAILABLE

Table LNSMTCE is part of an optional feature available to the operating company. If this feature is present, the line logs that it replaces are

automatically suppressed. These logs are still available to the operating company and can be generated by selectively unsuppressing the required logs.

The following logs are suppressed if this feature is purchased:

- LINE102 : line lockout on report
- LINE103 : line lockout off report
- LINE104 : line trouble report
- LINE105 : permanent signal
- LINE106 : line trouble (extra pulse, perm signal)
- LINE108 : dgt reception trbl report
- LINE109 : nostart dial/integrity fail/reversed trk
- LINE110 : foreign EMF detected report
- LINE111 : foreign EMF removed report
- LINE120 : 3wc failure
- LINE204 : line trouble

Datafill sequence and implications

The suppression of the above logs is accomplished by datafilling table LOGCLASS. Field SUPPRESS of table LOGCLASS is used to suppress the log. The default class for these logs is 31; the operating company purchasing this feature must check the present datafill for table LOGCLASS. These logs may be resumed by setting the suppress value back to N (no).

Table size

Table size is statically allocated for a maximum of 256 tuples.

Datafill

The following table lists datafill for table LNSMTCE.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LMNM		see subfields	***Line module key*** This field defines the physical location of the equipment that is connected to a specific telephone line. This field appears as the LEN field in some other tables. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN" for a complete description of field LEN and associated subfields.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			Field LNMN consists of subfields SITE, FRAME, and UNIT elements of the LEN. LNMN supports the following line modules: • LM unit • LCM unit • RCT unit • RCS unit • RCU unit • SVR group • DLM shelf • LCMI unit • LRU unit • ELCM unit • LDT unit • ALCM unit • LCME unit • SRU unit • GPP group • V5 unit • TRLE unit • STAR unit • NLCM unit • IPGW unit • UEN shelf • IPE shelf • RDT unit • LGRP unit

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
CPMINALM		0 to 101	***Call processing troubles minor alarm*** Enter the percentage of failures, based on the call attempt value, that must be reached before a minor alarm is activated. If no alarm is required, enter 101. Entries outside this range are not valid. The default value is 101.
CPMAJALM		0 to 101	***Call processing troubles major alarm*** Enter the percentage of failures, based on the call attempt value, that must be reached before a major alarm is activated. If no alarm is required, enter 101. Entries outside this range are not valid. The default value is 101.
CPCRTALM		0 to 101	***Call processing troubles critical alarm*** Enter the percentage of failures, based on the successful call attempt value, that must be reached before a major alarm is activated. If no alarm is required, enter 101. Entries outside this range are not valid. The default value is 101.
ATMPCNT		1 to 32767	***Attempts counter*** Enter the number of attempts that must be reached before decrementing the failure count by one. An entry outside this range is invalid. The default value is 100.
CPBUFRQD		Y or N	***Call processing trouble buffer required*** Enter Y (yes) if a call processing trouble buffer is required. Otherwise, enter N (no).

Datafill example

The following example shows sample datafill for table LNSMTCE.

The example consists of a line on the host switching unit and one line on a remote site. If 10% of the attempts are failures, a minor alarm is activated. If 20% of the attempts are failures, a major alarm is activated. If 30% of the attempts are failures, a critical alarm is activated. For each 100 attempts the failure counter is decremented by 1. A call processing trouble buffer is required.

MAP display example for table LNSMTCE

```
          LMNM CPMINALM CPMAJALM CPCRTALM ATMPCNT CPBUFRQD
_____________________________________________________________
 HOST   00 0         10        20        30      100         Y

 REM1   02 0         10        20        30      100         Y
```

Table history

SN09 (DMS)

Table LNSMTCE, field LNMN and the reference to LCD updated by CR Q00959081.

LNTDM

Table name

Line Time Division Multiplex Table

Functional description

Table LNTDM contains ISDN loop to time division multiplexed (TDM) mappings. Entries in table LNTDM are automatically created whenever an ISDN line in table LNINV is entered with a status of WORKING or an existing ISDN line is changed from status HASU to status WORKING.

Table LNTDM can only be changed manually, with the table editor, during dump and restore. The Service Order System (SERVORD) command CISG (change ISDN service group), updates this table.

Datafill sequence and implications

The following tables must be datafilled before table LNTDM:

- LCMINV
- ISGTDM

Table size

0 to 32,767 tuples

Datafill

The following table lists datafill for table LNTDM.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LINE		0 to 127	*Line equipment number* This field specifies the external LEN.
ISGNO		0 to 255	*ISDN service group number* This field displays the ISG number.
CHNLNO		1 to 31	*Channel number* This field displays the channel number on the ISG.
TDMGROUP		1 to 120	*Time division multiplex group* This field displays which TDM group is using the channel specified in field CHNLNO.
TDMSLOT		0 to 3	*Time division multiplexed slot* This field indicates which timeslot in field TDMGROUP is used by the LEN indicated in field LINE.

LNTDM (end)

Datafill example

The following example shows sample datafill for table LNTDM.

MAP display example for table LNTDM

```
          LINE  ISGNO  CHNLNO  TDMGROUP   TDMSLOT
-------------------------------------------------------
HOST 01 0 09 15      2      16        63         1
HOST 01 0 00 08      0      1         1          1
HOST 01 0 00 09      0      1         1          1
```

LNTHRSH

Table name

Lines and Thresholds Management

Functional description

Table LNTHRSH functions as a look-up table to preserve the correspondence between lines and threshold values during dump and restore. Layer 1 basic line monitoring (BLM) threshold values for integrated services digital network (ISDN) two binary one quaternary (2B1Q) and S/T ISDN line card (S/T-ISLC) subscriber U-loops are datafilled in table BLMTHRSH. Table LNTHRSH uses the key field BLMIDX in table BLMTHRSH to relate the threshold values to the line equipment number (LEN). LEN is the key field to table LNTHRSH.

Table LNTHRSH preserves the threshold index information for 2B1Q and S/T-ISLC loops over dump and restore, and it restores the threshold index information for loops datafilled following an image dump.

Entries are valid only for 2B1Q and S/T-ISLC loops residing on enhanced ISDN line concentrating modules (LCME) and small remote units (SRU).

Datafill sequence and implications

The following tables must be datafilled before table LNTHRSH:

- BLMTHRSH
- LNINV

Table size

0 to (the number of LCMEs or SRUs datafilled $\times$ 448) tuples

LNTHRSH (continued)

Datafill

The following table lists datafill for table LNTHRSH.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LEN		see subfields	Line equipment number This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN" for a complete description of field LEN and associated subfields. Field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.
BLMIDX		0 to 15	Basic line monitoring index Enter the index into table BLMTHRSH.
LOSW		ON or OFF	Loss of synchronous word Enter ON to enable loss of synchronous word (LOSW) reporting. Enter OFF to disable LOSW reporting. If the LEN is an S/T-ISLC, LOSW must to be set to ON.
LOS		ON or OFF	Loss of signal Enter ON to enable loss of signal (LOS) reporting. Enter OFF to disable LOS reporting. If the LEN is an S/T-ISLC, LOS must be set to ON.

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LOSDG		ON or OFF	Loss of signal with dying gasp Enter ON to enable loss of signal with dying gasp (LOSDG) reporting. Enter OFF to disable LOSDG reporting. If the LEN is an S/T-ISLC, LOSDG must be set to ON.
NTM		ON or OFF	Nt1 tst mode Enter ON to enable NT1 test mode (NTM) reporting. Enter OFF to disable NTM reporting. If the LEN is an S/T-ISLC, NTM must be set to OFF.
TSYNC		ON or OFF	T interface synchronization Enter ON to enable T-interface synchronization (TSYNC) reporting. Enter OFF to disable TSYNC reporting.
PERF		ON or OFF	Performance this field controls whether a LINE131 log is generated on a line basis when a linecard or sub-tending line unit exceeds a provisioned threshold. This field also controls whether a LINE148 PM node mismatch is generated on a per line basis. A log is generated only if both the PERF filed and the PFCVAR tuple ISDN_PERFORMANCE_MON_ALARM are set to ON. Enter ON to enable performance monitoring (PM). Enter OFF to disable PM.

LNTHRSH (continued)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
PMODE		PATH, SEG	Performance Monitoring Mode The PMODE field determines the type of data being stored on the line units. The two types are PATH and SEG (segmented). PATH is the default value. PATH is entered when the cyclic redundancy check (CRC) is initially calculated at the source terminal (ISLC or NT1) of the digital subscriber line (DSL). SEG is entered when each segment of the loop is independently monitored (CRC are corrected at each sub-tending line unit) and there is a threshold for each direction of transmission. The QLAYER command (LTPISDN level) can be used to view the PM error counts.
MPLUFAIL		ON, OFF	mp-eoc Line Unit Failure The values for this field are ON (log failure) or OFF (do not log failure). The default is ON. This field controls whether a Line145 mp-eoc node failure log is generated when a line unit reports an internal failure (node failure) on an individual loop basis. An mp-eoc node failure log is generated only if both the MPLUFAIL field and the OFCVAR ISDN_MPLU_NODE_FAILURE_ALARM parameter are set to ON.

Datafill example

The following example shows sample datafill for table LNTHRSH.

MAP display example for table LNTHRSH

```
LEN            BLMIDX LOSW LOS LOSDG NTM TSYNC PERF PMODE  MPLUFAIL
_____________________________________________________________________
SITE 67 0 08 14  3    ON   OFF ON    ON  OFF   ON   SEG    ON
```

Table history

NA008

Field PMODE and MPLUFAIL was added.

LEC002, CDN002, LET002

SRU references were added.

BCS35

Table LNTHRSH was introduced.

LOGCLASS

Table name

Log Class Table

Functional description

The following information for each report name (REPNAME) appears in table LOGCLASS:

- the class assignment of the log name and report number
- the threshold that specifies which messages the terminal prints or displays
- if the system generates log messages
- the time, in minutes, when the register count associated with a threshold report resets to 0 (zero)
- if a log is a system log (SYSLOG)

Note: Field SYSLOG allows this characteristic to remain during a dump and restore. Field SYSLOG does not require the use of SYSLOG command in the LOGUTIL facility at the maintenance and administration position (MAP) terminal. All SYSLOGs appear in table LOGCLASS with field SYSLOG = Y from the external (EXT) files at loadbuild time.

For any log name that does not appear in table LOGCLASS, the values in fields CLASS and THRESHLD are 0.

Table LOGCLASS allows a maximum of 100 different time units (TUNITS). If the field THRESHLD is 0 (print all reports), field TUNITS must be 0 or <0.

The following office parameters can affect the production of the log reports:

- LOG_CENTRAL_BUFFER_SIZE in table OFCVAR
- LOG_DEVICE_BUFFER_SIZE in table OFCVAR
- LOG_CENTRAL_POLLING_MILLI_SECOND in table OFCSTD
- SYSLOG_ACCESS in table OFCVAR

Refer to the *Input/Output System Reference Manual*, 297-1001-129 for additional information on log systems.

Datafill sequence and meaning

You do not need to enter data in other tables before you enter data in table LOGCLASS.

Table size

The system automatically allocates memory for a maximum of 512 tuples.

Datafill

Datafill for table LOGCLASS appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
REPNAME		see subfields	*Report name*. This field contains subfields LOGNAME and REPNUM.
	LOGNAME	alphabetical (up to 4)	*Log name*. Enter the log name. Refer to the *Log Report Reference Manual* for a list of log names in the logs system.
	REPNUM	000 to 999 or -1	*Report number*. Enter the report number. If all report numbers are necessary, enter -1. ***Note:*** If a specified report name uses the report number of -1 you must enter data in the report. Enter data in the report before you enter data in the other logs with the same report name. Any entry outside the range of indicated values for this field is not correct.
CLASS		0 to 31	*Class*. Enter the class number associated with the report name.
THRESHLD		0 to 255	*Threshold*. Enter the number to specify which messages the system prints or displays. Enter 0 to generate all messages. If threshold is 1 to 255, office parameter THRESHOLD_IS_SAMPLING in table OFCVAR controls the action for log thresholding.
SUPPRESS		Y or N	*Suppress*. Enter Y (yes) if the system does not print or display a report or log. Enter N (no) if the system generates a report or log. The office parameter BUFFER_THRESHOLDED_REPORTS in table OFCVAR can control the disposal of reports that the system does not print. The system does not print the reports because of log thresholding. This condition occurs if the entry in field THRESHLD is 1 to 255 and if the system generates a report.

LOGCLASS (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TUNITS		-32768 to 32767	*Time units*. Enter the time, in minutes, when the register count associated with a threshold report resets to 0. This table allows a maximum of 100 unique TUNITS. Enter 0 or a negative value to generate all reports. Enter 0 or a negative value (<0) if TUNITS = 0 if a reset is not necessary.
SYSLOG		Y or N	*System log*. Enter Y (yes) if log is a system log. Enter N (no) if the log is not a system log. ***Note:*** All SYSLOG that are Y appear in table LOGCLASS from the external (EXT) files at loadbuild.

Datafill example

Sample datafill for table LOGCLASS appears in the following example.

MAP example for table LOGCLASS

```
REPNAME    CLASS THRESHLD SUPPRESS TUNITS SYSLOG
_____________________________________________________
SWCT –1      0       0        N      –1      Y
OMPR 200    22       0        N       0      N
SYNC 103     0       0        N       0      Y
```

LOGDEV

Table name

Log Device Table

Functional description

Table LOGDEV lists the log classes the system can print or appear at each terminal or data device. A log is an output message.

Table LOGDEV defines the alternate terminal or data device to which the system sends messages. The system sends these messages if the main terminal device is not operational.

Refer to table LOGCLASS for related information.

Datafill sequence and meaning

Enter data in table TERMDEV before you enter data in table LOGDEV.

The office parameters that table LOGDEV interacts with appear in the following list:

- SCC2_LOGS in table OFCOPT
- LOG_PRIORITIZATION in table OFCENG for feature BR0536 [Critical Message Prioritization]

Table size

The system allocates memory for 32 terminal devices.

Datafill

Datafill for table LOGDEV appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
DEV		alphanumeric (a maximum of 12 characters)	*Device*. Enter the name in table TERMDEV for the terminal device. ***Note:*** This field can be SCC2 if the office parameter SCC2_LOGS in table OFCOPT is Y (yes) and field PRIORITY is Y. This field can be SCC2 if field FORMAT is STD and field PRIORITY is N (no).

LOGDEV (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
ALT		alphanumeric (a maximum of 12 characters) or NIL	*Alternate*. Enter the name in table TERMDEV for the terminal device that receives logs. The system sends logs to this terminal device if the main terminal device is not in operation. If an alternate device is not necessary, enter NIL.
CLASSES		vector of numeric values (0 to 31) with delimiter characters (,), -, and +	*Classes*. Enter the class numbers the system assigns to the terminal device. Enter ((open bracket) if the entry is the first record for the terminal device. If the entry is a block of classes in sequence, enter the first and last class in the block. Separate the first and last class with a - (dash). For example, if classes are 1, 2, 3, 4 and 5, enter 1-5. Separate each log or block of log classes with a blank space. Enter + if additional information for this field appears in the next record. If this condition does not apply, enter) (close bracket) to indicate the end of the tuple. You can use the table editor of the switch to add a separate entry. A single quotation mark must precede the open bracket. A single quotation mark must follow the close bracket. An example of the use of the quotation marks is '(22 24)'.
FORMAT		SCC2 or STD	*Format*. Enter SCC2 for the AT&T #2 Switching Control Center format. Enter STD for the standard format. ***Note:*** This field can only be SCC2 if office parameter SCC2_LOGS in table OFCOPT is Y.
PRIORITY		Y or N	*Critical message prioritization*. Enter Y if the alarm level sets the prioritization of the reports. The system generates the report with the highest alarm level. Enter N if prioritization is not necessary and the system generates the reports in order. ***Note:*** This field can only be Y if office parameter LOG_PRIORITIZATION in table OFCENG is Y.

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
GUAR		Y or N	*Guaranteed device*. Enter Y if the system guarantees the device. For example, the device continues to run with the call processing or maintenance load. If the condition is not for Y, enter N. The default value for this field is N.

Datafill example

Sample datafill for table LOGDEV appears in the following example. In the example, the system guarantees device NWMPRT. The datafill a CMAP device requires appears in the third tuple.

MAP example for table LOGDEV

```
         DEV           ALT
                                                          CLASSES
FORMAT PRIORITY GUAR
_____________________________________________________________________
      NWMPRT        MAPPRT
                                                          (22–24)
   STD         Y    Y

       TTPPRT          NIL
                                                            (10)
   STD         Y    N

        CMAP           NIL
                                                           (0–31)
   SCC2        Y    N
```

Table history

BCS36

During BCS36, the system corrects entry NONE in field ALT to NIL.

LOGDEV (end)

Additional information

This section provides information on how to enter data in table LOGDEV for specified applications. This section provides information on product descriptions related to table LOGDEV.

Critical Message Prioritization

Feature BR0536 (Critical Message Prioritization) provides an optional method of report prioritization in the log system. The alarm levels of the log system form the base for prioritization. The system can turn message prioritization on or off for each specified log device.

If prioritization is on for a specified device, the system generates the report with the highest alarm level. The system outputs logs with the same alarm level in order.

If the system did not enable the feature for a specified device, the system generates reports in order. If the system did not install the feature, the system generates reports in order.

The SAVELOG is a non-optional log and is a part of this feature. A SAVELOG prevents the loss of critical data during restarts.

To enable Critical Message Prioritization, office parameter LOG_PRIORITIZATION in table OFCENG must be Y.

Guaranteed background tasks

If the DMS is under a heavy load, one log device must continue to run with the call processing or maintenance load. Guaranteed background tasks accomplish this functionality. The guaranteed background tasks are limited in number. These tasks run more than other background tasks.

In table LOGDEV, the system can guarantee one device. The operating company assigns this device through datafill in table LOGDEV. The system routes critical logs to this device.

Log device CMAP

The system enters log device CMAP in table LOGDEV. This device permits a CMAP user to open a DMS Dynamic Network Control (DNC) log channel. This log channel resumes after all communication link failures. These link failures include restarts. The system starts logs to this device after a reload restart.

LOGINFO

Table name

Log control information

Functional description

Use this table to transfer temporary log control information during a software upgrade. Use this table to maintain temporary log control information during a MTSWACT. The table contains a snapshot of temporary log control information. For example, the settings the LOGUTIL commands display: LISTREPS SPECIAL, and LISTREPS CLASS n, where n is 0 to 31.

Datafill sequence and meaning

Table LOGCLASS must contain data before table LOGINFO.

Table size

The table size is 0 to 16384 tuples.

The size of table LOGINFO depends on the amount of data the system stores in the log data structure. The system hides table LOGINFO during normal operation. Table LOGINFO is empty during normal operation.

Datafill

Datafill for table LOGINFO appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		0 to 32767	The numeric key to the table in the range 0 to 32767.
LOGNAME		a maximum of four characters	The name of the log that this tuple represents.
REPNUM		-32768 to 32767	The report number that this tuple represents.
CLASS		0 to 31	Identifies the class of the report that this tuple represents.
THRESHLD		0 to 255	Indicates the threshold value of the report.

LOGINFO (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
SUPPRESS		Y or N	Indicates if the system suppresses (Y) the report that this tuple represents, or not (N).
TUNITS		-32768 to 32767	Indicates the threshold timing value of the report that this tuple represents.

Datafill example

Sample datafill for table LOGINFO appears in the following example.

MAP example for table LOGINFO

```
KEY LOGNAME REPNUM CLASS THRESHLD SUPPRESS TUNITS
_____________________________________________________
0     LOGT   900    2       0         N       -1
1      SOS   100    0       0         Y       -1
2      SOS   101    0      50         N       -1
```

Table history

BASE08

The introduction of this table occurred in CSP07, BASE08.

Additional information

During a software upgrade, the system takes a snapshot of the log data. The system puts this snapshot in table LOGINFO in the load that is present. The system transfers table LOGINFO to the new load. The system holds this table for processing until the POSTSWACT time frame. During this time, the system applies the temporary log control data held in table LOGINFO to the new load. The system clears the table. The system hides table LOGINFO when the software upgrade completes. Table LOGINFO is empty at the completion of the software upgrade.

LPBKMEM

Table name

Loopback Trunk Member Table

Functional description

Table LPBKMEM identifies the location of both ends of each loopback trunk defined in a DMS office. Each tuple in table LPBKMEM specifies the common language location identifier (CLLI) and external trunk number of both the outgoing end and the incoming end of a loopback trunk. Each trunk member identified in this table must be of group type LPBK.

The key to tuples in table LPBKMEM consists of the CLLI and external trunk name of the outgoing end of loopback trunks. The information contained in the other fields for each tuple consists of the incoming end of the trunk identified in the key field.

Datafill sequence and implications

Table TRKMEM must be datafilled before table LPBKMEM.

Both the incoming and outgoing ends of loopback (LPBK) trunks must be datafilled in table TRKMEM before they can be entered in table LPBKMEM. Also, LPBK trunks cannot be deleted from table TRKMEM as long as these trunks still appear in table LPBKMEM.

Table size

0 to 20 tuples

In order to limit the size of the internal loopback trunk route list, the number of different outgoing loopback trunk groups that can be datafilled in this table is restricted to a maximum of 20.

LPBKMEM (continued)

Datafill

The following table lists datafill for table LPBKMEM.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
OGTRKID		see subfields	*Outgoing loopback trunk identifier* This field is the key to the table. It identifies the location of the outgoing end of a loopback trunk. Members specified in this field must be of group type LPBK and have a direction of OG (outgoing). This field consists of subfields CLLI and MEMNAME.
	CLLI	alphanumeric (1 to 16 characters)	*Common language location identifier* Enter the code assigned in table CLLI that identifies the trunk group of which the outgoing end of the loopback trunk is a member.
	MEMNAME	numeric (0 to 9999)	*Member name* Enter the external trunk number assigned to the outgoing loopback trunk.
ICTRKID		see subfields	*Incoming loopback trunk identifier* Members specified in this field must be of group type LPBK and have a direction of IC (incoming). This field consists of subfields CLLI and EXTRKNM.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	CLLI	alphanumeric (1 to 16 characters)	*Common language location identifier* Enter the code assigned in table CLLI that identifies the trunk group of which the incoming end of the loopback trunk is a member.
	EXTRKNM	numeric (0 to 9999)	*External trunk number* Enter the external trunk number assigned to the outgoing loopback trunk.

Datafill example

The following example shows sample datafill for table LPBKMEM.

MAP display example for table LPBKMEM

```
OGTRKID          ICTRKID
_____________________________________________________
OTWAONLPOG01 0   OTWAONLPIC02 0
```

LSCFLAGS

Table name

Line Screening Code Flag Table

Functional description

Table LSCFLAGS is required in a local switching unit with the Integrated Business Network (IBN) feature.

The line screening code flag number indexes this table.

Each line screening code flag number specifies whether each of the 32 line screening codes has access to the line screening code flag number. The line screening code flag numbers are assigned to the outgoing or the outgoing side of a two-way IBN trunk group and to the virtual facility group (VFG).

The line screening codes are assigned to IBN lines, incoming IBN trunk groups, and the incoming side of two-way IBN trunk groups.

If a line screening code is not permitted access to a specified line screening code flag number, the treatment or incoming call identification code to which the originator is routed is specified in the outgoing trunk group, or the outgoing side of a two-way IBN trunk group that is assigned to the digit or digits dialed.

Partitioned Table Editor feature

In DMS offices with feature BC1459, Partitioned Table Editor (PTE), the operating company can authorize a non operating company user to edit specified tuples of table LSCFLAGS using PTE. To access a tuple in table LSCFLAGS, the line screening code flag number (LSC_NO) must be owned by the user. For example, if the datafill for table DATAOWNR is:

KEY OWNER: *LSCFLAGS 3 CARLING*

the non operating company, CARLING, has access to the tuple that has an LSC_NO (the key) of 3. No other tuple can be viewed by user CARLING unless tuples owned by other users are classified as public in table OWNER. The PTE feature enables the operating company to limit edit-access to a table for a specified user to read-only, change-only, or add and delete tuples.

Refer to table OWNER for a more complete description of PTE.

Datafill sequence and implications

There is no requirement to datafill other tables prior to table LSCFLAGS.

Table size

Memory is automatically allocated for the maximum number of line screening code flag numbers, 256.

Datafill

The following table lists datafill for table LSCFLAGS.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfield	*Key* This field consists of subfield LSC_NO.
	LSC_NO	0 to 255or blank	*Line screening code flag number* For the first entry in field LSC_NO, enter the line screening code flag number. Otherwise, leave this field blank.
LSCFLAGL		B0 to B31	*Line screening code flag list* Enter each line screening code that has access to the line screening code flag number. Each of the line screening codes must be prefixed with a B (for example, line screening code 1 is entered as B1). Each line screening code must be separated by a blank space.

Datafill example

The following example shows sample datafill for table LSCFLAGS.

In the example, lines and incoming on two-way IBN trunk group with line screening codes 1 or 2 are allowed to terminate to outgoing or two-way trunk groups with line screening flag number 3.

LSCFLAGS (end)

MAP display example for table LSCFLAGS

```
KEY                                          LSCFLAGL
_____________________________________________________

  3                                       ( B1) ( B2)$
```

LSPINFO

Table name

Local Service Provider Information

Functional description

Table LSPINFO provides the capability to inventory local service providers and their attributes. The Local Service Provider (LSP) must be in this table before account ownership of a line, trunk, or customer group can be established.

Table LSPINFO allows for the administration and provisioning of the following:

- LSP name: 1 to 16 character string defining the name of the LSP
- LSP identification code: a four character alphanumeric identification code
- LSP context identifier AMA options

Note: For information on activating automatic message accounting (AMA) for LSPs, refer to the feature “AMA Support for TRA".

Datafill sequence and implications

There is no requirement to datafill other tables before table LSPINFO.

Table size

0 through 16127 tuples

Datafill

The following table lists datafill for table LSPINFO.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LSPNAME		1 to 16 characters	*Local Service Provider name.* This name is used in provisioning the LSP with lines or trunks.

LSPINFO (continued)

Field descriptions (Sheet 2 of 3)

LSPI		four alphanumeric characters in the range of 0-9 and A-Z	*Local Service Provider identifier.* A four digit alphanumeric identifier of the LSP. Each LSPI must be unique.
OPTION		UNBUNDLED, NATIVE, RESOLD	*Option.* UNBUNDLED controls AMA records for calls that originate or terminate on unbundled lines for an LSP. NATIVE controls AMA records for calls that originate or terminate on native lines for an LSP. RESOLD controls AMA records for calls that originate or terminate on resold lines for an LSP. Datafill refinements APPEND_338, ORIG_AMA, TERM_AMA, CIRC_USAGE, ORIG_UNANS, and TERM_UNANS.
	APPEND_338	Y, N	This field provides control to append MC338 to AMA records, independent of the forced LSPI recording controls (for example, a single field provides control to append MC338 to existing and forced records).
	ORIG_AMA	Y, N	*Originating AMA.* This field controls originating AMA for lines with calls that are not normally billable.
	TERM_AMA	Y, N	*Terminating AMA.* This field controls terminating AMA for lines with calls that are not normally billable.
	CIRC_USAGE	Y, N	*Circuit usage.* his field generates the circuit usage module with the AMA record lines.

Field descriptions (Sheet 3 of 3)

ORIG_UNANS	Y, N	*Original Unanswered.* This field provides independent control for unanswered originating call attempts on a per-context identifier basis.
TERM_UNANS	Y, N	*Terminating Unanswered.* This field provides independent control for unanswered terminating call attempts on a per-context identifier basis.

Datafill example

The following example shows sample datafill for table LSPINFO.

MAP display for table LSPINFO

```
LSPINFO

LSPNAME   LSPI   OPTION
_____________________________________________________________
LEC1  AA01  (NATIVE N N N N)
LEC2  AA02  (UNBUNDLED Y Y Y Y) (RESOLD Y Y Y Y)
LEC3  AA03  (RESOLD Y Y Y N N N)
LEC4  AA04  (RESOLD Y Y Y N N N) (UNBUNDLED Y Y Y Y Y Y)
```

Table history

NA010

Removed subfield UNANSWERED and replaced it with subfields ORIG_UNANS and TERM_UNANS. Also added subfield APPEND_338.

NA009

Added table LSPINFO.

LTCALLS

Table name

Logical Terminal Calls

Functional description

Table LTCALLS stores service-related data, such as translations, that the DMS switch associates with the call type. The DMS switch uses a key and logical terminal identifier (LTID) in field LTID to access table LTCALLS. There are three parts to an LTID. The following lists the parts:

- logical terminal group (field LTGRP)
- logical terminal number (field LTNUM)
- call type (field CALLTYPE)

Datafill sequence and implications

The following tables must be datafilled before table LTCALLS:

- LINEATTR
- OFRT
- IBNRTE
- LTDEF

Note 1: When the option is SIDXLA, enter data in table ISAXLA before table LTCALLS.

Note 2: If the option in field LTCOPT is EA, first enter the carrier name in tables OCCNAME and OCCINFO before you enter the carrier name in refinement PIC. If the option in field LTCOPT is LPIC, enter the carrier name in tables OCCNAME and OCCINFO before you enter the carrier name in refinement LCARRIER.

Table size

0 to 196 224 tuples

Datafill

The following table lists datafill for table LTCALLS.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
LTID		see subfields	Logical terminal identifier. This field consists of subfields LTGRP, LTNUM, and CALLTYPE.
	LTGRP	alphanumeric (up to 8 characters)	Logical terminal group. Enter the logical terminal group.
	LTNUM	1 to 1022	Logical terminal number. Enter the logical terminal number within the group.
	CALLTYPE	ASDS, LDS, FX, INWATS, PUB, TIE, WATS, PVT, HM, SCOCS	Call type. Enter the call type associated with the LTID. The DMS switch can associate more than one call type with the same identifier. ASDS (Accunet Switched Digital Service) is an integrated services access (ISA) route selector used to route AT&T Accunet calls. LDS (long distance service) is an ISA route selector used to route AT&T World Connect (international) calls. FX (foreign exchange) provides a customer's location with the equivalent of local service from a distant exchange. INWATS (Inward Wide Area Telecommunications Service) is a form of long distance service that allows a subscriber to receive calls originating within specified service areas, without a charge to the caller.

Note 1: NIPRI supports only CALLTYPEs HM, PUB, SCOCS, TIE, FX, INWATS, and WATS.

Note 2: NIPRI on MSL-100 system supports CALLTYPEs PUB, TIE, FX, INWATS, and WATS.

Note 3: Table LTCALLS accepts CALLTYPE PVT as a valid entry but it is not supported by the NI-2 standard, and an error message is generated.

LTCALLS (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	CALLTYPE (continued)		PUB (public). A carrier can provide this call type for many customers. TIE is a type of call that occurs on private lines between private branch exchanges (PBXs). WATS (Wide Area Telecommunications Service) is provided by telephone companies to permit customers to make calls over an access line to telephones in a specific zone. ***Note:*** Only, HM, SCOCS, PUB, TIE, FX, INWATS, and WATS are valid CALLTYPES for Call-by-CALL (CBC) features on NIPRI interfaces. The following message is generated if in the corresponding tuple in table LTDEF, field LTCLASS = PRA, subfield VARIANT = NIPRI, and a change to CALLTYPE = PVT is attempted. `ERROR: Private service type is not supported nor defined for NI Call-by-Call.`
	CALLTYPE (continued)		PVT (private) provides private telephone services to a particular organization. ***Note:*** See the preceding note before attempting to change field CALLTYPE to PVT if the corresponding tuple in table LTDEF field LTCLASS = PRA and VARIANT = NIPRI. HM (Hotel/Motel) provides for hotel and motel services. SCOCS (Selective Class of Call Screening) is an originating-only service that allows several distinct classes of service to be associated with a single PRI.

Note 1: NIPRI supports only CALLTYPEs HM, PUB, SCOCS, TIE, FX, INWATS, and WATS.

Note 2: NIPRI on MSL-100 system supports CALLTYPEs PUB, TIE, FX, INWATS, and WATS.

Note 3: Table LTCALLS accepts CALLTYPE PVT as a valid entry but it is not supported by the NI-2 standard, and an error message is generated.

LTCALLS (continued)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
XLARTSEL		see subfield	Translation route selector This field consists of subfield XLARTE.
	XLARTE	RTEREF, IBNRTE, XLAIBN, XLALEC	Translation route Enter the translation route selector as follows: • Enter RTEREF if translation is done by a specific table and index, such as OFRT, IBNRTE, and other routing tables. • Enter IBNRTE to indicate the IBN route. • Enter XLAIBN for integrated business network (IBN) translations. This selection is used only in PBX or Centrex offices. • Enter XLALEC for local exchange carrier translations, such as POTS (plain ordinary telephone service), or in PBX or Centrex type offices. If the entry in this field is XLALEC, and the entry in subfield CALLTYPE is PVT, INWATS, or TIE, the switch requires no other datafill.
Note 1: NIPRI supports only CALLTYPEs HM, PUB, SCOCS, TIE, FX, INWATS, and WATS. ***Note 2:*** NIPRI on MSL-100 system supports CALLTYPEs PUB, TIE, FX, INWATS, and WATS. ***Note 3:*** Table LTCALLS accepts CALLTYPE PVT as a valid entry but it is not supported by the NI-2 standard, and an error message is generated.			

LTCALLS (continued)

XLARTE = RTEREF

If the entry in subfield XLARTE is RTEREF, datafill refinements RTEID and INDEX as described in the following table.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	RTEID	IBNRTE, IBNRT2, IBNRT3, IBNRT4, OFR2, OFR3, OFR4, OFRT, SERVICE, TOPS	Route index. Enter the routing table. Any entry outside the range indicated for this field is invalid.
	INDEX	0 to 1023 or alphanumeric (up to 6 digits)	Index. Enter the number that is assigned to the route list in the table or tables to which translations routes. If the entry in refinement RTEID is SERVICE, enter a value between 1 and 99. If the entry in refinement RTEID is TOPS, enter the call origination. Refer to table TOPS.

XLARTE = XLAIBN

If the entry in subfield XLARTE is XLAIBN, datafill refinements LINEATTR, CUSTGRP, SUBGRP, and NCOS as described in the following table.

Field descriptions for conditional datafil (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	LINEATTR	alphanumeric (up to 16 characters)	Line attributes index. Enter the index into table LINEATTR for service-related data.
	CUSTGRP	alphanumeric (up to 16 characters)	Customer group name. Enter the customer name that is associated with an IBN station.

Field descriptions for conditional datafil (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	SUBGRP	0 to 7	Subgroup number. Enter the subgroup number that further defines the selection of the CUSTGRP.
	NCOS	0 to 511	Network class of service. Enter the network class of service (NCOS) that determines the facilities to which each network user has access.

XLARTE = XLALEC

If the entry in subfield XLARTE is XLALEC, datafill refinement LINEATTR as described in the following table.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	LINEATTR	alphanumeric (1 to 16 characters)	Line attributes index. Enter the index into table LINEATTR for service-related data.

LTCALLS (continued)

XLARTE = all entries

For all entries in subfield XLARTE, datafill refinement OPTIONS as described in the following table.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	OPTIONS	see subfield	Option. This field consists of subfield LTCOPT.
	LTCOPT	EA, INCLID, LPIC, SIDXLA	Logical terminal option. Enter EA to allow equal access for all connected inter-LATA and international carriers, and datafill refinements PIC and CHOICE. EA is valid if the entry in field CALLTYP is PUB. Enter INCLID to allow ISDN primary rate interface (PRI) calling number delivery (CND) screening capabilities. Enter LPIC, and datafill refinements LCARRIER and LCHOICE, to implement the enhancement Intra-LATA Competition. LTCOPT = LPIC allows equal access for all connected intra-LATA calls. LPIC is valid if the entry in field CALLTYP is PUB and the entry in field XLARTE is XLALEC or XLAIBN. Enter SIDXLA to allow service identifier (SID) routing on a specific PRI ISA call type. Any entry outside the range indicated for this field is invalid.

LTCOPT = EA

If the entry in subfield LTCOPT is EA, datafill refinements PIC and CHOICE as described in the following table.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	PIC	IC_INC_CARRIER_NAME	Primary inter-LATA carrier. Enter the primary inter-LATA carrier name, which must first be datafilled in tables OCCNAME and OCCINFO.
	CHOICE	Y or N	Choice. Enter Y (yes) to indicate whether a 10XXX equal access plan (EAP) prefix can be used to specify an alternate other common carrier (OCC). Otherwise, enter N (no).
Note: See LTCOPT = LPIC for more information about LCHOICE for LTCOPT = EA. If SOC EQA00015 is IDLE and LTCOPT = EA, the CHOICE data option will reference the PIC not the correct option LCHOICE.			

LTCALLS (continued)

LTCOPT = INCLID

If the entry in subfield LTCOPT is INCLID, datafill refinement CLIDFEAT as described in the following table.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	CLIDFEAT	NTWKOVRD or SUPPRESS	Calling line identifier display feature. This field specifies which CND service enhancement is activated. Enter NTWKOVRD to override calling line identifier (CLID) restrictions imposed by table CUSTNTWK. This capability only applies if the PRI trunk terminates directly to a line agent with display capability. The following options are not affected: • option SUPPRESS in tables DNATTRS, DNGRPS, and NETNAMES • option CNDBO (calling number delivery blocking override) in table CUSTSTN • the PRI CND screening through option CGNDELV in table LTDATA The entry SUPPRESS restricts the presentation of the calling party number. ***Note:*** This capability does not affect presentation of the calling party name. ***Note 1:*** The presentation indicator (PI) for the calling party number (CGN) is set to presentation restricted. The switch does not discard the digits from the CGN information element (IE). ***Note 2:*** The SUPPRESS capability is active only if the call is incoming on the PRI. To prevent CND for the outgoing direction, see option CGNDELV in table LTDATA.

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	CLIDFEAT continued)		***Note:*** The NTWKOVRD and SUPPRESS capabilities are not compatible with the following options: attendant console interworking non-call-associative options, such as network executive message waiting (NEMW) ***Note:*** SUPPRESS and NTWKOVRD cannot both be present in the same tuple because option INCLID can only be specified once for each key.

LTCOPT = LPIC

If the entry in subfield LTCOPT is LPIC, datafill refinements LCARRIER and LCHOICE as described in the following table.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	LCARRIER	alphanumeric carrier name	Primary intraLATA carrier name. Enter the prescribed carrier name. The carrier name must be datafilled in table OCCNAME and OCCINFO.
	LCHOICE	Y or N	IntraLATA choice. Enter Y (yes) to indicate if the prescribed carrier can be overridden by the specified carrier. Otherwise, enter N (no).

Note 1: If subfield CALLTYPE=WATS (OUTWATS) the LPIC option is invoked through Virtual Terminal Group (VTG).

Note 2: Option LPIC is SOC controlled (EQA00015). See the following table for more information about route selection controlled by this feature.

LTCALLS (continued)

SOC control for LTCOPT=LPIC

SOC #	STATE	Option data referenced
EQA00015	ON	LCHOICE of LPIC
EQA00015	IDLE	CHOICE of PIC (see LTCOPT = EA)

LTCOPT=SIDXLA

If the entry in subfield LTCOPT is SIDXLA, datafill refinements RTRNAME, TREAT_NO_SID, NO_CALL_SCREEN, and ROUTE_ON_XLARTE as described in the following table.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	RTRNAME	alphanumeric (vector of up to 8 characters)	Router name. This field is the first part of the key that indexes table ISAXLA. Enter the router name.
	TREAT_ NO_SID	Y or N	Treatment with no service identifier. This field determines whether calls that do not have an associated SID are sent to treatment. Enter Y (yes) to indicate that the call is sent to treatment. Enter N (no) to route the call using the numbering plan indicator (NPI), network specific facility (NSF), and the called digits.
	NO_CALL_ SCREEN	Y or N	No call screen. This field allows the operating company to avoid call screening on the line attribute index. Enter Y to indicate that validation is not done on the directory number. Enter N to indicate that call screening is done using the line attribute index defined in field LINEATTR.

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ROUTE_ ON_ XLARTE	Y or N	Route on translations route. This field determines whether a call is routed through public or private translations based on the entry in field XLARTE (XLALEC for public and XLAIBN for private) rather than the NPI in the setup message. Enter Y to indicate that the XLARTE overrides the NPI. Enter N to indicate that the NPI determines the type of translation.

Datafill example

The following example shows sample datafill for table LTCALLS.

MAP display example for table LTCALLS

```
              LTID                            XLARTSEL
                                                                  OPTIONS
 ____________________________________________________________________________

ISDN  556    HM  XLAIBN  600    COMKODAK  0  0  $

ISDN  557  SCOCS XLAIBN  600    COMKODAK  0  0 (SIDXLA SCOCS Y Y N) $

ISDN  558    PUB XLAIBN  600    COMKODAK  0  0  $

ISDN  559    PUB XLAIBN  600    COMKODAK  0  0  $

PRAIC 18     PUB XLALEC   42    (EA CAR1 Y)  (LPIC CAR1 Y) $

PRAIC 11     PUB XLAIBN   49     EA CAR1 Y)  (LPIC CAR2 Y) $
```

Table history

NA012

Development activity 59007050 introduces changes to field LINEATTR. This field now accepts an alphanumeric string instead of an integer string.

LTCALLS (end)

NA009

Added call types HM (Hotel/Motel) and SOCOS (Selective Class of Call Screening).

NA008

The following changes were made to table LTCALLS:

- Added option LPIC to subfield LTCOPT, added refinements LCARRIER and LCHOICE to option LPIC to support feature PRI NA008 call processing (AF6862).
- Increased the size of subfield LINEATTR index to 31999.
- Added warning when datafilling field CALLTYPE = PVT to support feature Call by Call (CBC) (AF6864) on NIPRI interfaces.

NA007

Increased the range of field LINEATTR to 4095.

BCS36

The following changes were made to table LTCALLS:

- corrected values in field RTEID
- added option EA to field LTCOPT, and added new fields PIC and CHOICE

LTCINV

Table name

Line Trunk Controller Inventory

Functional description

Table LTCINV contains the inventory data, except P-side link assignments, for various host peripheral module (PM) types. The host Line Trunk Controller (LTC) PMs datafilled in table LTCINV support a maximum of 63 remote and local peripheral nodes.

The MSG MX76 card needs to be datafilled in the DTCI if that DTCI has the integrated gateway card NT7X07.

Table LTCINV lists the following data assignment for each bay associated with a PM:

- the PM type and number
- the frame type and number in which the PM is physically mounted
- the floor, row, and bay position of each PM
- the equipment product engineering code (PEC) of the PM
- the load name of the PM software
- the terminal type required for the type of telephone or data lines, or both, and the executive programs required for the PM specified in the terminal type entry
- the C-side links on which the PM is assigned
- the optional cards equipped in the PM
- the tone set used for the PM
- the processor card for each unit of the PM
- the EEPROM load name
- the optional attribute for the PM
- the PEC for processor cards (PROCPEC field)
- extension shelf information for Common Peripheral Modules (CPM)-based host peripherals equipped with an extension shelf. An extension shelf is available on the CMVI (cabinetized multi-vendor interface) and the MVIE (multi-vendor interface equipment frame). The MVDD (multi-vendor double density) version does not support an extension shelf.

Peripheral module types

The following table lists the PM types that are supported by table LTCINV.

PM type

PM	Meaning
ADTC	Austrian digital trunk controller
DFI	direct fiber interface
DTC	digital trunk controller
DTC7	digital trunk controller for CCS7 ISUP call processing (datafilled as DTC)
DTCI	ISDN digital trunk controller
DTCO	offshore digital trunk controller (datafilled as PDTC)
DTCO+	XPM PLUS offshore digital trunk controller (DTCO) equipped with card NTMX77 (unified processor) datafilled as PDTC
DTCO2	based on CPM datafilled as PDTC EQPEC MX85AA
GPP	General Peripheral Platform, CPM-based host peripheral for generic access nodes
IDTC	international digital trunk controller (pulse code modulation [PCM] 30 trunks)
ILGC	international line group controller
ILTC	international line trunk controller
LGC	line group controller
LGCI	ISDN line group controller (datafilled as LGC with ISP OPTCARD)
LGCO	line group controller offshore (datafilled as PLGC)
LGCOi+	line group controller offshore (datafilled as PLGC) with ISDN functionality and an NTMX77 unified processor
LTC	line trunk controller
LTCI	ISDN line trunk controller (datafilled as LGC with ISP OPTCARD)
LTC+	line trunk controller PLUS (LTC equipped with an NTMX77 [unified processor] card, datafilled as LTC)
P2LGC	two-processor PCM30 line group controller (datafilled as PLGC)

PM type

PM	Meaning
P2LGCI	ISDN two-processor PCM30 line group controller (datafilled as PLGC)
P3LGC	three-processor PCM30 line group controller (datafilled as PLGC)
PDTC	PCM30 digital trunk controller (datafilled as PDTC)
PDTC+	XPM PLUS PCM30 digital trunk controller (PDTC equipped with card NTMX77 [unified processor] datafilled as PDTC)
PLGC	PCM30 line group controller
SMA	subscriber carrier module-100 access
SMA2	expanded subscriber module-100 access
SMS	subscriber carrier module-100S (SLC-96) (controls subscriber loop carrier [SLC] remote)
SMU	subscriber carrier module-100 Urban (controls remote concentrator terminal [RCT] of the DMS-1U system)
TMS	Traffic Operator Position System (TOPS) message switch

The following table lists the combinations of PM types that are supported by table LTCINV.

Combination of PM types

Module	Compatibles	Compatibles
LTC_LTC	LTC_LGC	LTC_DTC
LTC_ILTC	LTC_ILGC	LTC_IDTC
	LTC_ALGC	LTC_ADTC
	LTC_PLGC	LTC_PDTC
LTC_TLTC	LTC_TLGC	LTC_TDTC
		LTC_DFI
LTC_SMU	LTC_SMS	LTC_SMA
	LTC_ICP	LTC_TMS

When a PM is added to table LTCINV, an entry is automatically added to table LTCPSINV. All the corresponding P-side links in table LTCPSINV initially default to NILTYPE. P-side links that do not have hardware assigned must remain as NILTYPE. Unequipped software-assigned P-side links in an inventory table cause service-affecting problems.

For more information, refer to the description of table LTCPSINV.

Datafill sequence and implications

The following tables must be datafilled before table LTCINV:

- PMLOADS
- NETWORK
- ECHINV (if an echo canceler [EC] optional card is required)

Note: Changes to fields with multiple entries must be made in the PROMPT mode only.

Table size

Memory is allocated as required to allow a maximum of 210 tuples in tables LTCINV and LTCRINV combined.

Note: From SN06 (in certain markets) the maximum number of active tuples in LTCINV can be limited by software optionality control.

Datafill

The following table lists the datafill for table LTCINV.

Field descriptions

Field	Subfield	Entry	Explanation and action
LTCNAME		see subfields	*Link trunk controller name* This field consists of subfields XPMTYPE and XPMNO.
	XPMTYPE	ADTC, DFI, DTC, DTCI, GPP, IDTC, ILGC, ILTC, LGC, LTC, PDTC, PLGC, SMA, SMA2, SMS, SMU or TMS	*68K peripheral module type* Enter the extended multiprocessor system PM type. See previous tables for descriptions of PM types. ***Note:*** Entry PDTC is not valid if 8-bit SLS load balancing is active or if CCS7 routing tables exist in the XPM. Deactivate 8-bit SLS and activate LIU7 routing before entering PDTC.

Field descriptions

Field	Subfield	Entry	Explanation and action
	XPMNO	0 to 255	*68K peripheral module number* Enter the PM number. A maximum of 210 series II peripherals are supported. When used with external routers (table C7ROUTERS), any type of series II peripheral can be entered. Without external routers, a maximum of 140 DTC7s is supported. ***Note:*** Operating company personnel can number the XPMs from 0 to 255 but the total number of tuples in tables LTCINV and LTCRINV combined cannot exceed 210 XPMs. The XPM types can be any combination of types accepted by the two tables.
ADNUM		0 to 4095	*External administrative number* Enter a unique external administrative number associated with the PM. The ADNUM value is used as the index into operational measurements (OM) data for OM groups line traffic (LMD) and universal tone receivers (UTR). Field ADNUM cannot be changed if the OM counts for that PM are included in an engineering and administrative data acquisition system/data collection (EADAS/DC) section associated with LMD or UTR. Any entry outside the range indicated for this field is invalid.

Field descriptions

Field	Subfield	Entry	Explanation and action
FRTYPE		CMVI, DTE, IDTE, LGE, LTE, LTEI, MCTM, MLNK, MNET, SME, MVDD,	*Frame type* Enter the frame type on which the PM equipment is mounted. Enter LTEI for an SMA XPM DTCO2 type or a GPP. Enter MCTM for a cabinetized Meridian SL-100 switch. Enter MLNK for a Meridian CCS7 link module. Enter MNET for a Meridian network controller module. Enter CMVI for SMA2 (includes the MVIE version of the CMVI). Enter MVDD for a multi-vendor double density frame (four SMA2 shelves, no extension shelf). Any entries outside the range indicated for this field are invalid.
FRNO		0 to 511	*Frame number* Enter the frame number of the frame type on which the PM is mounted.
SHPOS		18, 32, 51, or 65	*Shelf position* Position numbers given are for example only. Check the hardware specifications of your PM to determine the correct numbers. Enter the shelf position where the PM is located. Any entry outside the range of indicated values for this field is invalid.
FLOOR		0 to 99	*Floor* Enter the floor on which the PM frame is located.
ROW		A to Z, AA to ZZ, except I, II, O, and OO	*Row* Enter the row on the floor where the PM equipment frame is located.
FRPOS		0 to 99	*Frame position* Enter the bay position of the PM equipment frame.

Field descriptions

Field	Subfield	Entry	Explanation and action
EQPEC		2P_PEC 3P_PEC 6R02AK 6R02AR 6R81AC 6R81AD 6R81IC 6R81ID 6T02AA 6X02AA 6X02AC 6X02AD 6X02AE 6X02AF 6X02AG 6X02AH 6X02AQ 6X02BA 6X02BC 6X02BD 6X02BE 6X02BF 6X02BG 6X02BK 6X02BS 6X02BT 6X02DG 6X02EB 6X02EE 6X02EL 6X02FA 6X02GA	*Equipment product engineering code* Enter the product engineering code (PEC) of the appropriate piece of equipment as described in the following paragraphs. For Telrad PLGC or PDTC, with the MSG6X69 message card, and with the ISRL69AD or ISRLADSI toneset, enter 6R61AC or 6R61AD. For Telrad PLGC or PDTC, with the ISP card in slot 15, enter 6R81IC or 6R81ID. For Telrad PLGC with the CMR card in slot 11, enter 6R02AK. If the entry in field XPMTYPE is ADTC, enter 6102SA, 6102SE, or 6102UA. If the entry in field XPMTYPE is an ALGC_ADTC combination, enter 6102SG, 6102SI, or 6102UG. If the entry in field XPMTYPE is ALGC, enter 6102NA, 6102SB, 6102SF, or 6102UB. If the entry in field XPMTYPE is BDTC, enter 6X02BC.

Field descriptions

Field	Subfield	Entry	Explanation and action
EQPEC (continued)		6X02HA 6X02IA 6X02IE 6X02IF 6X02JA 6X02KA 6X02KB 6X02LA 6X02LD 6X02MA 6X02MD 6X02NA 6X02P2 6X02P3 6X02UA 6X02UC 6X02UI 6X0201 6X0211 6X0215 6102NA 6102SA 6102SB 6102SE 6102SF 6102SG 6102SI 6102UA 6102UB 6102UG 7X3304 FX33CB FX3304 AK31AA AK31AT AK81AD AK81AT MK8505 MX85AA MX85AB NX33GC	If the entry in field XPMTYPE is DFI or GPP, enter MX85AA. If the entry in field XPMTYPE is SMA2, enter MX85AB. If the entry in field XPMTYPE is DTC, enter 6X02AF, 6X02AQ, 6X02BS, 6X02BT, 6X02IA, 6X02IE, or 6X02IF. If the entry in field XPMTYPE is DTC7 or DTCI, enter NX33GC or FX33CB to provide tones for PMs used in Japan. NX33GC or FX33CB must be datafilled in this field to allow the datafilling of RAM6X69 as an optional card. If the entry in field XPMTYPE is IDTC, enter 6X02BA, 6X02HA, or 6X02KA. For single-card new message IDTC/Caribbean expansion program (IDTC/CEP), enter 6X02HA. For tone card 6X69KA for China, enter 6X02KA. If the entry in field XPMTYPE is ILGC, enter 6X02BF, 6X02BK, 6X02FA, 6X02GA, 6X02KB, or 6X0211. For dual-card messaging ILGC for Turkey, enter 6X02BF. For single-card messaging ILGC for Turkey, enter 6X02BK. For single-card new message ILGC/CEP, enter 6X02FA or 6X02GA.

Field descriptions

Field	Subfield	Entry	Explanation and action
EQPEC (continued)			For tone card 6X69KA for China, enter 6X02KB. If the entry in field XPMTYPE is LGC, enter FX33CB, NX33GC, 6X02AA, 6X02AC, 6X02AE, 6X02AH, 6X02LA, 6X02LD, 6X02NA, 6X0201, or 6X0215. For LGC using the North American RAM-based tone set, enter 6X02P2. If the entry in field FRTYPE is LTEI, enter 6X02NA. If the entry in field XPMTYPE is LTC, enter 2P_PEC for a two-processor LTC, 3P_PEC for a three-processor LTC; 6X02AD, 6X02AG, 6X02MA, 6X02MD, or 7X3304. For LTC using the North American RAM-based tone set, enter 6X02P2. To provide tones for PMs used in Japan, enter NX33GC or FX33CB. NX33GC or FX33CB cards must be datafilled in this field to allow the datafilling of RAM6X69 as an optional card. If the entry in field FRTYPE is MCTM enter FX3304. If the entry in field XPMTYPE is PDTC, enter 6X02BD, 6X03BE, or 6X02JA. For Turkish tones with R2 signaling, enter 6X02JA.

Field descriptions

Field	Subfield	Entry	Explanation and action
EQPEC (continued)			For two-processor PDTC with frame type LTEI, enter 6X02UA. For PDTC with frame type LTEI, if the PDTC is XPM-based (DTCO+) enter 6X02UC; if the PDTC is CPM-based (DTCO2), enter MX85AA. For PDTC with frame type IDTC, enter 6X02UI If the entry in field XPMTYPE is PLGC, enter 6X02BG. For two-processor PLGC with frame type LTEI, enter 6X02UA. For PLGC with frame type LTEI, enter 6X02UC. If the entry in field XPMTYPE is PDTC or PDTC+, enter 6X02UC (XPM-based frame) or MX85AA (CPM-based) or 6X02UI (XPM-based frame IDTC). If the entry in field XPMTYPE is P2LGC, enter 6X02UA. If the entry in field XPMTYPE is P3LGC, enter 6X02UI. If the entry in field XPMTYPE is SMA, enter 6X02AA. If the entry in field XPMTYPE is SMS, enter 6X02DG. If the entry in field XPMTYPE is SMU, enter 6X02DG, 6X02EB, 6X02EE, or 6X02EL. If the entry in field XPMTYPE is TMS and the entry in field FRTYPE is LTEI, enter 6X02UA. This enables the TMS to use PCM30 signaling. For a two-processor XPM equipped with NT6X69LA, enter 6X02P2. For Israeli DTCO, enter AK81AD or AK81AT. For Israeli ICPO, enter AK31AA or AK31AT.

Field descriptions

Field	Subfield	Entry	Explanation and action
LOAD		alphanumeric (eight characters maximum)	*Load* Enter the name of the load required for the PM. ***Note:*** Enter the load file name in table PMLOADS before datafilling field LOAD in table LTCINV.
EXECTAB		see subfields	*Executive table* This field consists of subfields TRMTYPE and EXEC. This field is a vector of one to eight programs. ***Note:*** There must be at least one entry in subfields TRMTYPE and EXEC for a given PM, except for IDTC (frame type IDTE), which has none. The maximum number of executive programs is eight, but due to memory constraints of a particular load, the number can be less than eight. The exact number depends on the size of the executive programs and the memory load.

Field descriptions

Field	Subfield	Entry	Explanation and action
EXECTAB (continued)	TRMTYPE	ABTRK, AB250, CCIS, ISDN_UP, KEYSET, MAINT, M200, N5_TERM, N6_TERM, POTS, PRAB, P2018, P2112, RMM_TERM, R1_TERM, R2_TERM, or UNEQUD	*Terminal type* Enter the type of PM terminal. For regular, FX, and DS1FXSLS trunks, enter ABTRK. The ABTRK terminal uses the DTCEX set of executive programs to adapt existing nailed-up connections between a DMS-200 and a DMS-300 on digital PMs. ABTRK (DTCEX) is required for Integrated Business Network (IBN) outgoing trunks supporting BT3J type II/IV and DC5/AC15 loop disconnect signaling, and for foreign exchange signaling trunks with loop start (DS1FXSLS). Enter AB250 for DMS-250 trunks. AB250 is required for SOCPEX and UKPDTC executive programs. For CCIS digital trunks, enter CCIS. For P-phone/data lines, enter KEYSET. Prior to BCS35, enter M200 for voice and data lines. This entry is not valid for BCS35 and later. Enter N5_TERM for digital N5 trunks on a PDTC. For DTC-300 trunks, enter N6_TERM and R1_TERM. For R2 trunks in a DMS-300, enter R2_TERM. For regular lines, enter POTS (plain old telephone service). For an ISDN ADTC, enter PRAB.

Field descriptions

Field	Subfield	Entry	Explanation and action
EXECTAB (continued)	EXEC	ADTCIX DCM250 DTC300 DTCEX DTCFX FXODCM FXODTC JDTCEX KSADTC KSETEX N5DEX POTSEX RSMEX R2GWEX SOCPEX or UKPDTC	*Executive programs* Enter the set of executive programs that are required for the PM specified in the TRMTYPE entry. To support the DLYFWDXMT option in table TRKOPTS the Executive Program for the PM must be specified as DTCEX, DTCFX, or FXODTC. For Japan, enter JDTCEX instead of DTCEX. Use the KSETEX executable for ETSI ISDN V5.2 access to the GPP. For the N5 digital executive program line, enter N5DEX. N5DEX is valid only in table LTCINV. To support the BT3J types III and IV loop disconnect trunks, enter UKPDTC. The valid executive programs for ISDN LTC are also valid for the SMA PM.
CSLNKTAB		see subfields	*C-side link table* The subfields for this field depend on whether switches are equipped with the junctored network (JNET), the enhanced network (ENET) or the external network. If the switch is equipped with JNET, datafill subfields NMPAIR and NMPORT, then go to field OPTCARD. If the switch is equipped with ENET, datafill subfields ENSHELF, ENSLOT, ENLINK, and ENDS30, then go to field OPTCARD. If the XPM is connected to an external network, the datafill is system derived.

JNET switches

If the office is equipped with JNET, datafill subfields NMPAIR and NMPORT as described in the following table, then go to field OPTCARD.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	NMPAIR	0 to 31	*Network module pair number* Enter the network link to which the PM is assigned, corresponding to C-side links zero to 15 of the PM.
	NMPORT	0 to 63	*Network port* Enter the network port corresponding to the network link. Go to field OPTCARD.

ENET switches

If the office is equipped with ENET, datafill subfields ENSHELF, ENSLOT, ENLINK, and ENDS30 as described in the following table, then go to field OPTCARD.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	ENSHELF	0 to 7	*Enhanced network shelf number* Enter the shelf number to which the PM is assigned.
	ENSLOT	10 to 16, 25 to 32, or 13 to 19	*Enhanced network slot number* Enter the crosspoint slot number to which the PM is assigned, corresponding to C-side links. Enter a value between 10 and 16, or between 25 and 32. For a SuperNode SE switching unit, enter a value between 13 and 19.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	ENLINK	0 to 18	*Enhanced network link number* Enter the link on the crosspoint to which the PM is assigned, corresponding to C-side links 0 (zero) to 18 of the PM.
	ENDS30	0 to 15	*Enhanced network DS30* All entries must be contiguous from 0 (zero). No entry can be duplicated. If the link is a DS30, this field defaults to 0 (zero).

External networks

If the XPM is connected to external networks, the crafts person simply enters a $ in XPM_NET_CSLINK_TC_TAB.

This is not visible via a RANGE command on the field because there is no change in the range of the field. Entry of this special type of cslink is not allowed and is blocked by the table control software. It is only visible via a listing of a tuple which defines an external DS512 XPM.

All switches

For all offices, continue datafill as described in the following table.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD		AX69AA CMR5 CMR6 CMR7 CMR8 CMR9 CMR11 CMR13 CMR15 CMR16 CMR17 CMR18 CMR19	*Optional card* This field is a vector that can have up to ten entries. Unless otherwise directed, when all optional cards are entered, go to field tone set (see Table 10) to continue datafill for table LTCINV. ***Note:*** Changes to fields with multiple entries must be made in the PROMPT mode only. For PDTC+ (PEC 6X02UC in field EQPEC), optional cards include the CONTINUITY cards (NT6X70), UTR15, UTR16, and UTR17 (NT6X92 in slots 15, 16, and 17), NT6X69 RAM card, MX76_MSG, NT6X79 tone card, NT6X44EA, and NT6X28 signaling interface card. The NT6X69 MSG card (ROM tone card (TONE6X69)) is not supported. Therefore, if the entry in field EQPEC is 6X02UC, the required optional cards are the STR16IC and STR17IC (NT6X62 in slots 16 and 17), and ECC300, ECC600, ECC1200, ECC2400, ECC4800, or ECC9600.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)		CONTINUITY CPA17 DCTAX78 ECC300 ECC600 ECC1200 ECC2400 ECC4800 ECC9600 ETSBX69 FDLAX69 ISP MSG6X69 MSGMX76 NE2X10AA NT6X28BA NT6X69AA NTAX78AB NTAX78BA NTCS50 NT6X28 NT6X28BA NT6X44CA NT6X44EA NT6X62 NT6X69 NT6X79 NT6X92 NT7X05AA RAM6X69 SCPM_MK76_MSG STR5IC STR8 STR11 STR16IC STR16OG STR17IC STR17OG TONE6X79	For PDTC+ (PEC MX85AA in field EQPEC), optional cards include STR5IC (NT6X62AB in slots 5 and 23), UTR6 (NT6X92CA or NT6X92EA in slot 6 and 21) and UTR7 (NT6X92CA or NT6X92EA in slot 7 and 22), NT6X70CA continuity tone detector card, NTCX50BA external echo canceller in slots 6 and 22 behind UTR card, and NTBX01BA enhanced ISDN signaling processor. The NT6X69 RAM card, NT6X44EA and NT6X28 signaling cards are not compatible with DTCO2 (MX85AA EQPEC). To enable DTCO+ (6X02UI) to be datafilled the same as a PDTC+, the same optional cards as listed for PDTC+ are valid, as well as NT6X69 MSG card (ROM), STR8, UTR8, UTR9, UTR11 (NT6X92 in slot 8, 9 or 11) and STR11 (NT6X62 in slots 8 and 11), and the baud echo canceler controllers NTCX50 (ECC) cards. The MSG MX76 card can be datafilled for a DTCI. Datafill the MX76 card in the DTCI if the DTCI has integrated gateway card NT7X07. For LGC, LTC, SMA, SMS, and SMU PMs, datafill the CMR cards. CMR (Custom Local Area Signaling Services [CLASS] modem resource) cards handle the monitoring of the ringing line and the insertion of the modem transmission to provide the Calling Number Delivery (CND) feature for CLASS. CMR can be equipped in one of the spare slots in the LTC frame (slot 13, 16, or 17). ***Note:*** A maximum combination of two UTR and/or STR line cards are permitted at any one time. For example, a combination of UTR15 and UTR17 or STR15 and UTR16 is permissible.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)		UTR4 UTR6 UTR7 UTR8 UTR9 UTR10 UTR11 UTR12 UTR14 UTR15 UTR16 UTR17 UTR18 XPM_UTR4	***Note:*** CMR cards are not allowed in slots 15 and 19. The CMR load name must be datafilled in table PMLOADS before being datafilled in field LOAD of table LTCINV. If a CMR card is entered, datafill refinement CMRLOAD. For C6, N6, or CCS7 applications, datafill the CONTINUITY (NT6X70) cards. The CONTINUITY card, NT6X70, is used for CCIS (common channel interoffice signaling). For DTCs or LTCs that are datafilled with the C6, N6, or CCS7 applications, table LTCINV must be datafilled with the optional CONTINUITY card to allow diagnostics testing on the NT6X70 card. The datafill of this option does not affect the continuity functionality performed by the card during in-service operation. A PDTC with German 1TR7 ISDN user part (ISUP) trunks must be datafilled with the CONTINUITY optional card. DCTAX78 is the required value for the NTAX78AA time switch card in the ISUP DTC (DTC7) and the ISDN DTC (DTCI). For ADTCs and PDTCs that control echo canceler (EC) modules, datafill the optional baud echo canceler cards (ECC). Echo canceler modules provide echo cancellation for calls using international trunks.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)			***Note:*** Table ECHINV must be datafilled before datafilling an ECC optional card in table LTCINV. All optional cards that are valid for ISDN LTC are valid for the SMA PM type (except NTAX78BA). For ISDN/MBS SMU, the ISDN signaling processor (ISP) card is required. On a PLGC PM with a frame type of LTEI and an EQPEC of 6X02UA, the ISP optional card can be datafilled. If the entry in field OPTCARD is ISP, datafill subfield SLOT_NUMBER as described below, then go to field TONESET to continue datafill for table LTCINV. For all Global Peripheral Platform (GPP) types, the MSGMX76 card must be datafilled in field OPTCARD. For GPPs with V5.2 interfaces, the ISP card must also be datafilled in field OPTCARD. ISP can be datafilled on PMs LTC, LGC, PLGC, and PDTC if the central control (CC) is equipped with the ISDN subsystem. If the operating company personnel are required to configure an ISDN LTC, LGC, PLGC, or PDTC, PEC and frame type checking are enforced. In this case, field EQPEC must be 6X02NA, 6X02UC or MX85AA (DTCO2) and field FRTYPE must be LTEI.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)			NTAX78AB is an optional enhanced time switch (ETS) card used only with the SMU XPM using the ISP optional card. NTAX78AB replaces NT6X44CA and is required to provide digital test access (DTA) on the enhanced subscriber module urban (ESMU). The ESMU is a SMU equipped with the ISP optional card, which supports ISDN and Meridian business set (MBS) capabilities. LTC ISDN and LGC ISDN peripherals that use the NT6X44AA time switch require no entry in field OPTCARD. If you datafill these peripherals with the NTAX78BA time switch, the ISDN capacity will be expanded. The NTAX78BA doubles the P-side ports (from 20 to 40) and removes C-side channel usage for TDM hairpin connections. (The NTAX78BA makes TDM hairpin connections on the P-side of the peripheral.) Table LTCINV only allows operating company personnel to specify NTAX78BA in field OPTCARD through the ADD command (that is, the initial assignment of the peripheral). To add or remove NTAX78BA to or from an existing peripheral requires the use of a CM software tool. For information about the tool, refer to Installation Method, IM 65-0261 or your next level of support. ***Note:*** NT6X44CA is the default time switch for the ESMU and does not require an entry in field OPTCARD. NTAX78AB operates in NT6X44CA mode until it is datafilled as an optional card and the ESMU is initialized.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)			To provide ISDN BRI services on an LTC or LGC, the PM must be datafilled with an ISP optional card. To provide ISDN PRI services on a PDTC or PLGC, the PDTC or PLGC must be datafilled with an ISP optional card. NT7X05AA is a peripheral remote loader (PRL) card. Refer to subfield SLOT_NUMBER. Card MSGMX76AA replaces the NT6X69 message card in CPM and XPM Plus shelves. If MSGMX76AA is entered, datafill refinement MX76LOC. Card MSGMX76BA replaces the MSGMX76AA message card, for Japan only, in LTC+ shelves supporting high data link controller (HDLC), protocol and link access protocol on the D channel (LAPD) messaging. If NTMX76BA is entered, the datafill refinement MX76LOC must be set to HOST. ***Note:*** MSGMX76 messaging interface card is used for HDLC protocol and EDC. MSG6X69 is used for DMS-X protocol and does not allow EDC. The PLGC and PDTC PMs (XPM-based) require the NT6X28 card for PCM30 signaling. This card is not supported for DTCO2 (CPM-based). To enable the TMS to use PCM30, enter NT6X28, RAM6X69, and NT6X44EA. Either NT6X28AA or NT6X28AB must be datafilled in field OPTCARD for PMs P2LGC, P2LGCI, and P2DTC.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)			Card NT6X28 replaces NT6X28AB when either the NT6X28AA or NT6X28AB version is in the PM. Datafilling NT6X28AB changes the default trunk mapping to that outlined by the PCM30 time slot flexibility feature. The PCM30 time slot flexibility feature is implemented only if one of the following software packages is present: NTXB58AA, NTX472AA, NTX913AA, NTXK56AA, NTXK05AA, or NTX937AA. The NT6X28AB card is functional in table LTCINV even if it is not datafilled in field OPTCARD. Therefore, unless the PCM30 time slot flexibility feature is required, NT6X28AB must not be datafilled in field OPTCARD. Card NT6X28 must not be added for IDTC PMs in table LTCINV. If it is added, trunks cannot be assigned to the PM in table TRKMEM. For any PLGC hosting a RC02, the NT6X44 card must be datafilled as NT6X28 to prevent the generation of PM189 logs. For DTC, IDTC, PDTC (XPM-based) LGC, ILGC, and PLGC PMs, as well as TMS, enter NT6X44EA to apply conversions to both voice and data in the connections that are made across the NT6X44EA time switch. Card 6X44EA is not supported for DTCO2 (CPM-based).

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)			The universal message protocol and tones card, RAM6X69, cannot be added unless PEC 6X02P2, 6X02P3, 6X12AA, NX33GC, or FX33CB has been added to field EQPEC. This card is also used for TMS. If a special tone receiver is situated in PM slots 16 or 17, enter STR16 and STR17. If a special tone receiver is situated in slots 5, 8, 9, 11 or in a PDTC, enter STR5IC, STR8, STR9, and STR11. The TONE6X79 tone card cannot be added unless the MSG6X69 messaging card has already been added. The presence of tone card NT6X79 is not a valid configuration without a MSG6X69 messaging card. If an NT6X92 universal tone receiver card (UTRn) is datafilled, it means that a universal tone receiver card is equipped in slot *n*, where *n* = 8 to 11, and 14 to 18. For example, if field OPTCARD contains UTR8, the UTR card is located in slot 8. To indicate that a UTR is installed on a PDTC UTR6, UTR7, UTR8, UTR9, UTR11, UTR15, UTR16, and UTR17 or a combination of these can be datafilled. For Telrad PLGC with the CMR card, there is a maximum of two UTR cards, one in slot 8 and one in slot 12.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD (continued)			The ISDN/MBS SMU is supported by UTR15 and UTR17. If two UTRs are required, both UTR15 and UTR17 must be datafilled. If only one UTR is required, either card can be datafilled as long as the same slot is populated in both units of the ISDN/MBS SMU. UTR17 supports the UTR card on a subscriber carrier module-100S (SMS). If an SMS is equipped with a UTR, the message card must be NT6X69AC (ASIC version), the MP memory card must be NT6X47AC, and the CLASS modem resource card must be NT6X78AB (ASIC). If other cards are used, the SMS can exceed the power rating of the shelf.

OPTCARD = CMR

If the entry in field OPTCARD contains any of the CMR values CMR5, CMR13, CMR15, CMR16, CMR17, or CMR19, datafill refinement CMRLOAD as described in the following table, then go to field TONE SET to continue datafill for table LTCINV.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	CMRLOAD	alphanumeric (vector of maximum eight characters)	*Custom local area signaling service modem resource load* Enter the appropriate CMR software load name. Go to field TONE SET.

OPTCARD = ISP

If the entry in field OPTCARD is ISP, datafill subfield SLOT_NUMBER as described in the following table, then go to field TONESET to continue the datafill.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	SLOT_NUMBER	3 to 19	*Slot number* The recommended optional slot number for most North American XPMs is 16. SMA2 is the exception, and uses slot number 4. On international XPMs, PDTCs, and PLGCs, with ISDN capability and an entry of 6R81IC or 6R81ID, the slot number is 15. On PDTC (MX85AA) the slot number is 4.

OPTCARD = MSGMX76

If the entry in field OPTCARD is MSGMX76, datafill refinements MX76LOC and PROTOCOL as described in the following table, then go to field tone set to continue datafill for table LTCINV.

Note 1: This card is not optional for GPP, even though it appears in the OPTCARD list.

Note 2: This card is not optional for LTC+ when it supports HDLC protocol, even though it appears in the OPTCARD list.

Note 3: This card is not optional for PDTC (MX85AA EQPEC).

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	MX76LOC	HOST or REM	*NTMX76 location* If the card is located on a host PM, enter HOST. REM is not a valid entry. Any attempt to enter REM generates an error message on the screen and the system returns to the default of HOST.
	PROTOCOL	DMSX or HDLC	*Host remote communication protocol* If the entry in refinement MX76LOC is HOST, datafill this refinement. Go to field TONE SET.

OPTCARD = NT7X05AA

If the entry in field OPTCARD is NT7X05AA, datafill subfield SLOT_NUMBER as described in the following table, then go to field tone set to continue datafill for table LTCINV.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	SLOT_NUMBER	3 to 19	*Slot number* The recommended optional slot number for most North American XPMs is slot 16. SMS is an exception using slot 15. The full range of supported slot numbers for North American XPMs is 13, 15, 16, 17, and 19. The default value is 17. On international XPMs with three-processor backplanes and an EQPEC field entry of 6X02BA, 6X02BC, 6X02BD, 6X02BE, 6X02BG, 6X02BF, 6X02BK, 6X02BS, 6X02BT, 6X02GA, 6X02HA, 6X02JA, 6X02KA, 6X02KB, or 6X02UI, the full range of supported slot numbers is 8, 9, and 11. On international XPMs PDTCs and PLGCs, with ISDN capability and an EQPEC field entry of 6R81IC or 6R81ID, the slot number is 15.

All cards

For all optional cards, continue datafill for table LTCINV as described in the following table. NT6X69LX refers to any version L option card.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
TONESET		AUSMF AUSTRIA AUS100 AUS300 AUTMF AUTMFC BELMF BELMFC BOLIVMF BOLIVMFC BRASMF BRASMFC CEP CEP100 CHILEMF CHILEMFC CHINA CHINA100 CLMDTC CLMLG CWAPCLGC CWAPCDTC CWCHILGC CWCHIDTC CZECHMF CZECHMFC DENMARKMF DENMARKMFC DUTCHMF DUTCHMFC EGMF EGMFC FDAUS300 FDAUS100 FDMEXMF FDMXDTMF FDNZLGC FDNZDTC HKFMC HONGKONG HONTONES HUNDTC HUNLGC	*Tone set* Enter the name of the tone set for the switch that is being datafilled. ***Note:*** Values FDAUS300, FDAUS100, FDMEXMF, FDMXDTMF, FDNZLGC, FDNZDTC are not supported and should not be used. Enter AUSMF for Australian tone set with DTMF, MF, supervisory, test and diagnostic and COT tones. The NT6X69LX Downloadable Tone Card or NTMX76 Message and Channel Supervision Card must be installed. Enter AUSTRIA, AUS100, and AUS300 for Austrian tone sets. AUS100 and AUS300 are used with a PDTC PM. The NT6X69LA MPDT card or the MSGMX76 (for GPP) must be equipped. ***Note:*** GPP uses MSGMX76 instead of NT6X69LA. Enter AUTMF for Austrian toneset with Dual-tone Multi-frequency (DTMF), Multi-frequency (MF), supervisory, test and diagnostic, and Continuity Tone (COT) tones. Enter AUTMFC for Austrian toneset with DTMF, Multi Frequency Compelled (MFC), supervisory, test and diagnostic, and COT tones. Enter BELMF for the Belgium tone set on the DMS-100E switch. The tone set includes the DTMF, MF, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be installed.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
		INDIA IRISHMF ITALYMF ITALYMFC JAPAN1 JAPAN3 KOREA KOREANMF MALAYSIA, MALYADSI MCL MEXDTMF MEXMF MOROCCO NA_RAM NORTHAA NORTHAM NORWMF NORWMFC NZLGC PERUDTC PERULGC PHILADSI PHILTONE NZDTC PLDDTC PLDLGC PNGMFC POLDTC POLLGC SAUDIDTC SAUDILGC SINGMF SINGMFC SPAIN SPAINMF SPAINMFC SRILADSI SRILANKA SWDDTC SWDLGC SWISSMF SWISSMFC TONFRMF TONFRMFC	*Tone set* Enter the name of the tone set for the switch that is being datafilled. Enter BELMFC for the Belgium tone set on the DMS-100E switch. The tone set includes the Multi Frequency Compelled (MFC), supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be installed. Enter BOLIVMF for Bolivian tone set Multi Frequency. Enter BOLIVMFC for Bolivian tone set Multi Frequency Compelled. Enter BRASMF for Brazilian tone set Multi Frequency. Enter BRASMFC for Brazilian tone set Multi Frequency Compelled. Enter CEP and CEP100 for Caribbean expansion program tone set. Enter CHILEMF for Chilean tone set Multi Frequency. Enter CHILEMFC for Chilean tone set Multi Frequency Compelled. Enter CHINA and CHINA100 for Chinese tone sets. Enter CLMDTC for Colombia trunk peripherals.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
		TURKEY TURK100 TURK300 UK UK100 UK300 or UKADSI	Enter CLMLGC for Colombia line peripherals. Enter CWAPCLGC for a customer specific tone set for LGCO and LGCI type peripherals. The tone set includes DTMF, supervisory, and test and diagnostic tones. Enter CWAPCDTC for a customer specific tone set for DTCO type peripherals. The tone set includes R2 MFC tones for Voice Mail connectivity, R1 MF, audible, COT, MBS Distinctive Ringing Tones, and test and diagnostic tones. Enter CWCHILGC for Modified China tone set for LGCO and LGCI type peripherals. The Caribbean and Belize markets use the tone set. The tone set includes DTMF, R1MF, warble, Audible, MBS Distinctive Ringing, and test and diagnostic tones. Enter CWCHDTC for Modified China tone set for the DTCO type peripheral. The Caribbean and Belize markets use the tone set. The tone set includes R2 MFC tones for Voice Mail connectivity, R1 MF, audible, COT, and test and diagnostic tones. Enter CZECHMF for Czech Multi Frequency toneset, or CZECHMFC for Czech Multi Frequency Compelled toneset. Enter DENMARKMF for the Danish tone set. that includes; Simple Supervisory Tones, Test and Diagnostic Tones, MF Tones, DTMF Tones, ADSI Tones and Periodic Supervisory Tones. The NT6X69LX Tone Card must be installed. Enter DENMARKMFC for the Danish tone set that includes; Simple Supervisory Tones, Test and Diagnostic Tones, MFC Tones, DTMF Tones and Periodic Supervisory Tones. The NT6C69LX Tone Card must be installed.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			Enter DUTCHMF for the Dutch tone set on the DMS-100E switch. The tone set includes the DTMF, MF, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be installed. Enter DUTCHMF for the Dutch tone set on the DMS-100E switch. The tone set includes the DTMF, MF, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be installed. Enter DUTCHMF for the Dutch tone set on the DMS-100E switch. The tone set includes the DTMF, MF, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be installed. Enter DUTCHMFC for the Dutch tone set on the DMS-100E switch. The tone set includes the MFC, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be installed. Enter EGMF for the Egyptian tone set that includes; DTMF Tones, MF Tones, Supervisory Tones, Test and Diagnostic Tones, and COT Tones. Enter EGMFC for the Egyptian tone set that includes; MFC Tones, Supervisory Tones, Test and Diagnostic Tones, and COT Tones. Enter HONGKONG for the Hong Kong MF tones. Enter HKMFC for Hong Kong MFC tones. Enter HONTONES for Honduras toneset. Enter HUNDTC for Hungarian supervisory, diagnostic, and MFC tones. Enter HUNLGC for the Hungarian supervisory, diagnostic, and DTMF tones. Enter INDIA for the Indian tone set. The tone set includes DTMF, MFC, supervisory, subscriber services, and test tones.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			Enter IRISHMF for Irish tone set. The tone set includes MF, DTMF, Supervisory, and Test and Diagnostic tones. The NT6X69LX MPDT card must be installed. Enter ISRDADSI for the ISRAEL RAM-tones ADSI tone set. This toneset is valid for PLGCs only. Enter ISRLADSI for the ISRAEL ROM-tones ADSI tone set. This toneset is valid for PLGCs only. Enter ITALYMF for the Italian tone set on the DMS-100E switch. The tone set includes the DTMF, MF, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be present. Enter ITALYMFC for the Italian tone set on the DMS-100E switch. The tone set includes the MFC, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be present. Enter JAPAN1 for the Japan tone set used with a PDTC PM. This tone set requires the operating company to have the following cards installed: • an NT6X69LA MPDT card, or a later version of the NT6X69 MPDT card • an NT6X92CA card (tone receiver) or a later version of the NT6X92 tone receiver card Enter JAPAN3 for the Japan tone set used with a PLGC PM. This tone set requires the operating company to have the following cards installed: • an NT6X69LA MPDT card, or a later version of the NT6X69 MPDT card • an NT6X92CA card (tone receiver), or a later version of the NT6X92 tone receiver card

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			Enter KOREA for the Korean MFC toneset. Enter KOREANMF for the Korean MF toneset. Enter MALAYSIA for the Malaysian tone set. Enter MALYADSI for the MALAYSIA tone set and the analog display services interface (ADSI) tone set. This tone parameter is used to generate the tones for CLASS ADSI applications. MEXDTMF contains standard supervisory, DTMF, MF, and continuity tones. R1 signaling is supported. MEXMF contains standard supervisory, MF, MFC, and continuity tones. R1 and R2 signaling are supported by the MF and MFC tones respectively. MOROCCO is used with an IDTC PM. The NT6X69LA MPDT card must be equipped. Enter NORTHAA for North American analog display services interface (ADSI) tone set. Enter NORTHAM for North American tone set. Enter NORWMF for Norway tone set with Dual-Tone Multi Frequency (DTMF), Multi Frequency (MF), supervisory, test and diagnostic, and Continuity Tone (COT) tones. The NT6X69 tone card must be installed. Enter NORWMFC for Norway tone set with Multi Frequency Compelled (MFC), supervisory, test and diagnostic, and COT tones. The NT6X69 tone card must be installed. Enter NZDTC or NZLGC for New Zealand tone sets. NZLGC and NZDTC require the NT6X69LA card.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			Enter NA_RAM for North American RAM based tone set. Tones that can be downloaded with this tone set are only supported on LGCs, LTCs, and RCCs. Enter PERUDTC for the Peruvian tone set that includes; Simple supervisory Tones, Test and Diagnostic Tones, MFC Tones, and Periodic Supervisory Tones. Enter PERULGC for the Peruvian tone set that includes; Simple Supervisory Tones, Test and Diagnostic Tones, DTMF Tones, and Periodic Supervisory Tones. Enter PHILADSI for the PHILTONE tone set and the ADSI tone set. This tone parameter is used to generate the tone for CLASS ADSI applications. Enter the Papua New Guinea toneset PNGMFC for PLGC and PDTC peripheral modules. Enter PLDDTC for the IDTC and PLDLGC for the ILGC Polish tone sets on the DMS-100I switch. ***Note:*** The SMA unit must be off-line (Offl) or manual busy (ManB) to remove the NTAX69 from table LTCINV. Enter POLDTC or POLLGC for Polish tone sets. POLDTC and POLLGC require the NT6X69LX card. Enter SAUDIDTC for the Saudi Arabian R2 Multi Frequency Code (MFC) tones, or SAUDILGC for the Saudi Arabian Dual-Tone Multi Frequency (DTMF) and line tones. Enter SINGMF for Singapore Multi Frequency tone set, or SINGMFC for Singapore Multi Frequency Compelled tone set. Enter SPAIN for Spanish tone set.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			Enter SPAINMF for the Spanish tone set on the DMS-100E switch. The tone set includes the DTMF, MF, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be present. Enter SPAINMFC for the Spanish tone set on the DMS-100E switch. The tone set includes the MFC, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be present. Enter SRILADSI for the SRILANKA tone set and the ADSI tone set. This tone parameter is used to generate the tone for CLASS ADSI applications. Enter SRILANKA for the Sri Lankan tone set. Enter SWDDTC for the Swedish tone set that includes; DTMF Tones, Simple Supervisory Tones, Periodic Supervisory Tones, and Test and Diagnostic Tones. The NTX6X69LX Tone Card must be present. Enter SWDLGC for the Swedish tone set that includes; MFC Tones, Simple Supervisory Tones, Periodic Tones, and Test and Diagnostic Tones. The NTX669LX Tones card must be present. Enter SWISSMF for Swiss toneset. The tone set includes the DTMF, MF, supervisory, test and diagnostic, and COT tones. Enter SWISSMFC for Swiss toneset with DTMF, Multi Frequency Compelled (MFC), supervisory, test and diagnostic, and COT tones. Enter TONFRMF for the French tone set on the DMS-100E switch. The tone set includes the DTMF, MF, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be present.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			Enter TONFRMFC for the French tone set on the DMS-100E switch. The tone set includes the MFC, supervisory, and test and diagnostic tones. The NT6X69LX Tone Card must be present. Enter TURKEY and TURK100 for Turkish tone sets TURK300 (Turkish international tone set) is used with a PDTC PM. The NT6X69LA MPDT card must be equipped. Enter UK for tone set used in the United Kingdom. Enter UK100 for United Kingdom DMS-100 tone set Enter UK300 for United Kingdom DMS-300 tone set used in PMs equipped with the NT6X69LA MPDT card. Enter UKADSI for the UK100 and the ADSI tone set. This tone parameter is used to generate the tones for CLASS ADSI applications. Enter PHILTONE for the Philippine tone set.
PROCPEC		6X45AA 6X45AB 6X45AC 6X45AD 6X45AE 6X45AF 6X45BA 6X45BB 6X45CA 6X45AD AX74AA MX77AA SX05AA	*Processor equipment product engineering codes* Enter the two PECs of the processor card. One PEC is required for each unit of the XPM. This field has the PEC corresponding to the processor card provided in the XPM unit. For the DFI unified processor (UP), enter MX77AA or AX74AA. For DTC7 with UP and DTCI with UP, enter MX77AA or AX74AA. For compact PMs (CPM), ADTC and DTCI, enter MX77AA or AX74AA. To support the UP on an ISDN/MBS SMU, field PROCPEC must be datafilled with MX77AA.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
PROCPEC (continued)			To support the NTMX76AA/BA HDLC messaging card, field PROCPEC must be datafilled with MX77AA. Enter SX05AA to replace MX77AA or AX7AA after first removing the NT7X05 circuit pack. The NT7X05 is not compatible with the SX05AA card and therefore it must not be datafilled in the OPTCARD field. Mount the SX05AA processor card in the same slot as the MX77AA/AX74AA. If the frame type is GX02UI, you must remove the backplane strap used for the old 6X45 as the SX05AA processor is not compatible with the 6X45 processor. Enter data into subfield PACKLET when you enter SX05AA. Subfield PACKLET is the SX05AA packlet functionality. PACKLET is a vector of up to four entries: PRL, SPAREA, SPAREB, and SPAREC. PRL is currently the only valid entry if PRL functionality is required. Otherwise the entry is $ to indicate no PRL functionality. ***Note:*** The values SPAREA, SPAREB, SPAREC are for future use and currently have no functionality. The following are data entry examples for the SX05AA and subfield PACKLET: • SX05AA $ SX05AA $ - no PRL functionality • SX05AA PRL $ SX05AA PRL $-when one or two SX06BA (60 Mbyte PRL packlet) or SX06CA (120 Mbyte PRL packlet) are installed in each SX05AA ***Note:*** If an SX05AA processor is datafilled in both units, an NT7X05AA is not allowed in the OPTCARD field.
EXTLINKS		0 to 6	*Number of extended links* Enter the number of pairs of extended links.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
E2LOAD		alphanumeric (maximum eight characters)	*Electrically erasable PROM load name* Enter the EEPROM load name. If the shelf is equipped with a processor that is different from NTMX77, field E2LOAD is automatically datafilled with NILLOAD. ***Note:*** Datafill the PMLOAD file name in table PMLOADS before datafilling field E2LOAD in table LTCINV.
OPTATTR		CCS7 FSTR2 NX64 OC PCM30 STRBBF STRDTRE STRN5 FDCP EXTDS512 or $ EBI	*Optional attribute* This field is a vector of up to ten optional attributes. *CCS7:* • If the DTC is used for CCS7 ISUP call processing and the value in field XPMTYPE is DTC, enter CCS7. Do not enter the CCS7 option for DTCs not associated with CCS7. • The CCS7 attribute cannot be deleted from a DTC if ISUP trunks are datafilled and assigned to that PM. The ISUP trunks must be deleted before proceeding with the table LTCINV change. • Each ISUP DTC7 must be identified by this attribute whether the Multi-MSB7 feature (MMSB) is enabled or disabled. *FSTR2:* To identify a PDTC that supports generic R2 signaling, enter FSTR2. This value is valid only for the three-processor version of the PDTC. It is not supported on the two-processor version of the DTCO. *NX64:* To indicate that the PM can be used for NX64 kbit/s semi permanent connections on a PDTC, enter NX64. The NX64 optional attribute means that a new channel mapping is used across the PM providing uniform delay for all time slots. The NX64 optional attribute is valid only for PDTCs and can be used only if field OPTCARD contains card NT6X28.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
OPTATTR (continued)			*OC:* This value is only permitted under the following conditions: • Field PMTYPE is datafilled as TMS. • Field PROCPEC is datafilled as MX77AA. • There are no EDCHs (BX02BA) defined in a corresponding tuple of table LTCPSINV. • The SOC for ETMS OC (ENSV0008) is in the IDLE or ON state. • There are no carriers of type REMOTE defined on the TMS. This is determined by tables TPCINV and TMSPSDEV where this restriction is automatically enforced. Refer to these tables in this section for further information. Also, the OC OPTATTR cannot be added nor removed from an existing tuple. If a TMS is to be converted from an OC TMS to a position server TMS, or vice versa, the TMS tuple in table LTCINV must be deleted and re-added. *PCM30:* • To indicate that a PCM30 type carrier can be assigned to the PM node, enter PCM30. • For TMSs that use PCM30 as their carrier, enter PCM30. *STRDTRE:* This option defines the STR card to be used with DTMF “#” and “*” tone detection. *$:* For SMA or GPP, enter $. *FDCP:* Used to flag a peripheral as being capable of supporting FDCP trunks and so requiring download of FDCP data.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
			EXTDS512: This field is used to indicate the XPM that is configured in the Access Bridge Interface (ABI) configuration. An ABI configuration has an XPM connected to an MG9000 gateway via a DS512 interface. The refinements are the IP address of the DS512 interface and the Host GWC id. ***Note:*** The following are the limitations to the datafill introduced by this feature: • Each LTCINV tuple is restricted to either ENET-based or IP DS512 interface CSLNKTAB datafill, but not both. There can be multiple tuples of each type but each tuple has either ENET-based CSLNKTAB datafill or the EXTDS512 optional attribute assigned, but not both. • The IP DS512 interface provisioning supports only the LTC XPM types LGC and SMA2. • The ability to change the derived CSLINKs is not allowed. • The ability to change the Host GWC of the external XPM is not allowed. • The ability to change the device from ENET to External DS512-based, or vice versa, is not allowed. *EBI:* Downloads EBI support into DTCO2s to ensure bit inversion compatibility. You must also change the bit inversion datafills in table LIUINV to ensure compatibility with the far-end of the line.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
PEC6X40		6X40AA 6X40AB 6X40AC 6X40AD 6X40BA 6X40CA 6X40FA 6X40FB or 6X40FC	*6X40 equipment product engineering code* This field ensures that the correct 6X40 card version is sent as static data to the PM. Enter the version of the 6X40 card in the PM. For ISDN, enter 6X40AC. ***Note:*** NT6X40AD, NT6X40FB, and NT6X40FC cards provide enhanced diagnostic capabilities. If PEC6X40 datafill is set to the NT6X40AC or NT6X40FA version of the card, the new diagnostics capabilities are not initiated. The CM treats the interface as NT6X40AC/NT6X40FA regardless of the card installed.
EXTINFO (CSP02-)		see subfield	*Extension shelf information* An extension shelf is available in a CMVI and MVIE frame or cabinet. The MVDD frame does not contain an extension shelf. This field consists of subfield EXTSHELF.
	EXTSHELF (CSP02-)	Y or N	*Extension shelf* If the PM is a CPM-based host peripheral (for example GPP), and is equipped with an extension shelf, enter Y (yes) and datafill the fields below; otherwise, enter N (no). No other datafill is required. DTCO2 does not support EXTSHELF. For DTCO2, enter N (no). The default value for this field is N.
	EXTFRTYP (CSP02-)	MVIE, CEXT or NIL	*Extension frame type* Enter the type of frame in which the extension shelf is housed. For GPP, enter CEXT. For SMA2, enter MVIE.
	EXTFRNO (CSP02-)	0 to 511	*Extension frame number* Enter the number of the frame in which the extension shelf is housed.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
	EXTSHPOS (CSP02-)	0 to 77	*Extension shelf position number* Enter the extension shelf position number.
	EXTFLOOR (CSP02-)	0 to 99	*Extension shelf floor number* Enter the number of the floor on which the extension shelf is located.
	EXTROW (CSP02-)	0 to 39,A to Z, AA to ZZ; except I, II, O, and OO	*Extension shelf row number* Enter the number of the row in which the extension shelf is located.
	EXTFRPOS (CSP02-)	0 to 99	*Extension shelf frame number* Enter the number indicating the frame position in which the shelf is housed.
	EXTEQPEC (CSP02-)	MX86AA, MX86AB	*Extension shelf equipment PEC* Enter the extension shelf equipment PEC. For SMA2, enter MX86AB. For GPP, enter MX86AA.
	EXTSIDE (CSP02-)	L or R	*Extension shelf side* Enter the extension side of the shelf: L (left) or R (right).

Datafill example

The following example shows sample datafill for table LTCINV.

MAP display example for table LTCINV

```
LTCNAME
   ADNUM    FRTYPE  FRNO    SHPOS   FLOOR   ROW FRPOS   EQPEC LOAD
EXECTAB
CSLNKTAB
OPTCARD
    TONESET     PROCPEC     EXTLINKS
                        E2LOAD
                                                          OPTATTR
   PEC6X40                          EXTINFO
_____________________________________________________________________________
   LTC  1
    1004   LTE    18        1     1       C   9      6X02AA ECL06BD
(POTS POTSEX) (KEYSET KSETEX) (ABTRK   DTCEX) (RMM_TERM RSMEX)$
( 0 34) ( 1  2) ( 1 34) (2 2) (2 34) (0 2) (1 17) (1 49) (2 17)
(2 49) (0 18) (0 50) (1 18) (1 50) (2 18) (2 50)$
(UTR16 ) (NT7X05AA 17) (CMR18 CMR03A) (MSG6X69)$

NORTHAM MX77AA MX77AA       0
                      NILLOAD                                   $
6X40AA     N
```

The following example shows sample datafill for table LTCINV, supporting HDLC messaging protocol. It is provisioned for Japan only.

MAP display example for table LTCINV

```
LTCNAME
   ADNUM    FRTYPE  FRNO    SHPOS   FLOOR   ROW FRPOS   EQPEC LOAD
EXECTAB
CSLNKTAB
OPTCARD
    TONESET     PROCPEC     EXTLINKS
                        E2LOAD
OPTATTR
   PEC6X40                          EXTINFO
_____________________________________________________________________________
   LTC  1
   1004     LTE     0       18      1         C   9 NX33GC ECL06BD
(KEYSET KSETEX) (RMM_TERM RSMEX)$
( 0 34) ( 1  2) ( 1 34) (2 2) (2 34) (0 2) (1 17) (1 49) (2 17) (2 49)
(0 18) (0 50) (1 18) (1 50) (2 18) (2 50)$
(UTR16 ) (CMR18 CMR03A) (MSGMX76  HOST  HDLC)$

JAPAN1 MX77AA MX77AA        0
                      NILLOAD                                   $
6X40FA     N
```

The following example shows sample datafill for an LTC with an SX05AA processor and a PRL memory packlet datafilled in field PROCPEC.

MAP display example for table LTCINV

```
LTCNAME
   ADNUM    FRTYPE  FRNO    SHPOS   FLOOR   ROW FRPOS   EQPEC LOAD
EXECTAB
CSLNKTAB
OPTCARD
    TONESET     PROCPEC     EXTLINKS
                        E2LOAD
OPTATTR
   PEC6X40                        EXTINFO
_____________________________________________________________________
   LTC  0
   1        LTE     0       32      2         A   18 6X02NA QLI10BQ
(POTS POTSEX) (KEYSET KSETEX) (ABTRK DTCEX) (RMM_TERM RSMEX)$
(1 48) (1  49) (1 50) (1 51) (1 52) (1 53) (1 54) (1 55) (1 56) (1 57)
(1 58) (1 59)$
(UTR17 ) (MSGMX76  HOST) (  ISP 16) $

NORTHAM SX05AA PRL $ SX05AA PRL $   0
                      SPPCSA01                                  $
6X40AC                             N
```

Note: For ISDN capabilities, the ISP card must be packfilled.

The following example shows datafill for an LGCO+ without ISDN or extended distance capability for China.

MAP display example for table LTCINV

```
    LTCNAME   FRTYPE FRNO SHPOS  FLOOR  ROW FRPOS  EQPEC     LOAD
EXECTAB
CSLNKTAB
OPTCARD
   TONESET      PROCPEC
                    E2LOAD
OPTATTR
   PEC6X40                            EXTINFO
-----------------------------------------
      PLGC   1     LTEI    1    51      1   AA    18 6X02UC OLG07GBL
                (      POTS POTSEX) (    KEYSET KSETEX) (  RMM_TERM
RSMEX)$
 (0 10 1 0) (0 10 1 1) (0 10 1 2) (0 10 1 3) (0 10 1 4) (0 10 1 5)
 (0 10 1 6) (0 10 1 7) (0 10 1 8) (0 10 1 9) (0 10 1 10) (0 10 1 11)
 (0 10 1 12) (0 10 1 13) (0 10 1 14) (0 10 1 15) $
           (UTR15 ) (MSG6X69) (CMR13 CMR03A) (NT6X44EA ) (NT6X28 ) $
    CHINA100    MX77AA MX77AA
                              MX77NH04                      $
     6X40FA     N
```

The following example shows datafill for table LTCINV supporting FDCP.

MAP display example for table LTCINV

```
LTCNAME
   ADNUM    FRTYPE  FRNO    SHPOS   FLOOR   ROW FRPOS   EQPEC LOAD
                                                          EXECTAB
                                                          CSLNKTAB
                                                          OPTCARD
    TONESET                     PROCPEC
                               E2LOAD
                                                         OPTATTR
   PEC6X40                                  EXTINFO
_____________________________________________________________________
   PDTC 40  LTEI    1       5       9       A   10 6X02UC   ODT09BA
                             (   ABTRK DTCEX)    (   PRAB DTCEX)$
(0 14 1 0) (0 14 1 1) (0 14 1 2) (0 14 1 3) (0 14 1 4) (0 14 1 5)
(0 14 1 6) (0 14 1 7) (0 14 1 8) (0 14 1 9) (0 14 1 10) (0 14 1 11)
(0 14 1 12) (0 14 1 13) (0 14 1 14) (0 14 1 15)$
                    (  UTR15) (  RAM6X69) ( NT6X44EA) (  NT6X28)$
   ITALYMFC         MX77AA      MX77AA
                        UPFWNK01
                                              (  CCS7) ( FDCP)$
   6X40AC                                   N
```

The following example shows SX05 based DTCO2i tuple with PRL.

MAP display example for table LTCINV

```
    LTCNAME   FRTYPE FRNO SHPOS  FLOOR  ROW FRPOS  EQPEC     LOAD
EXECTAB
CSLNKTAB
OPTCARD
   TONESET      PROCPEC      EXTLINKS
                    E2LOAD
OPTATTR
   PEC6X40                          EXTINFO
-------------------------------------------------------------------
     PDTC    5     LTEI 1     0      2     C    0  MX85AA   QCI12AT

                                    (ABTRK UKPDTC) (PRAB DTCEX) $
(0 31 18 0) (0 31 18 1) (0 31 18 2) (0 31 18 3) (0 31 18 4) (0 31 18 5)
(0 31 18 6) (0 31 18 7) (0 31 18 8) (0 31 18 9) (0 31 18 10)(0 31 18 11)
(0 31 18 12)(0 31 18 13) (0 31 18 14)  (0 31 18 15) $
                        ( UTR6 ) ( MSGMX76 HOST ) ( ISP 4 ) $
INDIA      SX05AA     (PRL) $ SX05AA (PRL) $
                           SXFWAE08                        $
     6X40AC     N
```

The following example shows datafill to activate the Brazil Toneset on the peripherals.

MAP display example for table LTCINV

```
    LTCNAME   FRTYPE FRNO SHPOS  FLOOR  ROW FRPOS  EQPEC     LOAD
EXECTAB
CSLNKTAB
OPTCARD
   TONESET      PROCPEC      EXTLINKS
                    E2LOAD
OPTATTR
   PEC6X40                          EXTINFO
-----------------------------------------------------------------
     PDTC    40     LTEI 1     51      3     E    7  6X02UC   ODI16AR

                                   (ABTRK DTCEX) (PRAB DTCEX) $
(0 14 2 0) (0 14 2 1) (0 14 2 2) (0 14 2 3) (0 14 2 4) (0 14 2 5)
(0 14 2 6) (0 14 2 7) (0 14 2 8) (0 14 2 9) (0 14 2 10)(0 14 2 11)
(0 14 2 12)(0 14 2 13) (0 14 2 14)  (0 14 2 15) $
                   (UTR15) (RAM6X69) (NT6X44EA) (ISP 16) (NT6X28)$
BRASMF      MX77AA     MX77AA 0 UPFWNM04 $

     6X40FAN    N
```

The following example shows sample datafill for table LTCINV without and with EXTDS512 datafill.

MAP display example for table LTCINV without and with EXTDS512 datafill

```
LTCNAME ADNUM FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC LOAD EXECTAB CSLNKTAB
OPTCARD TONESET PROCPEC EXTLINKS E2LOAD OPTATTR PEC6X40 EXTINFO
_____________________________________________________________________________
LTC 0 1001 LTEI 0 18 1 D 38 6X02NA QLI18BA (POTS POTSEX) (KEYSET KSETEX)
(ABTRK DTCEX) $ (0 10 1 0) (0 10 1 1) (0 10 1 2) (0 10 1 3) (0 10 1 4)
(0 10 1 5) (0 10 1 6) (0 10 1 7) (0 10 1 8) (0 10 1 9) (0 10 1 10)
(0 10 1 11) (0 10 1 12) (0 10 1 13) (0 10 1 14) (0 10 1 15) $ (UTR15 )
(MSG6X69 ) (CMR13 CMR10A) (ISP 16) $ NORTHAA SX05AA $ SX05AA $ 0 SXFWAJ02 $
6X40FB N

LGC 0 30 LTEI 0 4 1 C 31 6X02NA QLI18BA (POTS POTSEX) (KEYSET KSETEX) $
(4 1) (4 2) (4 3) (4 4) $ (UTR15 ) (MSG6X69 ) (ISP 16) $ NORTHAA SX05AA $
SX05AA $ 0 SXFWAJ02 (EXTDS512 10 32 2 66 GWC 2) $ 6X40FB N

LGC 1 11 LGEI 1 51 1 E 37 6X02NA QLI18BA (POTS POTSEX) (KEYSET KSETEX) $
(4 0) (4 1) (4 2) (4 3) $ (UTR15 ) (MSG6X69 ) (CMR13 CMR10A) (ISP 16) $
NORTHAA SX05AA (PRL) $ SX05AA (PRL) $ 0 SXFWAJ02
(EXTDS512 10 32 68 194 GWC 21) $ 6X40FB N
```

The following example shows datafill to activate the HONTONES toneset.

MAP example for table LTCINV, for HONTONES toneset

```
LTCNAME ADNUM FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC LOAD EXECTAB
CSLNKTAB OPTCARD TONESET PROCPEC EXTLINKS E2LOAD OPTATTR PEC6X40 EXTINFO
-----------------------------------------------------------------------
PLGC 0 2 IDTE 0 51 0 D 3 6X02UC TLG17TAC (POTS POTSEX) (KEYSET KSETEX)
(RMM_TERM RSMEX) $ (0 8) (0 9) (1 24) (1 25) (0 10) (0 11) (0 12) (0 13)
(0 14) (0 15) (1 26) (1 27) (1 28) (1 29) (1 30) (1 31) $ (UTR15 ) (UTR17 )
(MSG6X69 ) (CMR13 CMR10A) (NT6X44EA ) $ HONTONES MX77AA MX77AA 0 UPFWNU01
(METER ) $ 6X40AC N
```

The following example shows datafill with the EBI download to DTOC2 activated. When EBI is added, static data should be downloaded to DTCO2 by BSY/RTSing the Inactive unit and then performing a WARMSWACT.

MAP example for table LTCINV, for EBI download to DTOC2

```
PDTC 0 1 LTEI 7 9 9 C 4MX85AA QCI17AY1 (ABTRK UKPDTC) $
(PRAB DTCEX)$ (0 32 18 0) (0 32 18 1) (0 32 18 2) (0 32 18
3) (0 32 18 4) (0 32 18 5) (0 32 18 6) (0 32 18 7) (0 32 18
8) (0 32 18 9) (0 32 18 10) (0 32 18 11) (0 32 18 12) (0 32
18 13) (0 32 18 14) (0 32 18 15) $ (UTR6) (MSGMX76 HOST)$
TURKR1R2 SX05AA $ SX05AA $ OSXFWAJ02(CCS7) (FSTR2) (EBI)$
6X40FB N
```

Supplementary information

Much of the information previously described in the general section of table LTCINV is now contained in the section “Field descriptions”.

PLGC is the XPM used to datafill line group controllers with PCM30 running North American call processing software. This applies whether the PM is a P3LGC, a P2LGC, or a P2LGCI. PM types P3LGC, P2LGC, P2LGCI, and PLGC are differentiated by frame type, equipment PEC (shelf code), and the presence of an ISP optional card.

The following table shows the values used in fields FRTYPE and EQPEC for PLGC and PDTC. It also contains the format of the software load for that type of peripheral. Field OPTCARD shows possible UTR, ISP, and NT6X28 cards.

PLGC/PDTC datafill

	PM type				
Field name	**P3LGC**	**P2LGC**	**P2LGCI**	**P3DTC**	**P2DTC**
XPMTYPE	PLGC	PLGC	PLGC	PDTC	PDTC
FRTYPE	ILGE	LTEI	LTEI	IDTE	LTEI
EQPEC	6X02P3	6X02UA	6X02UA	6X02P3	6X02UA
OPTCARD	UTR8	UTR15	UTR15	UTR8	UTR15
	UTR9	UTR16	UTR17	UTR9	UTR16
	UTR10	UTR17		UTR10	UTR17
	UTR11		ISP	UTR11	
	NT6X28	NT6X28	NT6X28	NT6X28	NT6X28

PLGC/PDTC datafill

Field name	PM type P3LGC	P2LGC	P2LGCI	P3DTC	P2DTC
	NT6X28AB	NT6X28AB	NT6X28AB	NT6X28AB	NT6X28AB
LOAD	NPLxxyy	ULGxxyy	ULIxxyy	NPDxxyy	UDTxxyy

Adding, changing, or removing links in table LTCINV

Dynamic C-side link reconfiguration of a PDTC and a PLGC is not supported if table SPECCONN has connections throughout the network. If a user attempts to alter a C-side link in table LTCINV when at least one network SPECCONN connection uses that XPM, the tuple change is not permitted and the following error message is displayed:

```
ERROR: DELETE NETWORK SPECCONN CONNECTIONS BEFORE CHANGING
CSLINKS
```

If a time-division multiplex (TDM) connection uses an equipped C-side port off a PLGC, a tuple change is not allowed on that C-side link in table LTCINV. The corresponding ISDN line must be deleted before altering the related C-side link. The following error message is displayed:

```
ERROR: TDM CONNECTIONS ON THIS LINK. CANNOT CHANGE CSLINKS. USE
QSCONN TO FIND THE ISDN LINES TO BE REMOVED. RE-DATAFILL THESE
LINES ONCE CSLINKS CHANGE IS OVER.
```

Adding the value NTAX78AB to field OPTCARD for an SMU without the ISP1 optional card is not valid. An SMU without ISDN and MBS does not support the NTAX78AB time switch. The following error message is displayed:

```
ERROR: MUST HAVE ISP TO PROVISION NTAX78AB on SMU.
```

Deleting the value ISP from field OPTCARD for an SMU that has the NTAX78AB optional card datafilled is not valid. An SMU without ISDN and MBS does not support the NTAX78AB time switch. The following error message is displayed:

```
ERROR: MUST REMOVE NTAX78AB OPTCARD BEFORE REMOVING ISP.
```

If an ISP card is already datafilled for a specific GPP and a V5.2 interface is attached, the operating company personnel cannot delete the card from the list of optional cards. The following error message appears:

```
ERROR: The ISP OPTCARD cannot be removed, since there is a V5.2
AN attached.
```

Conversely, operating company personnel cannot attach a V5.2 interface to a specific GPP if the GPP is not datafilled with an ISP card in field OPTCARD.

Adding the value NTAX78AB to field OPTCARD for an SMU that cannot support it, is not valid. Feature package NTX387AE is not present in the CC load. The following error message is displayed:

```
ERROR: NTAX78AB IS NOT A VALID OPTCARD FOR THIS TYPE OF
PERIPHERAL.
```

Mapping of links from an RCO2 through the PLGC takes precedence over any requirements for channels for call processing in the PLGC.

If the data change affects link information to a PLGC hosting an RCO2, the result can be static data changes to the PLGC. Such changes affect call processing to both the PLGC and the RCO2, and must be done during low traffic periods. If a static data mismatch condition occurs on the PLGC, two WARMSWACTS must be done to update the static data in both units of the PLGC. Care must be taken when making any changes in the C-side or P-side links. The user must ensure that enough call processing C-side capacity remains in the PLGC.

PDTCs cannot be added to table LTCINV if 8-bit SLS load balancing is active and CCS7 routing tables exist in the XPM. If PDTCs are not allowed, the following error message appears:

```
ERROR: PDTC type peripherals are not allowed in table LTCINV
when 8 bit SLS load balancing is enabled and routing tables are
downloaded in the XPMs. Please activate LIU7 routing and remove
the routing tables before adding a PDTC to the LTCINV table.
```

A value of ECL12 or later in field LOAD produces an error under the following conditions.

- the PM is an NTMX77 based LTC/LGC
- the PM has subtending ILD drawers and/or RLD ISDN LENs.

The error message produced from the above conditions is as follows.

```
Warning: ECL12/13/14 load will cause ILD Drawers and RLD ISDN
     LENs to stop working on MX77-based LTC/LGC peripheral.
     (Note: RLD POTS and P-phone will be OK) User should upgrade
     the LTC/LGC to SX05 processor, or delete the ILD/ RLD
     datafill, or move ILD/RLD to a supporting peripheral.
```

Note: If operating company personnel continue with this datafill but do not delete or move the ILD/RLD lines, an E1 outage can occur.

Dump and restore

If the load is for Japan, replace all occurrences of DTCEX with JDTCEX.

If the load is not for Japan, transfer the LTCINV tuple without changes.

Table history

SN07 (DMS)

A00003411

Added toneset HONTONES to TONESET field.
Added datafill example for activation of the HONTONES toneset.
Documentation updated at SN08 (DMS).

A00004750

Added new EBI (feature function code) to field OPTATTR, and a datafill example. Documentation updated at SN08 (DMS).

SN06 (DMS)

A00001150

SOC option SBAS0003 allows the maximum number of tuples in use to be limited. If the option is active, and an attempt is made to add more tuples than the current limit allows, an error message is generated.

CSP18/SN05

59038361

Added optional attribute EXTDS512 to field LTCINV_OPT_ATTR to allow data to be captured when an XPM is connected to a DS512 interface. When this attribute is added, the table control software prompts the user for the IP address of the DS512 interface and the Host GWC.

SN04 (DMS)

59022865

Toneset ‘PNGMFC’ used for PLGC’s and PDTC’s in the Papua New Guinea market.

59033657

Added datafill example for activation of the Brazil Toneset.

MMP16

Added entries HONGKONG and HKMFC to the TONESET field to allow datafill of Hong Kong MF and MFC tonesets for feature 59027355.

Added entry AUSMF to field TONESET to allow datafill of Australian tonesets for activity 59027560.

Added entries ISRDADSI and ISRLADSI to field TONESET to allow datafill of Israel tonesets for activity 59027848.

Added entries KOREA and KOREANMF to field TONESET to allow datafill of Korean tonesets for activity 59027574.

MMP15

Added entry MK8505 to field EQPEC, and entries XPM_UTR4 and SCPM_MK76_MSG to field OPTCARD.

Added entries HUNLGC and HUNDTC to field TONESET to allow datafill of Hungarian tonesets for activity 59022137.

Added entries CZECHMF and CZECHMFC to field TONESET to allow datafill of Czech tonesets for activity 59022144.

Added entries SINGMF and SINGMFC to field TONESET. Tone sets for Singapore.

Added entries POLDTC and POLLGC to the TONESET field. The additional options allow datafill of Polish tone sets.

Added entries FDAUS300, FDAUS100, FDMEXMF, FDMXDTMF, FDNZLGC, FDNZDTC. These values are not supported and should not be used.

Added entries MK8505 to the EQPEC field and entry UTR4 in the OPTCARD field for activity AF7487.

MMP14

Added entries DENMARK, DENMARKMFC, PERUDTC, PERULGC, SWDLGC, SWDDTC to the TONESET field. The additional options will allow datafill of Danish, Peruvian and Swedish tone sets.

NA014

Added the MVDD (multi-vendor double density) frame type to field FRTYPE.

MMP13

Added downloadable analog display services interface (ADSI) tone sets for Malaysia (MALYADSI), the Philippines (PHILADSI) and Sri Lanka (SRILADSI).

NA012

Added the MSGMX76 card to the OPTCARD field for DTCI.

MMP12

Added the options CWAPCDTC, CWAPCLGC, CWCHILGC and CWCHIDTC to the TONESET field. The additional options allow the datafill of Caribbean tone sets for the PLGC and PDTC.

Added the option IRISHMF to the TONESET field for Irish tones (59008116). Removed the options EIREDTC and EIRELGC.

Added a description for replacing the MX77AA or AX7AA processor with the SX05AA processor in the PROCPEC field.

Added datafill example for SX05 based DTCO2i tuple with PRL.

EUR010

Added the options NORWMF and NORWMFC to the TONESET field for AU3311.

Added description for XPM-based and CPM-based PDTC in field EQPEC.

Added description for PDTC+ (PEC MX85AA in field EQPEC) for optional cards in field OPTCARD.

Added Note 3 for OPTCARD = MSGMX76.

WT11

Added value JDTCEX to field EXEC for Japan.

NA010

Added the NTAX78BA time switch card to the field OPTCARD options list. Added error messages that can be generated during attempts to add or delete NTAX78BA from the OPTCARD list.

Added new subfield PACKLET under field PROCPEC for use when PRL functionality is required with an SX05AA processor.

NA009

Changed table size to 210 tuples. Added note to subfield XPMNO. Table LTCINV has been updated for the NA011 release of this document. This update was made in response to a Problem Resolution System (PRS) request for the NA009 time frame.

APC009.1

Added values CWAPCLGC and CWAPCDTC to field TONESET.

APC009

Added the INDIA, JAPAN3, and SRILANKA values to the TONESET field.

CSP09

Added note to subfield XPMTYPE and error message to section Adding, changing, or removing links in table LTCINV regarding restrictions on entry PDTC.

EUR009

FDCP is a new value and is introduced to the existing Optional Attribute field.

The options AUTMF and AUTMFC are added to the TONSET field for AJ5185.

The options SWISSMF and SWISSMFC are added to the TONSET field for AJ5134.

NA008

Removed references to AML from table 6. Table LTCINV has been updated for the NA011 release of this document. This update was made in response to a Problem Resolution System (PRS) request for the NA008 time frame.

EUR007

Added downloadable tones for Spain (SPAINMF and SPAINMFC), France (TONFRMF and TONFRMFC), Italy (ITALYMF and ITALYMFC), Dutch (DUTCHMF and DUTCHMFC), and Belgium (BELMF and BELMFC) markets to the TONESET field.

TL08

Information on the NTAX74 XPM processor card was added. The name of field PEC6X45 was changed to PROCPEC. Removed restrictions on support for the NT7X05 PRL card when the NTAX74 card is datafilled in PROCPEC. Information on the NTSX05AA processor was added to the description of field PROCPEC.

EUR006

Added options SAUDIDTC and SAUDILGC in field tone set to meet the tones specification for the Saudi Arabian market.

Added provisioning for STR Tone Detection on DMS-100E enabling tone detection throughout the active phase of a call. New options STR16IC and STR17IC are added to OPTCARD field and range value STRDTRE added to OPTATTR field.

Added support for ETSI V5.2 accesses using the KSETEX executable for UK Phase 2 ISDN BRI.

GL03.1

Added datafill example for a PLGC (LGCO+) without ISDN or extended distance capability hosting an RCO2.

APC07

Values PHILTONE and MALAYSIA added to field tone set.

APC06

Added required card MSGMX76, in field OPTCARD, for all LTCs supporting HDLC protocol feature XL0011. Added information on 6X40AD and 6X40FB cards in field PEC6X40.

APC05.1

Added required card MSGMX76 in field OPTCARD, for all FPPs, and added ISP card in field OPTCARD, for GPPs with V5.2 interfaces.

NA005

Added AK31AA, AK31AT, AK81AD, and AK81AT to field EQPEC.

Added description for DCTAX78AA entry in field OPTCARD.

Added restrictions for a GPP equipped with an EISP ISP optional card with a V5.2 attachment.

TOPS04

Value OC added to field OPTATTR.

APC04

Value JAPANSMS added to field tone set.

NA004

The following changes were made to table LTCINV:

- added value NT7X05AA with subfield SLOT_NUMBER to field OPTCARD
- updated datafill example
- removed references to PRCC PM type that is no longer supported

CSP03

The following entries were added to table LTCINV:

- SMA2 to field XPMTYPE
- MX85AB to field EQPEC
- CMVI to field FRTYPE

- MVIE to subfield EXTFRTYP
- MX86AB to subfield EXTEQPEC

APC02

Added PM type LGCO for line group controller offshore (datafilled as PLGC).

NA002

The following additions were made to table LTCINV:

- value NTAX78AB, with an explanation and action to field OPTCARD
- three error messages for value NTAX78AB
- the value NORTHAA for North American ADSI in field tone set

CSP02

The following changes were made to table LTCINV:

- removed all references to PM type HS12
- added reference to new extension shelf to section “Functional description”
- added value GPP to field XPMTYPE
- added field EXTINFO and its refinements

BCS36

The following changes were made to table LTCINV:

- deleted values RCC and RCC2 from field XPMTYPE; moved values to table RCCPSINV
- deleted entry M200 from field TRMTYPE for BCS35 and up
- corrected entry in field tone set (changed NZLG to NZLC)
- corrected value in field OPTCARD (changed NT6X28AB to NT6X28BA)

LTCPSINV

Table name

Line Trunk Controller P-Side Link Inventory Table

Functional description

Table LTCPSINV contains the assignment of the peripheral side (P-side) links for the peripheral modules (PM). The key for this table is the same as the key for table LTCINV.

An entry in table LTCPSINV is added automatically when an extended multiprocessor system (XMS)-based PM (XPM) or a common peripheral module (CPM) is datafilled in table LTCINV. All the P-side link types initially default to NILTYPE. P-side links that do not have hardware assigned must remain NILTYPE. Unequipped software assigned P-side links generate service-affecting problems.

Feature AN0543 (P-side port and static data—TL) supports P-side port expansion for the Global Peripheral Platform (GPP), which is a common peripheral module (CPM)-based host peripheral, supporting time-division multiplexing (TDM). GPP supports up to 48 PCM30 links connected to generic access nodes (AN); therefore, up to 6000 lines are supported.

ATTENTION

ISDN line drawer for remotes (ILDR) is first available for remote switching center-SONET (RSC-S) and remote switching center (RSC) configurations in the NA007/XPM08 time frame. ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 time frame.

When changing the carrier of a link connected to an ILDR-equipped RLCM, the new carrier must allow 64 kbit/s clear channel.

For related information, refer to table LTCINV.

Peripheral module types

Table Table , "PM types" on page -491 shows the PM types that are supported by table LTCPSINV.

PM types

PM	Meaning
ADTC	Austrian digital trunk controller
BDTC	British digital trunk controller
DFI	Direct fiber interface
DTC	Digital trunk controller
DTCI	ISDN digital trunk controller
GPP	Global Peripheral Platform
IDTC	International digital trunk controller (pulse code modulation 30 [PCM30] trunks)
ILGC	International line group controller
ILTC	International line trunk controller
LGC	Line group controller/line group controller ISDN
LTC	Line trunk controller/line trunk controller ISDN
PDTC	PCM30 digital trunk controller
PLGC	PCM30 line group controller
RCC	Remote cluster controller
RCC2	Remote cluster controller 2
SMA	Subscriber carrier module-100S access
SMA2	Subscriber carrier access 2
SMR	Subscriber carrier module-100 rural
SMS	Subscriber carrier module-100S (SLC-96) (controls subscriber loop carrier [SLC] remote)
SMU	Subscriber carrier module-100 urban (controls remote concentrator terminal [RCT] of the DMS-1U system)
TMS	Traffic Operator Position System (TOPS) message switch

LTCPSINV (continued)

Datafill sequence and implications

The following tables must be datafilled before table LTCPSINV:

- LTCINV
- CARRMTC

Table size

Memory is automatically allocated for a maximum of 256 tuples for table LTCPSINV.

Datafill

Field names, subfield names, and valid data ranges for table LTCPSINV are described in the following table:

Field descriptions (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
LTCNAME		see subfields	*Link trunk controller name* This field consists of subfields XPMTYPE and XPMNO.
	XPMTYPE	ADTC, BDTC, DFI, DTC, DTCI, GPP, IDTC, ILGC, ILTC, LGC, LTC, PDTC, PLGC, RCC, RCC2, SMA, SMA2, SMR, SMS, SMU, or TMS	*XPM type* Enter the extended multiprocessor system (XMS)-based peripheral module (XPM) or common peripheral module (CPM) type. See table Table , "PM types" on page -491 for a definition of the PMs.
	XPMNO	0 to 255	*XPM number* Enter the XPM number.
PSLNKTAB		see subfield	*P-side link table* This field consists of subfield EXP_SIDES.

Field descriptions (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	EXP_PSIDES(CSP02-)	Y or N	*Expanded P-sides platform indicator* If the entry in field XPMTYPE is a Common peripheral module (CPM), host-based peripheral, for example a GPP, and it is equipped with an extension shelf, enter Y (yes) and datafill field EXP_TAB. Otherwise, enter N (no) and datafill field LTC_TAB. Enter a Y for an ISDN LTC/LGC equipped with an NTAX78BA time switch.
	LTC_TAB(CSP02-)	see subfields (vector of up to 20 multiples)	*Line trunk controller table* This field consists of subfields PSLINK and PSDATA.
	EXP_TAB(CSP02-)	see subfields (vector of up to 48 multiples)	*Expansion table* This field consists of subfields PSLINK and PSDATA.
PSLINK		0-190 to 39, 0 to 15,0 to 47	*P-side link* Enter the P-side port number. For DCH, enter an odd-numbered port. A D-channel handler (DCH) can occupy any of the odd-numbered ports on the P-side. For DS-0, enter any even-numbered port. For DS30A, enter any port 0-19 (if equipped with an NT6X44AA time switch) or port 0-39 (if equipped with an NTAX78BA time switch). For IDTC, enter 0 to 15. For GPP, enter 0 to 47. For PLGC, enter 0 to 19. For DS1, enter any port 0-19. Any entry outside the ranges indicated for this field is invalid.

LTCPSINV (continued)

Field descriptions (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
PSDATA		see subfield	*P-side data* This subfield consists of subfield AREASELCT.
	AREASELCT	DCH, DS0, DS1, DS1PRA, DS30A, D30, M20, NDS0, P30PRA, NILTYPE, SONET, TTC, or VT1H	*Area select* Enter the applicable link type as follows: Enter DCH for interface with ISDN loops for LGC, LTC, and PLGCs with ISDN signaling processor 16 (ISP) in the OPTCARD field in table LTCINV. ***Note:*** On an SMU, P-side ports can be assigned to DCHs if the SMU has enhanced ISDN signaling processor (EISP) as an optional card. Enter DCH or DS1 for SMA. Enter DCH, DS1 or NILTYPE for SMA2. Enter DCH or D30 for PCM30 TMS. ***Note 1:*** If the entry in this field is DCH, no other datafill is required. ***Note 2:*** Only the first 16 ports are allowed for PCM30 TMS, but all 20 ports are displayed. Entry of DCH ports is prohibited for an ETMS OC (field OPTATTR = OC in table LTCINV). This is because an ETMS can be utilized as an ETMS OC or a terminal server, but not both. Also, DS1/PCM30 ports cannot be removed if an ETMS OC data link is defined on that ETMS in table TMSOCDL. Then, all ETMS OC data links defined on the given port must first be removed from table TMSOCDL.

Field descriptions (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
			Enter DS0 • for interface with a signaling transfer point (STP) node • for ADTCs without ISP DS0 is a valid link type for PDTCs only if the referenced template in table CARRMTC has been datafilled with card option NT6X55BA (64-kbit access) or NTX6X55AB (DS-0 interface). DS0 links can only be specified on even ports. Enter NILTYPE for odd ports. ***Note:*** DS0 is valid only for North American DTCs. Enter DS1 • for DS-1 type interface card for trunks and remote line concentrating modules (LCM) • for LTCs and LGCs with or without ISP Enter DS1PRA for interface with ISDN trunks. Enter DS30A • for P-side interface to local LCMs or for PLGCs • for LGCs and LTCs with or without ISP ***Note:*** DS30A can only be datafilled in links 0 to 19 (if equipped with an NT6X44AA time switch) or 0-39 (if equipped with an NTAX78BA time switch.

LTCPSINV (continued)

Field descriptions (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
			Note: If the entry in this field is DS30A, no other datafill is required. Enter D30 for an interface to PCM30 trunks and to PCM30 remote line concentrating modules (PRLCM). D30 is a valid P-side link for GPP, PDTCs, and PLGCs with or without ISP. ***Note:*** D30 carriers are allowed on ILGCs. Enter M20 for a Japan M20-type carrier. For NDS0 links, enter NDS0, starting with an even-numbered link. NDS0 links are datafilled in two consecutive P-side links. Enter TTC for Japan trunk test center (TTC)-type carrier. Enter NILTYPE for PLGC. ***Note 1:*** If the entry in this field is NILTYPE, no other datafill is required. ***Note 2:*** NILTYPE must not be datafilled as initial input. If field LTCNAME is datafilled with a PDTC, enter P30PRA. P30PRA is a valid link type for ADTCs, PDTCs, and PLGCs with ISP. Any entry outside the range indicated for this field is invalid. Enter VT1H for direct fiber interface (DFI) peripheral types. If the entry in subfield AREASELCT is NDS0, up to 4 multiples of CARRIDX, ACTION, and EQUIP can be datafilled. The default value for this field is NILTYPE. ***Note:*** For Gateways, PSDATA is DSI GWIP.

Field descriptions (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
CARRIDX		alphanumeric (1 to 16 characters) or DEFAULT	*Carrier index* Enter a valid template name from table CARRMTC. Otherwise, enter DEFAULT for the default template name in table CARRMTC. ***Note 1:*** If the entry in CARRIDX is ESFB8ZS for high data link controller (HDLC) and link access protocol on the D-channel (LAPD) then datafill subfield AREASELECT with DS1. ***Note 2:*** If the entry in subfield AREASELCT is DS1, this field must contain NT6X50AB as the carrier card for configuration of clear channel (64kb/s), provisioned for Japan only. ***Note 3:*** If the entry in subfield AREASELCT is DS0, this field must contain NT6X55BA or NT6X55AB as the carrier card to allow specification of the DS-0 link type on a PDTC. DS-0 links can only be specified on even-numbered ports. Odd-numbered ports must be specified as NILTYPE.
ACTION		Y or N	*Action* Enter Y (yes) if the carrier is removed from service when a hit-state alarm exceeds its out-of-service threshold or when the out-of-service limit for frame, slip, errored-second, or severe-errored-second is exceeded. Otherwise, enter N (no).

LTCPSINV (continued)

AREASELCT = NDS0

If the entry in subfield AREASELCT is NDSO, datafill refinement EQUIP as described in the following table:

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	EQUIP	EQ or NEQ	*Carrier equipped* Enter EQ to indicate that the NDSO carrier is equipped. Otherwise, enter NEQ (not equipped).

AREASELCT = P30PRA

If the entry in subfield AREASELCT is P30PRA, datafill refinement IID as described in the following table:

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	IID	0 to 31	*Interface identifier* Enter an interface identifier (IID) that is datafilled in the equipment that terminates the DS-1. Each DS-1 has a different IID. The identifiers are used to identify primary rate access (PRA) interfaces. They are used by offices at either end of the PRA interface to identify the channel associated with the out-of-bank signaling information.

AREASELCT = DS1PRA

If the entry in subfield AREASELCT is DS1PRA, datafill refinements IID and LINEEQ as described in the following table:

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	IID	0 to 31	*Interface identifier* Enter an interface identifier (IID) that is datafilled in the equipment that terminates the DS-1. Each DS-1 has a different IID. The identifiers are used to identify primary rate access (PRA) interfaces. They are used by offices at either end of the PRA interface to identify the channel associated with the out-of-band signaling information. ***Note:*** Nortel Networks recommends that if there are several P-side links in a trunk group, the datafilled IID values be in ascending consecutive order. For example, if there are four P-side links in a trunk group, datafill IID values as 0, 1, 2, and 3. Nortel Networks recommends that the links be datafilled in ascending order. For example, a trunk group in table LTCPINV can be datafilled with P-side link values 3, 6, 8, 11, and 15 - but the associated IIDs must be datafilled as 0, 1, 2, 3, and 4.
	LINEEQ	110, 220, 330, 440, 550, 660, or NIL	*Line length from DS-1 circuit to first DS-1 office repeater* If the DS-1 carrier is equipped with NT6X50EC (integrated echo canceller card) tuple in table CARRMTC, enter the line length value that is used on the dual inline package (DIP) switch. Otherwise, enter NIL.

Datafill example

The following example shows sample datafill for table LTCPSINV.

LTCPSINV (continued)

MAP display example for table LTCPSINV

```
LTCNAME           PSLNKTAB
_____________________________________________________________

LTC   4
(0 DS1PRA PRA64K N 1 NIL)
(1 DS1 DEFAULT N) (2 DS1 DEFAULT N)
(3 DS1PRA PRA64K N 1 NIL) (4 DS1 DEFAULT N)
(5 DS1 DEFAULT N) (6 DS1 DEFAULT N)
(7 DS1 DEFAULT N) (8 DS1 DEFAULT N)
(9 DS1 DEFAULT N) (10 DS1 DEFAULT N)
(11 DS1PRA PRA64K N 1 NIL) (12 DS30A )
(13 DS1PRA PRA64K N 1 NIL) (14 DS30A ) (15 NILTYPE) (16
DS30A ) (17 DCH ) (18 DS30A ) (19 DCH ) $
```

The following example shows sample datafill for table LTCPSINV when the LTC is equipped with an NTAX78BA time switch.

MAP display example for table LTCPSINV -LTC equipped with NTAX78BA time switch

```
LTCNAME           PSLNKTAB
_____________________________________________________________

LTC   3
(0 DS1 DEFAULT N) (1 DS1 DEFAULT N) (2 DS1 DEFAULT N)
(3 DS1 DEFAULT N) (4 DS1 DEFAULT N) (5 DS1 DEFAULT N)
(6 DS30A) (7 DCH) (8 NILTYPE) (9 NILTYPE) (10 DS30A)
(11 DS30A) (12 NILTYPE) (13 DCH ) (14 NILTYPE)
(15 NILTYPE) (16 NILTYPE) (17 NILTYPE) (18 NILTYPE)
(19 NILTYPE) (20 DS30A) (21 DS30A) (22DS30A) (23 DS30A)
(24 DS30A) (25 DS30A) (26 NILTYPE) (27 DS30A) (28 DS30A)
(29 DCH) (30 NILTYPE) (31 DCH) (32 NILTYPE)
(33 NILTYPE) (34 NILTYPE) (35 DCH) (36 NILTYPE)
(37 NILTYPE) (38 NILTYPE) (39 NILTYPE) $
```

The following example shows sample datafill of table LTCPSINV for Japan only, with links 0, and 2 datafilled with a carrier index value of ESFB8ZS clear channel signalling (64 kbit/s), using a tuple datafilled in table CARRMTC to support HDLC LAPD messaging on these links. Links 1 and 3 have the value of DEFAULT for speech only. Links 4 through 19 are unequipped.

MAP display example for table LTCPSINV

```
LTCNAME           PSLNKTAB
_____________________________________________________________________
LTC   4
(0 DS1 ESFB8ZS N)(1 DS1 DEFAULT N)(2 DS1 ESFB8ZS N)
(3 DS1 DEFAULT N)(4 NILTYPE)(5 NILTYPE) (6 NILTYPE)
(7 NILTYPE)(8 NILTYPE) (9 NILTYPE)(10 NILTYPE)
(11 NILTYPE) (12 NILTYPE)(13 NILTYPE)(14 NILTYPE)
(15 NILTYPE)(16 NILTYPE ) (17 NILTYPE ) (18 NILTYPE )
(19 NILTYPE) $
```

The following example shows sample datafill for table LTCPSINV for Gateways. For Gateways, PSDATA is DSI GWIP.

MAP display example for table LTCPSINV

```
LTCNAME                                          PSLNKTAB
_____________________________________________________________

LTC   0
  N (0 DS1 GWIP N) (1 DS1 GWIP N)
  (2 DS1 GWIP N) (3 DS1 GWIP N)  (4 NILTYPE)
  (5 NILTYPE) (6 DS30A) (7 DS30A) (8 DS30A) (9 DS30A)
  (10 DS30A ) (11 DS30A) (12 DS30A) (13 DS1 DEFAULT N)
  (14 NILTYPE)  (15 DCH)  (16 NILTYPE)  (17 DCH)
  (18 NILTYPE )  (19 DCH) $
```

Error messages

The following table control error messages apply to tuple changes for the NTAX78BA equipped ISDN line group controller (LGCI) and ISDN line/trunk controller (LTCI).

- The MAP display shows an error message if a DS30A is already provisioned in the lower (0-19) port range and you attempt to assign a DS30A in the matching upper (20-39) port range. Matching means the lower port number plus 20. For example, lower port 2 has a matching

LTCPSINV (continued)

upper port of 22 (2+20=22). The following is an example (using ports 19 and 39 as examples) of the error message display.

```
An attempt has been made to assign 2 DS30As to the same
physical port. A DS30A in physical port 19 can only be
assigned as port 19 or port 39, but not both.
```

- The MAP display shows an error message if a DS1 is already provisioned on an even numbered port in the 0-19 port range (for example, 18) and you attempt to assign a D-channel handler (DCH) in the matching + 1 upper (20-39) port range (for example, 18+20+1=39). The error message is generated in this example because a DS1 and DCH cannot both be assigned to the same physical port. The following is an example of the error message display.

```
An attempt has been made to assign a DS1 and a DCH to the
same physical port. If a DS1 is assigned to physical port 18
or 19, a DCH cannot be assigned to port 39 (or if a DCH is
assigned to port 39, a DS1 cannot be assigned to port 18 or
19).
```

- The MAP display shows an error message if a DS1 is already provisioned on an odd numbered port in the 0-19 port range (for example, 19) and you attempt to assign a DCH in the matching 20-39 port range (for example, 19+20=39). The error message is generated in this example because a DS1 and a DCH cannot be assigned to the same physical port. The following is an example of the error message display.

```
An attempt has been made to assign a DS1 and a DCH to the
same physical port. If a DS1 is assigned to physical port 18
or 19, a DCH cannot be assigned to port 39 (or if a DCH is
assigned to port 39, a DS1 cannot be assigned to port 18 or
19).
```

- The MAP display shows an error message if a DCH is provisioned on an odd port in the lower (0-19) port range (for example, 1) and you attempt to assign a DCH to the matching upper (20-39) port range (for example, 1+20=21). An error message is generated because you cannot assign two DCHs to the same physical port. The following is an example of the error message display.

```
An attempt has been made to assign 2 DCHs to the same physical
port. A DCH in physical port 1 can only be assigned as port
1 or port 21, but not both..
```

- The MAP display shows an error message if the user attempts to change the field EXP_PSIDES from Y to N. The following is an example of the error message display.

```
This field cannot be changed.
```

Note: This restriction is there for any tuple/any XPM in this table. The user is not allowed to change this field with a manual operation.

- The MAP display shows an error message if you attempt to datafill more than 40 P-side ports. The following is an example of the error message display.

```
P-side link is out of valid range of 0...39 for NTAX78BA
equipped XPM.
```

- The switch does not allow you to provision DS1s on the upper 20 (20-39) P-side ports. You can only provision them on the lower 20 (0-19) P-side ports. The following is an example of the error message display.

```
Cannot datafill DS1s on ports 20 to 39 of an NTX78BA equipped
XPM.  DS1s can only be located on ports 0 to 19.
```

Table history

NA013

Added a MAP example for GWIP.

NA010

Added error message information for the NTAX78BA universal time switch card.

NA007

New restrictions have been added as a result of the introduction of the ILDR.

APC06

Added carrier index template ESFB8ZS for LTCs supporting an RLCM with extended distance capability, for Japan only.

APC05.1

Change GPP maximum line capability to 6000 lines and add CPM extension shelf information.

TOPS04

Added DCH and DS1 restrictions for ETMS OC in subfield AREASELECT.

CSP03

The following changes were made to table LTCPSINV:

- added SMA2 to field XPMTYPE
- added SMA2 information to PSLINK field

LTCPSINV (end)

CSP02

The following changes were made to table LTCPSINV:

- added information about P-side port expansion to section “Functional description"
- added value GPP to field XPMTYPE
- added fields EXP_SIDES, LTC_TAB, and EXP_TAB
- revised range of values in field PSLINK
- removed all references to PM type HS12

BCS36

Added value VT1H to field AREASELCT to accept VT1.5 links for DFI peripheral types.

LTCRINV

Table name

Line Trunk Controller Remote Inventory

Overview

Table LTCRINV contains the inventory data (except the P-side link assignment, which is in table LTCRPINV) for the subscriber carrier module-100S remote (SMS-R) peripheral module (PM).

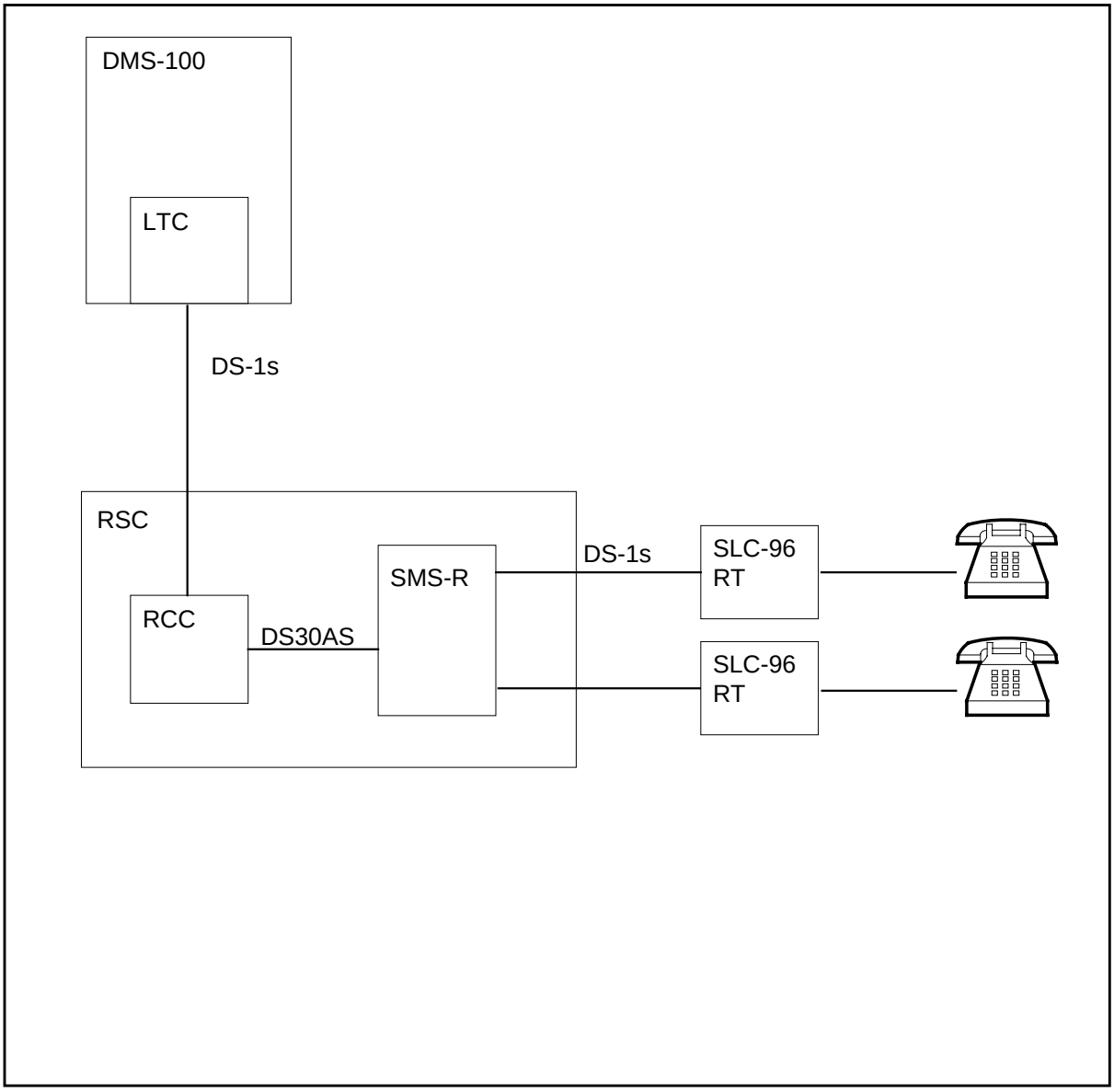
Tables LTCRINV and LTCRPINV maintain the inventory for the SMS-R in a DMS-100 switch. Although the concentration is on the SMS-R, both the names and functionality of these two tables are made general so that future remote PMs can also use them to maintain their inventory.

SMS-R

The SMS-R uses SLC-96, a product of AT&T designed to extend telephone service from a central office (CO) to remote residential or business communities. When the SLC-96 is used at a remote switching center (RSC), the SMS-R provides an interface between the remote cluster controller (RCC) and the SLC-96. The SMS-R is able to interface with multiple SLC-96 remote terminals (RT) as shown in the following figure.

LTCRINV (continued)

SMS-R interface with multiple SLC-96 RT



Tables LTCRINV and LTCRPINV

Table LTCRINV is used to datafill information about the remote node, its host node, and the connectivity of the communication links between the C-side links of the remote extended multiprocessor system (XMS)-based peripheral module (XPM).

Table LTCRPINV is used to datafill information about the connectivity of the communication links between the remote XPM and its P-side nodes.

Tables LTCRINV and LTCRPINV dynamically store data for up to 210 remote XPMs. These two tables are similar to tables RCCINV and RCCPSINV.

Datafill rules

The sequence and rules for datafilling a remote XPM are as follows:

- The host node must be equipped, that is, it must exist in its inventory tables.
- The host node must have P-side links equipped in its inventory. With these links, the following conditions must be met to satisfy the C-side connectivity requirements of the remote XPM datafilled in table LTCRINV:
  - — Enough P-side links must be equipped and available for use to satisfy the minimum C-side link requirement of the remote XPM.
  - — The P-side links that satisfy the above requirement must also be of the link type required by the remote XPM.
- The remote XPM must be datafilled in table LTCRINV.
- The remote XPM must be positioned in table LTCRPINV and equipped with P-side links using the table editor command CHANGE. Note that the table editor command ADD is not used for this table.

Rules specific to SMS-R in table LTCRINV are as follows:

- The product engineering code (PEC) for the SMS-R is NT6X02PA.
- The host node (field CSPM) of the SMS-R must be an equipped RCC.
- A minimum of two to a maximum of four C-side links (field CSLNKTAB) must be entered. These links must be DS30A links.
- If the minimum of two C-side links is entered, they must be for C-side ports 0 and 2, the message ports. If C-side port 1 is not configured, NILPORT must be entered. C-side port 0 is the message port for unit 0, while C-side port 2 is the message port for unit 1.

A rule specific to SMS-R in table LTCRPINV is that equipped P-side links must be type DS-1.

Inventory operations

Table LTCRINV supports the table editor commands ADD, CHANGE, LIST, POSITION, DELETE, and others. Table LTCRPINV does not support the ADD and DELETE commands.

When a PM is added to table LTCRINV, it also becomes defined in table LTCRPINV with the same entry number. All the links in the entry are of NILTYPE, meaning the PM has no P-side links equipped. Because the table

LTCRINV (continued)

control system does not allow adding an already defined item, a CHANGE command is used to equip (datafill) the PM with P-side links in table LTCRPINV. The DELETE command on an entry in table LTCRINV also deletes the corresponding entry from table LTCRPINV provided all the links in field PSLINKTAB are set to NILTYPE.

Restrictions and limitations

Table LTCRINV has the following restrictions and limitations:

- The maximum number of SMS-Rs that can be datafilled on a DMS switch depends on the number of XPMs datafilled in table LTCRINV as well as the number datafilled in table LTCINV (the sum of the totals in both tables cannot exceed 210). The maximum number of SMS-Rs that can be datafilled on a DMS switch also depends on the RCC and link resources that the switch has available to support SMS-Rs.
- The total number of SMS-Rs that are assigned to a single RCC cannot exceed nine. This is assuming that the minimum number of C-side links are used on each SMS-R, and that two RCC P-side links are dedicated to the remote maintenance module (RMM) interface.
- The total number of RCSs that are assigned to a single SMS-R cannot exceed six.

Functional description

Table LTCRINV contains information on XPMs, their C-side links, and their connectivity to the host PM.

Table LTCRINV provides the following data assignments for each bay associated with a PM:

- PM type and number
- frame type and number on which the PM is physically mounted
- floor, row on the floor, and bay position on the row of each PM
- PEC of the PM
- the issue name of the PM software
- the C-side PM type and number
- the network links on which the PM is assigned corresponding C-side links
- the two types of NT6X45 (LTC/DTC/LGC processor) cards in each peripheral unit

DS30 interface

This cost-reduced version of the DS-30 network interface card, NT6X40BA (DS30 C-side interface), is used with an SMS and provides four network ports. Master processor and signaling processor card, NT6X45CA, is used with the NT6X40BA card.

The NT6X45CA processors cannot be used on PMs other than SMS. With the NT6X40BA card, only four network links can be datafilled for an SMS. Attempting to datafill more than four links results in a message that only four C-side links are permitted on an SMS.

Datafill sequence and implications

The following tables must be datafilled before table LTCRINV:

- RCCINV
- RCCPSINV

The PM that is the host node for this remote XPM must be datafilled in its inventory table or tables (for example, RCC2 [remote cluster controller 2] must be datafilled in tables RCCINV and RCCPSINV [with links datafilled] prior to the SMS-R being datafilled in table LTCRINV).

The SITE is datafilled as part of field LTCRNAME. This is the part of the key that is used to uniquely identify the PM. Until SITE is fully supported, the PM number must be unique for each office. For example, the following information does not uniquely identify two SMS-Rs in an office because the SITE is not fully supported and the PM number is not unique:

SITE1 SMSR 5

SITE2 SMSR 5

The following information does uniquely identify two SMS-Rs:

SITE1 SMSR 5

SITE2 SMSR 4

Once the SITE is fully supported, the first example will be valid.

Note: Changes to fields with multiple entries should be made in the PROMPT mode only.

LTCRINV (continued)

Table size

0 to 210 tuples

Memory is allocated as required to allow a maximum sum of 210 tuples in tables LTCINV and LTCRINV combined.

Datafill

The following table lists datafill for table LTCRINV.

Field descriptions (Sheet 1 of 7)

Field	Subfield or refinement	Entry	Explanation and action
LTCRNAME		see subfields	Line trunk controller remote name. This field consists of subfields SITENM, PMTYPE, and XPMNO.
	SITENM	alphanumeric (1 to 16 characters)	Site name. Enter the site name assigned to the remote location. The first character must be alphabetic. This entry must also appear in table SITE.
	PMTYPE	RCC2 , SMSR, SRCC	Peripheral module type . Enter the type of peripheral module (PM) as follows: • SMSR (subscriber carrier module-100S remote) • SRCC (SONET remote cluster controller) • RCC2 (remote cluster controller 2)
Note: When datafilling field CSLNKTAB, ensure message links are not assigned to the same physical interface card. When the interface card supports two or more links, separate the message links by the number of links on the interface cards. This applies to all interface link types; DS-1, DS30, DS30A, or PCM-30. Table control will issue a warning if an attempt is made to assign message links on the same interface card. Assigning message links to the same interface card can cause an E1 outage (failure of all message links) if the card fails.			

Field descriptions (Sheet 2 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	XPMNO	0 to 255	Peripheral module number. Enter the PM number. ***Note:*** Operating company personnel can number the XPMs from 0 to 255 but the total number of tuples in tables LTCINV and LTCRINV combined cannot exceed 210 XPMs. The XPM types can be any combination of types accepted by the two tables.
FRTYPE		DTE, IDTE, LGE, LTE, MCTM, SME	Frame type. Enter the frame type on which the PM equipment is mounted. • DTE (digital terminal equipment) • IDTE (international DTE) • LGE (line group equipment) • LTE (line terminating equipment) • MCTM (Meridian cabinet trunk module) (for a cabinetized Meridian SL-100) • SME (subscriber module equipment) Any other entries are invalid.
FRNO		numeric (0 to 511)	Frame number. Enter the frame number of the frame type on which the PM is mounted.
SHPOS		numeric (18, 32, 51, or 65)	Shelf position. Enter the position of the shelves on the frame, in inches, above the floor level. Any entries outside the range indicated for this field are invalid.
FLOOR		numeric (0 to 99)	Floor. Enter the floor on which the PM frame is located.
Note: When datafilling field CSLNKTAB, ensure message links are not assigned to the same physical interface card. When the interface card supports two or more links, separate the message links by the number of links on the interface cards. This applies to all interface link types; DS-1, DS30, DS30A, or PCM-30. Table control will issue a warning if an attempt is made to assign message links on the same interface card. Assigning message links to the same interface card can cause an E1 outage (failure of all message links) if the card fails.			

LTCRINV (continued)

Field descriptions (Sheet 3 of 7)

Field	Subfield or refinement	Entry	Explanation and action
ROW		A to Z, AA to ZZ, except I, II, O, OO	Row. Enter the row on the floor, in which the PM equipment frame is located.
FRPOS		numeric (0 to 99)	Frame position. Enter the bay position in the row, of the PM equipment frame.
EQPEC		6X02AA, 6X02BA, 6X02BC, 6X02BD, 6X02BE, 6X02BF, 6X02BG, 6X02BK, 6X02AE, 6X02FA, 6X02GA, 6X02HA, 6X02JA, 6X02KA, 6X02KB, 6X02P2, 6X02P3, 6X02PA, 7X3304, MX85AA	Equipment product engineering code. Enter the product engineering code (PEC) of the PM as follows: Enter 6X02AA (line trunk controller common circuit pack fill) card to specify line trunk controllers (LTC), line group controllers (LGC), and digital trunk controllers (DTC). Enter 6X02BA (international digital trunk controller shelf). Enter 6X02BC (international common peripheral controller CP [scopedial UK]). Enter 6X02BD (international common peripheral controller CP Mercury) card to specify SL-100s in the UK market. Enter 6X02BE (international common peripheral controller CP [Spain]). Enter 6X02BF (ILGC common circuit pack [Turkey]) if the dual cards new messaging international LGCs (ILGC) for Turkey is being used.
Note: When datafilling field CSLNKTAB, ensure message links are not assigned to the same physical interface card. When the interface card supports two or more links, separate the message links by the number of links on the interface cards. This applies to all interface link types; DS-1, DS30, DS30A, or PCM-30. Table control will issue a warning if an attempt is made to assign message links on the same interface card. Assigning message links to the same interface card can cause an E1 outage (failure of all message links) if the card fails.			

Field descriptions (Sheet 4 of 7)

Field	Subfield or refinement	Entry	Explanation and action
EQPEC (continued)			Enter 6X02BG (ILGC common circuit pack [Mercury]) to specify the PCM30 LGC (PLGC). Enter 6X02BK (ILGC common circuit pack [Turkey]) for the single card version of 6X02BF. Enter 6X02AE (SMU common cicuit pack), which interfaces a subscriber carrier module-100 urban (SMU) to a DMS-1 remote carrier urban (RCU). Enter 6X02FA (SMSR common circuit pack) for single card message ILGC/CEP.
EQPEC (continued)			Enter 6X02GA (international DTC common circuit pack [CEP]) to provide maintenance support for the international line group controller/Caribbean expansion program (ILGC/CEP). Enter 6X02HA (international LGC common circuit pack [CEP]), which is required for the international digital trunk controller/Caribbean expansion program (IDTC/CEP). Enter 6X02JA (international common peripheral controller circuit pack [Turkey DMS-300]) to provide Turkish tones for R2 signaling in the PCM30 DTC (PDTC). Enter 6X02KA (IDTC common circuit pack [China]).
Note: When datafilling field CSLNKTAB, ensure message links are not assigned to the same physical interface card. When the interface card supports two or more links, separate the message links by the number of links on the interface cards. This applies to all interface link types; DS-1, DS30, DS30A, or PCM-30. Table control will issue a warning if an attempt is made to assign message links on the same interface card. Assigning message links to the same interface card can cause an E1 outage (failure of all message links) if the card fails.			

LTCRINV (continued)

Field descriptions (Sheet 5 of 7)

Field	Subfield or refinement	Entry	Explanation and action
EQPEC (continued)			Enter 6X02P2 (2-processor PDTC) for a 2-processor PM equipped with NT6X69LA (CPP message protocol and downloadable tones circuit pack). 6X02P3 (3-processor PDTC) for a 3-processor PM equipped with NT6X69LA. Enter 6X02PA (SMSR common circuit pack fill kit [SCM-100s]). 6X69KA (new messaging [China]) is provided for China. The shelf code is 6X02KA for an international DTC (IDTC) and 6X02KB for an ILGC with the tones card 6X69KA. Enter 7X3304 (peripheral controller array shelf assembly) to specify the MCTM. Enter MX85AA for the RCC2.
LOAD		alphanumeric (vector of up to eight characters)	Load. Enter the name given to the issue of PM software. ***Note:*** The loadfile name must first be entered in table PMLOADS.
CSPM		see subfields	C-side peripheral module. This field consists of subfields SITETYPE and XPMNO.
	SITETYPE	see subfields	Site type. This field consists of subfields SITE and PMT.
	SITE	alphanumeric (1 to 16 characters)	Site. Enter the site name datafilled in table SITE.
	PMT	SMSR or RCC2	Peripheral module type. Enter the name of the C-side host PM type.

Note: When datafilling field CSLNKTAB, ensure message links are not assigned to the same physical interface card. When the interface card supports two or more links, separate the message links by the number of links on the interface cards. This applies to all interface link types; DS-1, DS30, DS30A, or PCM-30. Table control will issue a warning if an attempt is made to assign message links on the same interface card. Assigning message links to the same interface card can cause an E1 outage (failure of all message links) if the card fails.

Field descriptions (Sheet 6 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	XPMNO	numeric (0 to 255)	External peripheral module number. Enter the number of the node within the PM type. ***Note:*** Operating company personnel can number the XPMs from 0 to 255 but the total number of tuples in tables LTCINV and LTCRINV combined cannot exceed 210 XPMs. The XPM types can be any combination of types accepted by the two tables.
CSLNKTAB		numeric	C-side link table. Enter the C-side port number of the PM. This field is a vector that can have up to 16 CSPM port entries.
OPTCARD		NT7X05AA MSG6X69	Optional card. This field is a vector that can have up to two entries. NT7X05AA is an XPM peripheral and remote loader (PRL) card. If NT7X05AA is entered in field OPTCARD, datafill subfield SLOT_NUMBER.

Note: When datafilling field CSLNKTAB, ensure message links are not assigned to the same physical interface card. When the interface card supports two or more links, separate the message links by the number of links on the interface cards. This applies to all interface link types; DS-1, DS30, DS30A, or PCM-30. Table control will issue a warning if an attempt is made to assign message links on the same interface card. Assigning message links to the same interface card can cause an E1 outage (failure of all message links) if the card fails.

LTCRINV (continued)

Field descriptions (Sheet 7 of 7)

Field	Subfield or refinement	Entry	Explanation and action
	SLOT_NUMBER	numeric (3 to 19)	Slot number. The recommended optional slot number is 17. Slot numbers 15 and16 are viable alternatives depending on their availability. The default value is 17.
PECS6X45		alphanumeric (up to six characters)	6X45 equipment PECs. Each extended multiprocessor system (XMS)-based PM (XPM) unit contains one or more NT6X45 processor cards. Enter the two PECs of the 6X45 card. One PEC is required for each unit of the XPM. Enter the PEC for unit 0 first. The PEC corresponding to the 6X45 with the minimum firmware capabilities must be entered for each unit. The string type is initially set to contain the following values: 6X45AA, 6X45AB, 6X45AC, 6X45CA, 6X45AD, 6X45AE, 6X45AF, 6X45BA, and 6X45BB. For example, if the master processor (MP) has a 6X45CA (SMS processor circuit pack) card, the signaling procesor (SP) has a 6X45AD (LGC/DTC processor circuit pack) card, and the file procesor (FP) has a 6X45AE (LGC/DTC processor) card, the PEC that must be entered in field PECS6X45 is 6X45CA.
Note: When datafilling field CSLNKTAB, ensure message links are not assigned to the same physical interface card. When the interface card supports two or more links, separate the message links by the number of links on the interface cards. This applies to all interface link types; DS-1, DS30, DS30A, or PCM-30. Table control will issue a warning if an attempt is made to assign message links on the same interface card. Assigning message links to the same interface card can cause an E1 outage (failure of all message links) if the card fails.			

Datafill example

The following example shows sample datafill for table LTCRINV.

MAP display example for table LTCRINV

```
LTCRNAME    FRTYPE FRNO SHPOS FLOOR ROW FRPOS  EQPEC    LOAD
            CSPM
                                                          CSLNKTAB
                                                           OPTCARD
 PECS6X45    E2LOAD
_____________________________________________________________________
JRCC        SMSR   0    SME    0    51     1   0   26 6X02PA  MX77NG02
JRCC        RCC    1
                              (     10) (     11) (     18) (     19)$
                                        (   MSG6X69 )  (NT7X05AA 17)$
MX77AA MX77AA   NILLOAD
```

Table history

NA009

Changed the number of tuples in table LTCRINV to 210. Added note for subfield XPMNO. Table LTCRINV has been updated for the NA011 release of this document. This update was made in response to a Problem Resolution System (PRS) request for the NA009 time frame.

NA008

Removed restriction on the use of the NT7X05 PRL card with only the NTMX77 processor card.

NA007

Added a warning note to table LTCRINV on datafilling field CSLNKTAB. A message is displayed by table control if an attempt is made to datafill multiple message links that are assigned to the same interface card.

NA004

The following changes were made to table LTCRINV:

- added value NT7X05AA with subfield SLOT_NUMBER to field OPTCARD
- updated MAP display example for table LTCRINV

BCS36

Field PMTYPE was corrected.

Supplementary information

The following errors and warnings can occur in table LTCRINV when datafill protocol is violated.

LTCRINV (end)

```
Both c–side message links assigned to the same XPM
interface card.  If this card becomes disabled it
WILL cause an *** OUTAGE ***.  One message link
should be one of: {0 1 4 5 8 9 12 13 16 17} and the
other message link one of: {2 3 6 7 10 11 14 15 18
19}.
```

LTCRPINV

Table name

Line Trunk Controller Remote P-Side Link Inventory Table

Functional description

Table LTCRPINV is the companion to table LTCRINV. Each entry in table LTCRPINV corresponds to an entry in table LTCRINV.

Table LTCRPINV provides the following data assignments for a peripheral module (PM):

- a three-part key composed of site name (also datafilled in table SITE), PM type, and PM number
- port assignments for equipped P-side links that are limited to DS-1

For related information, refer to table LTCRINV.

Datafill sequence and implications

Table LTCRINV must be datafilled before table LTCRPINV.

Note: The PM must first be datafilled in table LTCRINV. When that is done, an entry for that PM is automatically entered in this table.

Table size

0 to 256 tuples

Individual tuples are added dynamically to table LTCRPINV when tuples are entered in table LTCRINV. P-side link values are set to NILTYPE by default.

LTCRPINV (continued)

Datafill

The following table lists datafill for table LTCRPINV.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LTCRNAME		see subfields	*Line trunk controller remote name* This field consists of subfields SITENM, PMTYPE, and XPMNO.
	SITENM	HOST, REM1, REM2, REM3, or REM4	*Site name* Enter the site name assigned to the remote location. This entry must also appear in table SITE.
	PMTYPE	RCC2SRCCorSMSR	*Peripheral module type* Enter the PM type as follows: • Enter RCC2 to specify remote cluster controller 2. • Enter SRCC to specify SONET remote cluster controller. • Enter SMSR to specify subscriber carrier module-100S remote.
	XMPNO	0 to 255	*Peripheral module number* Enter the number of the node within the PM type.
PSLNKTAB		see subfields	*P-side link table* This field is made up of subfields PSLINK and PSDATA for each of the 20 P-side links that can be configured on an SMSR.
	PSLINK	0 to 19	*P-side link* Enter the P-side port number of the PM. Indicated values outside this range are invalid.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	PSDATA	DS1 or NILTYPE	*P-side data* For each P-side link number, enter the link type. For DS-1, additional information is placed in subfields CARRIDX and ACTION. Indicated values outside this range are invalid.
	CARRIDX	alphanumeric (vector of up to 16 characters)	*Carrier index* Enter the name used to index into table CARRMTC, field TMPLTNM, for carrier maintenance information. The name must be datafilled in field TMPLTNM of table CARRMTC. Enter DEFAULT for the default template in table CARRMTC. Otherwise, enter NILTYPE.
	ACTION	Y or N	*Action* Enter Y (yes) if the carrier is removed from service when the out-of-service frame, slip, errored second, or severe-errored- second threshold is exceeded. Otherwise, enter N (no).

Datafill example

The following example shows sample datafill for table LTCRPINV.

LTCRPINV (continued)

MAP display example for table LTCRPINV

```
LTCRNAME              PSLNKTAB
SITENM PMTYPE XPMNO   PSLINK PSDATA   CARRIDX ACTION
_____________________________________________________
LTCR1  SMSR   1         0    NILTYPE
                        1    NILTYPE
                        2    DS1      DEFAULT  N
                        3    DS1      DEFAULT  N
                        4    DS1      DEFAULT  Y
                        5    DS1      DEFAULT  N
                        6    DS1      DEFAULT  N
                        7    DS1      DEFAULT  Y
                        8    DS1      DEFAULT  N
                        9    DS1      DEFAULT  Y
                       10    DS1      DEFAULT  N
                       11    NILTYPE
                       12    NILTYPE
                       13    NILTYPE
                       14    NILTYPE
                       15    NILTYPE
                       16    NILTYPE
                       17    NILTYPE
                       18    NILTYPE
                       19    NILTYPE
```

Supplementary information

This section provides information on datafilling table LTCRPINV for specific applications.

Datafill responses

The following message accompanies the datafill responses discussed below for this table:

```
PROCESSING ERROR
UNEXPECTED ERROR CONDITION
```

The following are the possible responses that can be seen while in this table. The values shown have no significance other than to show format.

```
'Nonexistent CARRMTC index.'
```

Reason: The CARRMTC value specified for at least one of the P-side links is invalid.

Action: Check table CARRMTC for the valid CARRMTC values available. Use one of these values for the P-side link. If none of these values are wanted, add the desired value to table CARRMTC, then use that value.

```
'Pslink must be MANBSY or OFFL for link type change, link no
= 13'
```

Reason: An attempt was made to change the link type of one or more of the P-side links when the links was not in a proper state to be changed.

Action: Post the PM at the CARRIER level of the MAP and put the link in either the MANBSY or the OFFL state, then make the link type change.

```
'Port 11 specified more than once.'
```

Reason: Duplication of ports was specified in field PSLNKTAB.

Action: Correct this duplication and try the table operation again.

```
'PM unequipped in Table LTCRINV.'
```

Reason: An attempt was made to add in this table, which is not allowed.

Action: Add entry in table LTCRINV first, then attempt the table operation again.

```
'Must change all pslinks to NILTYPE and then delete the
corresponding XPM in Table LTCRINV.'
```

Reason: An attempt was made to delete in this table, which is not allowed.

Action: Message explains action.

```
'CARRMTC tuple for DS1 contains NT6X55'
```

Reason: The carrier index specified for one or more of the DS-1 links datafilled in this table is itself datafilled in table CARRMTC with interface card NT6X55. This card is for DS-0 links, not for DS-1 links. The correct interface card is NT6X85.

Action: Either use a different carrier index or change the current one in table CARRMTC.

```
'Link type not supported by this PM'
```

LTCRPINV (end)

Reason: A link type specified for one or more of the P-side links datafilled is not one of the types supported by this PM.

Action: Use a link type that is valid for the PM.

```
'Pside node or facilities attached'
```

Reason: One or more of the P-side ports specified that will be deleted is being used by a P-side node.

Action: Delete the P-side node from this port before deleting it.

```
'Add carriers failed'
```

Reason: A problem occurred when creating carrier records for the DS-1 links being defined.

Action: Retry the table operation. If the problem continues, contact Northern Telecom maintenance support personnel. See logs.

```
'Update carriers failed'
```

Reason: A problem occurred when updating carrier records for the DS-1 links being changed.

Action: Retry the table operation. If the problem continues, contact NT maintenance support personnel. See logs.

Other comments

The ADD and DELETE operations cannot be done in this table because of the automatic addition or deletion of tuples in this table. The CHANGE operation is used to input the desired data in the tuples of this table.

LTDATA

Table name

Logical Terminal Data

Functional description

Table LTDATA stores service-related data associated with the logical terminal identifier (LTID). This is equivalent to field LTDKEY, which is the key to this table. In addition to field LTDKEY, the other primary field of the table is LTDRSLT.

Subscription parameters related to ISDN primary rate access (PRI) services such as calling number delivery, are supported in this table.

Field LTDKEY

Field LTDKEY consists of two parts: the logical terminal index (subfield LTINDEX) and logical terminal datatype (subfield DATATYPE).

Subfield LTINDEX itself consists of subfields logical terminal group (subfield LTGRP) and logical terminal number (subfield LTNUM).

Subfield DATATYPE contains logical terminal datatypes. These correspond to the datatypes in field LTDRSLT

Field LTDRSLT

Field LTDRSLT contains the single subfield DATATYPE, and options associated with the specified datatypes.

Datafill sequence and implications

The following tables must be datafilled before table LTDATA:

- LTGRP
- LTDEF

Table size

0 to 65 408 tuples

LTDATA (continued)

Datafill

The following table lists datafill for table LTDATA.

Field descriptions

Field	Subfield	Entry	Explanation and action
LTDKEY		see subfields	The Logical Terminal Datakey field consists of subfields LTINDEX and DATATYPE.
	LTINDEX		Subfield LTINDEX itself consists of subfields LTGRP and LTNUM.
	LTGRP	alphanumeric (maximum 8 characters)	Enter the logical terminal group (LTG) name.
	LTNUM	1 to 1022	Enter the logical terminal number within the group. The quantity of group numbers is restricted. A maximum of 31 entries is allowed.
	DATATYPE	CLI, DN, SERV, or RN	Enter the logical terminal data type as follows: • Enter CLI to identify a calling line identifier (CLI) subscription parameter. • Enter DN for directory number. • Enter SERV for service-related data associated with a logical terminal identifier (LTID) or PRI interface. • Enter RN for redirected number ***Note 1:*** The entry in this field must agree with that for the DATATYPE subfield of LTDRSLT. ***Note 2:*** Data types CLI and RN are not available with all protocol variants. For details refer to Supplementary Information.

LTDATA (continued)

Field descriptions

Field	Subfield	Entry	Explanation and action
LTDRSLT		see subfield	The Logical Terminal Result field consists of the single subfield DATATYPE.
	DATATYPE	CLI, DN, SERV, or RN	Enter the logical terminal data type as follows: • Enter CLI to identify a calling line identifier (CLI) subscription parameter. Enter datafill for subfield OPTION. • Enter DN for directory number. Enter datafill for subfields DFLTCGN and OPTIONS. • Enter SERV for service-related data associated with a logical terminal identifier (LTID) or PRI interface. Enter datafill for subfields AUDTRMT, CGNREQD, CGNDELV, CDNDELV, and OPTION. • Enter RN for redirected number. Enter datafill for subfield OPTION ***Note 1:*** The entry in this field must agree with that for the DATATYPE subfield of LTDKEY. ***Note 2:*** Data types CLI and RN are not available with all protocol variants. For details refer to Supplementary Information.

LTDATA (continued)

DATATYPE = CLI

If the entry in field DATATYPE is CLI, enter datafill for subfield LTCLI_OPTIONS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	LTCLI_ OPTIONS	BILL_FROM_CP N, POP, EDITCLI, SIGCLI, CLIVD, EDITALLTON, SCRNLTID, SCRNLTID_IC_T ON, DDI, NOSCRN, SCRN_CNN_PN, CNN_NOSCRN, DFLTPI, DFLT_CNN_PN, BI_UNAVAIL, SCRNPN, DEFLTPN, SCRNDFLT, 2CLI	Enter BILL_FROM_CPN to activate ETSI or INS1500 primary rate interface (PRI) billing. This activity bills PRI calls to the station making the call. If you do not activate ETSI PRI billing, the DMS-100 switch bills a single number for the whole PRI. ***Note 1:*** This option is valid only in European (CEU), APC, and Japan markets. Enter POP for the point of presence option. This option is part of the CLI selector and is datafilled for all PRI trunks incoming to the DMS switch from a multimedia carrier switch (MMCS). ***Note 2:*** The POP option is valid only in European (CEU) and APC markets. Enter EDITCLI to provide a means for completing a partial CLI. Also enter datafill for subfields OVLYCLI, NPI, TON, and OVLYCNT. ***Note:*** .Refer to section DATATYPE = CLI, OPTION = EDITCLI for detailed entries. Enter SIGCLI to specify a CLI that replaces a received, edited, or default CLI. Enter a range of 1 to 15 digits. Enter CLIVD to specify a numerical index that matches attribute CLIVD in table DNSCRN. The valid range is from 0 to 2047. ***Note:*** The CLIVD option cannot function at the same time as the SCRNLTID option.
			Enter EDITALLTON to modify option EDITCLI. EDITALLTON can be datafilled when EDITCLI is specified as an option.

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter SCRNLTID to allow calling number screening with the direct dial in (DDI) feature. Also enter datafill for subfields NDC, DN, and DNBLKS. ***Note 1:*** The SCRNLTID option cannot function at the same time as the EDITCLI option. ***Note 2:*** The SCRNLTID option cannot function at the same time as the CLIVD option. ***Note 3:*** For the SCRNLTID option to operate, parameter NATIONAL_COUNTRY_CODE in table OFCENG must have the correct entry. ***Note 4:*** .Refer to section DATATYPE = CLI, OPTION = SCRNLTID for detailed entries. Enter SCRNLTID_IC_TON to allow the Calling Number (CGN) digits of incoming calls to be screened as a national call. The option requires that the SCRNLTID option is also datafilled. It is for the Dutch market where some PBXs send a national number which could fail if the SCRNLTID option is datafilled. ***Note 1:*** Datafilling the SCRNLTID_IC_TON option without SCRNLTID results in an error message: This option is datafillable only if the SCRNLTID option is datafilled against the LTID. ***Note 2:*** Datafilling the SCRNLTID_IC_TON for any PRI variant other than Dutch PRI results in an error message: This option is supported only for Dutch PRI. ***Note 3:*** Changing the variant for the LTID with SCRNLTID_IC_TON datafilled results in an error message: Delete the SCRNLTID_IC_TON options entry from Table LTDATA for this interface before changing the PRI variant. ***Note 4:*** Datafilling the SCRNLTID_IC_TON option for the Dutch PRI variant results in a warning message: If the incoming CGN from the PBX holds national/international access code prefixed, screening will fail.

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter DDI for the direct dialing in option enabling subscribing users to dial a private ISDN number using the public ISDN network. Enter NOSCRN to prevent the system from screening the CLI. NOSCRN indicates the end of datafill for subfield OPTION. ***Note:*** Option NOSCRN is valid only for ETSI and TS14 trunk groups. Enter SCRN_CNN_PN to indicate that the connected number (CNN) information element (IE) sent by the terminating agent contains a CNN presentation number, not a CNN. Enter CNN_NOSCRN to stop the CNN PN from being displayed or edited. Enter DFLTPI to specify a default presentation indicator. Also enter datafill for subfields PI and MODE. ***Note:*** Refer to section DATATYPE = CLI, OPTION = DFLTPI for detailed entries. Enter DFLT_CNN_PN to specify the default connected presentation number. Enter the DFLT_CNN_PN as a decimal number of no more than 13 digits. Enter BI_UNAVAIL N or Y to indicate to the network the availability of the originator's network number (NN) for display purposes. This option is only available for PRI trunks. If this option is datafilled, it indicates to the network that the NN is not available for display. ***Note:*** This option is valid only in European (CEU) and APC markets. Enter SCRNPN (screen PN) to cause the switch to interpret the incoming CLI as a PN.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter DEFLTPN (default PN) for PRI and QSIG trunks. Enter the DEFLTPN as a decimal number of no more than 13 digits. Enter SCRNDFLT to specify the default calling number and/or the default customer group. You are prompted for a default calling number (DFLTSN) and a default customer group (DFLTCGRP) Refer to section DATATYPE = CLI, OPTION = SCRNDFLT for detailed entries. ***Note:*** SCRNDFLT must be used with SCRNLTID. The SCRNLTID/SCRNDFLT are separate from the DN selector and EDITCLI. To enter the SCRNLTID/SCRNDFLT option, delete tuples that have the DN selector and EDITCLI options under the CLI selector Enter 2CLI to give ETSI PRI the ability to send two CLIs

DATATYPE = CLI, OPTION = EDITCLI

If the entry in subfield OPTION is EDITCLI, enter datafill for subfields OVLYCLI, NPI, TON, and OVLYCNT.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
EDITCLI	OVLYCLI	0 to 9 (maximum 18 digits)	This field converts a partial calling line identification (CLI) to a complete number by associating a partial CLI with an overlying CLI. ***Note:*** Automatic Message Accounting (AMA) only supports calling party numbers of up to 12 digits.
	NPI	E164 or PVT	Enter the numbering plan identifier associated with field OVLYCLI. The default value for this field is E164.

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	TON	INTL, NATL, or UNKNOWN	Enter the type of number associated with field OVLYCLI. The default value for this field is UNKNOWN. ***Note:*** TON must be set to UNKNOWN to enable EDITCLI.
	OVLYCNT	0 to 18	Enter the number of least significant digits from a partial CLI that are overlaid on top of the least significant digits of field OVLYCLI. A value of 0 (zero) indicates that all the digits from the partial CLI are overlaid. ***Note:*** Automatic Message Accounting (AMA) only supports calling party numbers of up to 12 digits.

DATATYPE = CLI, OPTION = SCRNLTID

If the entry in subfield OPTION is SCRNLTID, enter datafill for subfields NDC, DN, and DNBLKS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
SCRNLTID	NDC	0 to 7 digits	This is internally represented as a serving numbering plan area (SNPA).
	DN	0 to 11 digits	This subfield contains either the complete subscriber number or the DDI root, depending on whether DDI is subscribed or not.
	DNBLKS	0 to 9 digits	Each digit in this subfield represents the first digit of the DDI extension and is used under economic usage of DN conditions. ***Note:*** This option is for primary rate interface accesses only.

DATATYPE = CLI, OPTION = DFLTPI

If the entry in subfield OPTION is DFLTPI, enter datafill for subfields PI and MODE.

Note: Option DFLTPI is only valid in international loads.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
DFLTPI	PI	ALLOW or RESTRICT	Enter ALLOW to indicate that the CLI is presented. Enter RESTRICT to indicate that the CLI is not presented. The default value for this field is ALLOW.
	MODE	TEMP or PERM	TEMP indicates that the default presentation indicator (PI) is active for each call. PERM indicates that the default presentation indicator is active for all calls. If the entry in this field is TEMP, the PI is used only if a PI was not received in the incoming SETUP message. If the entry in this field is PERM and the PN_SUPPORTED field in table OFCENG is to set to NN, the PI is used regardless of whether a PI was received in the SETUP message. If PN_SUPPORTED is set to YN, the DEFLTPN (default PN) field must also be assigned a value. The default value for this field is TEMP. ***Note:*** If subfield PI is datafilled with ALLOW, subfield MODE must be datafilled with TEMP.

LTDATA (continued)

DATATYPE = CLI, OPTION = SCRNDFLT

If the entry in subfield OPTION is SCRNDFLT, enter datafill for subfields DFLTSN and DFLTCGRP.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
SCRNDFLT	DFLTSN	0 to 11 digits	This subfield (which performs the same function as subfield DFLTCGN under the DATATYPE=DN option but for the European numbering plan) contains the default CGN that is required under the following circumstances: • the user-provided CGN failed screening • the CGN information element (IE) is not part of the SETUP message • if the NOSCRN option is subscribed and the type of number (TON) in the SETUP message is unknown, the network provides this default number as the valid number
	DFLTCGRP	alphanumeric (1 to 16 characters)	This is the default customer group. This field is not concerned with screening. This field replaces the same field under the DN selector. Use of this field cannot occur with SCRNLTID/SCRNDFLT.

DATATYPE = DN

If the entry in field DATATYPE is DN, enter datafill for subfields DFLTCGN and OPTIONS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	DFLTCGN	see subfields	The default calling party number (CGN) is a ten-digit directory number (DN) to which the call defaults if no CGN is supplied on originations. If CGN screening is enabled, this DN is the only DN that can originate calls on this interface. The default CGN consists of the values entered in subfields SNPA, NXX, and STATION. ***Note 1:*** A log generates when a default CGN is not properly datafilled. ***Note 2:*** This field performs the same function as field DFLTSN under the SCRNLTID option but for the North American DN style.
	SNPA	numeric (maximum 3 digits)	Enter the area code.
	NXX	0 to 9, N, B, C, D, E, or F	Enter the first three characters of the DN.
	STATION	0 to 9, N, B, C, D, E, or F	Enter the last four characters of the DN.
	OPTIONS	see subfield	This field consists of the single subfield OPTION, and options CUSTGRP and E911DN.
		CUSTGRP	Enter CUSTGRP and customer group name(s) (of 16 alphanumeric characters) to specify the customer group(s) to which the DN belongs.

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
		E911DN	Enter E911DN and set a value of calling number (CGN) to indicate to the switch to send incoming CGN digits for 911 calls only. The CGN option passes the user-provided CPN to the PSAP. The actual CPN location is retrieved from the PSAP database, and its DN is screened. If the DN passes screening, it is delivered to the PSAP, instead of the default DN. Set the value to default to indicate to the switch to send the default DN as the CGN.

DATATYPE = SERV

If the entry in field DATATYPE is SERV, enter datafill for subfields AUDTRMT, CGNREQD, CGNDELV, CDNDELV, and OPTION.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
SERV	AUDTRMT	Y or N	This field determines whether in-band tones and announcements are provided instead of disconnect with cause when treatments are applied to calls from this LTID. AUDTRMT applies to the following treatments: VACT, UNDN, BLDN, PODN, CONF, MHLD, ATBS, TESS, TRBL, DNTR Enter Y (yes) to enable in-band treatment procedures for originating PRI calls with bearer capability (BC) of speech or 3.1-kHz audio. ***Note:*** To make two bearer capabilities compatible with TBCT, datafill bearer capabilities in table BCCOMPAT before you datafill table LTDATA. Enter N (no) to disable in-band treatment procedures and handle call clearing as it was originally handled.
	CGNREQD	Y or N	Enter Y to indicate that the CGN must be provided by the calling user equipment. Otherwise, enter N. ***Note:*** Set the LTID of a PRI public safety answering point (PSAP) to CGNREQD = Y to ensure the delivery of the CGN.
	CGNDELV	ALWAYS, NEVER, or SCREENED	This field indicates when the CGN is delivered to the called interface. ALWAYS indicates that the actual CGN with the PI is sent. NEVER indicates that the CGN with the PI is not sent. SCREENED indicates that if the PI is private, the CGN is not sent (it is replaced by asterisks).

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			The default value for this field is SCREENED. ***Note:*** Set the LTID of a PRI PSAP to CGNDELV = ALWAYS to ensure the delivery of the CGN.
	CDNDELV	ALWAYS or NEVER	This field determines whether the called party number is delivered to the called interface. ALWAYS indicates that the called party number is always delivered to the called interface. NEVER indicates that the called party number is never delivered to the called interface.
	OPTION	AIN_IPI_STR, BI_UNAVAIL, BNS, CCBS, CCNR, CGNCALC, CHG, CLIPREFX, COLP, COLR, CUG, DAS, DDI, DFLTCNN, ECMA226_CHNL_MAP, ECT, ETSIDIV, INSNAC, LSPAO, LSPSO, MCID, MWIC, NET_CALLFAIL_ON, NET_DIALTONE_ON, NET_NORMDISC_ON, NET_RINGBACK_ON, NO_BCH_SERV, PCOS, PRI_CD, PRI_CFU, PRIPSAP, PRI_CLB_NOTIF, REDIR_INFO_IN_RGN, RESTRICT_REDIR_ INFO,RNDELV, RNID, RST_ACK_MULT_CID, SHPRN, TBCT, TBO, TCAP_CNAM, UUS1, UUS1EXP.	This field contains options for PRI services. One or more options are assigned. In NA007, all intelligent peripheral (IP) connections use the PRI NI-2 protocol variant. The NI-2 variant is used only for IP connections. During the NA007 to NA008 one-night process (ONP), this is used as the criterion to decide whether or not to assign the AIN_IPI_STR option to a tuple. When table LTDATA is dumped and restored during the ONP, the AIN_IPI_STR option is added to the tuples when the corresponding primary rate interface (PRI) B-channel is attached to an IP.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter BI_UNAVAIL N or Y to indicate to the network the availability of the originator's network number (NN) for display purposes. This option is only available for PRI trunks. If this option is datafilled, it indicates to the network that the NN is not available for display. ***Note:*** This option is valid only in European (CEU) and APC markets. Enter BNS (billing number selection) to specify the billing number used for AMA recording. Enter datafill for subfield BNS. The provisioning of the CCBS (Completion of Calls to Busy Subscriber) and CCNR (Completion of Calls on No Reply) supplementary services against the QSIG or PRI access enables the network operator to control the availability of these services for public calls. Enter CCBS to permit the Call Completion to Busy Subscriber service. This service enables a subscriber originating a call to a busy destination to be recalled by the network when the busy destination becomes idle. Enter CCNR to permit the Call Completion on No Reply service. This service allows an unanswered call to be completed after the called subscriber has performed an activity. Enter CGNCALC to allow the PRI trunk to control the presentation indicator and CGN in the outgoing setup message. Enter datafill for subfield CGN_PRES_IND. Enter CHG for the charge number in calling number digits when no calling number is available. If the entry in this field is CHG, no other datafill is required.

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter CLIPREFX to add the calling line identity (CLI) prefix to a line and to allow Expression 1 for Japan primary rate interface (PRI) trunks. ***Note:*** This option is available for Japanese PRI trunks. Enter COLP to enable connected line identification presentation for the specified incoming PRI trunk. Enter COLR to enable connected line identification restriction for the specified outgoing PRI trunk. Enter datafill for subfield MODE. Enter CUG to activate the closed user group feature. Enter DAS for flexible digit analysis and enter datafill for subfield DGNAME. Enter DDI to enable the Direct Dialing In feature, which enables subscribers to dial into a private ISDN using the public ISDN numbering system. Enter datafill for subfield DEFAULT_DN in subfield KVAR. Enter DFLTCNN to provision the default connected number used by Connected Line identification Presentation/Restriction COLP/COLR. Then enter the default connected number. Enter ECMA226_CHNL_MAP to enable channel mapping. If enabled, the signaling channel is mapped to timeslot 16. The user channels 1 to 15 are mapped to timeslots 1 to 15, and channels 16 to 30 are mapped to timeslots 17 to 31. If this option is not entered, channel mapping defaults to the PRI standard.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter ECT to activate network-side explicit call transfer (ECT) on ETSI PRI trunks. ECT is only available for ETSI PRI 1990. ECT enables a user (user A) to convert two calls (either incoming or outgoing) into one new call between user B and user C. Enter ETSIDIV to enable partial re-routing on ETSI PRI trunks. ETSIDIV is only available on NETWORK mode ETSI PRI trunks. Other PRI variants cannot use this option. Enter INSNAC to trigger the modification of the outgoing CLI to a full national number. This option has no sub-parameters and is only allowed on ETSI PRI variants, for example, base ETSI PRI, Belgian PRI, Italian PRI, French PRI-Numeris/VN4, and QSIG protocol versions. It is rejected on all other protocol versions.
			Enter LSPAO to associate an LSPAO for PRI private trunk types that have a Northern Telecom North America (NTNA) or NI protocol variant. Enter LSPSO to associate an LSPSO for PRI private trunk types that have an NTNA or NI protocol variant. Enter MCID to activate the Malicious Call ID (MCID) feature, which informs a receiving subscriber of the calling party's identity. The call information remains available until a response to the DISConnect message (Release or Release Complete) is received. Enter MWIC to provide the DMS-100 switch with the capability of accepting an MWI control request over an ISDN NI-PRI trunk group. Enter NET_CALLFAIL_ON to provision network provided call failure tones on a PRI trunk. Only network mode PRI trunks support the option.

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter NET_DIALTONE_ON to provision network provided dial tones on a PRI trunk. Only network mode PRI trunks support the option. Enter NET_NORMDISC_ON to provision busy tone during normal call release. This option applies to the network side of INS1500 PRI trunks. ***Note:*** When NET_NORMDISC_ON is on, enter Y to enable the network sends Progress Message and plays network normal fast busy tone, enter N to enable the network sends Disconnect message. Enter NET_RINGBACK_ON to provision network provided ringback tones on a PRI or QSIG trunk. Only network mode PRI trunks or QSIG trunks support the option. Enter NO_BCH_SERV to disable the exchange of the Q931 SERVICE and SERVICE ACK messages used by B-channel service messaging. ***Note:*** B-channel messaging is enabled when NO_BCH_SERV is not datafilled. Enter PCOS to enable the PRI trunk to originate priority class of service calls even when NETPROT is activated. Enter datafill for subfield LTDATA_PCOS_OPTION. ***Note:*** The PCOS option allows high-priority users privileged access to the telephone system during catastrophic or emergency situations. Other users are denied access to the network. Do not datafill the PCOS option or use the NETPROT or ESP commands unless your network can accommodate high-priority users.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter PRI_CD (Primary Rate Interface Call Deflection) to allow the served user to respond to an incoming call by requesting that the call be forwarded to another destination. PRI_CD can be datafilled only for VN PRI (FRENCH PRI). Enter PRI_CFU (Primary Rate Interface Call Forward Unconditional) to allow the served user to redirect all incoming calls addressed to the subscriber's ISDN number to another user. PRI_CFU can be datafilled only for VN PRI (FRENCH PRI). Enter PRIPSAP to provision the PRI PSAP. Enter PRI_CLB_NOTIF to add notification of suspend/resume to PRI trunk during regret time of terminator line IBN. This option is valid only in the Israeli market. Enter REDIR_INFO_IN_RGN when redirecting information is required in the Redirecting number Information Element.This option applies when redirection occurs over a different switch and redirection information is received over an Turkish ISUP/ ETSI ISUP V2/FTUP/ANSI ISUP/SPIROU to a terminating ETSI PRI. (If this option is not datafilled then the redirection information is sent in the DivertingLegInfo2 component of the FACILITY IE.)

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter RESTRICT_REDIR_INFO to restrict Redirecting Information being sent in the SETUP message. However, if not datafilled, then the Redirecting Information will be added to the Q931 SETUP message sent to the terminating ETSI PRI for a diverted call. This will be as per the functionality of the MMP16 feature 'ISDN Redirecting number enhancements for ETSI PRI & BRI' (59027615). ***Note:*** This option is only datafillable for ETSI PRI trunks. Enter RNDELV to enable outgoing Redirecting Number Screening and datafill one of the subfields ALWAYS, SCREENED, or NEVER. Enter RNID to activate the PRI Redirecting Number Identification suppression feature. Enter datafill for subfield SUPPRESS. Enter RST_ACK_MULT_CID to enable multiple Channel Identification Information Elements (CIDs) in one RESTART ACK message on receipt of a Global Restart when some B channels are in MB or INB state. Enter SHPRN to provide the DMS-100 switch with the ability to override the delivery of presentation restricted numbers. Enter TBCT to enable two B-channel transfer option for NI-2 PRI trunks. TBCT allows a controller to request the SSP connect two independent callers on the controller's interface. TBCT allows the SSP to release the two links to the controller after connecting the users. If you enter TBCT, also enter datafill for subfields PARM and STATUS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Table control verifies the following datafill for the corresponding LTID tuple in table LTDEF when option TBCT is added to an LTID provisioned in table LTDATA. • The trunk agent datafilled in table LTDEF has field LTCLASS = PRI. • The PRI protocol variant datafilled in table LTDEF has subfield VARIANT = NIPRI. Enter TBO for the terminating billing option for ISDN, PRI, or common language location identifier (CLLI). Enter datafill for subfields CALLCODE and SFPRSNT. Enter TCAP_CNAM to enable PRI calling name delivery, and enter datafill for subfield CNAM_SUSP. Enter UUS1 for User-to-User Signaling, which allows an ISDN user to send to or receive from another ISDN user a limited amount of information over the signaling channel in association with a call to the other ISDN user. Enter UUS1EXP for User-to-User Signalling Service 1, Explicit. For UUS1 explicit service activation, UUS1(implicit) and UUS1EXP(explicit) options should be entered together. Removing only UUS1EXP option disables the explicit UUS1 functionality.

LTDATA (continued)

DATATYPE = SERV, OPTION = BNS

If the entry in subfield OPTION is BNS, enter datafill for subfield BNS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
BNS	BNS	RN_CPN, SBN, UPNS_RN_CPN, or NIL_BNS_PARM	Enter the type of billing number to use for AMA recording, as follows: • Enter RN_CPN to use a user-provided redirecting number that passed screening. • Enter SBN to use the special billing number from table TRKGRP. • Enter UPNS_RN_CPN to use a user-provided redirecting number that is not screened. The default entry is RN_CPN. ***Note:*** The NIL_BNS_PARM entry applies only to non-NTNA variants. It does not apply to the National ISDN PRI (NI-PRI) variant.
Note: LTMAP table control verifies datafill of SBN in table TRKGRP.			

DATATYPE = SERV, OPTION = CGNCALC

If the entry in subfield OPTION is CGNCALC, enter datafill for subfield CGN_PRES_IND.

Note: Option CGNCALC is not available in North American loads.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
CGNCALC	CGN_PRES_IND	ALLOW, RESTRICT, or TRANSPARENT	Enter ALLOW if the outgoing presentation indicator is always set to PRESENT. Enter RESTRICT if the outgoing presentation indicator is always set to RESTRICT. Enter TRANSPARENT to match the outgoing presentation indicator of the last call forwarding party.

DATATYPE = SERV, OPTION = COLR

If the entry in subfield OPTION is COLR, enter datafill for subfield MODE.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
COLR	MODE	PERM, TEMP	Enter PERM for PERMANENT mode. In PERMANENT mode the COLR supplementary service is invoked automatically by the network on all calls. Enter TEMP for TEMPORARY mode. In this mode the COLR supplementary service is invoked on a per-call basis. This means that one of the following scenarios occurs, according to the default value set in the network: • default value RESTRICTED - COLR is automatically invoked for each incoming call unless the default value is overridden by subscriber request at the time of answer • default value NOT RESTRICTED - COLR is invoked only if requested by the subscriber at the time of answer

DATATYPE = SERV, OPTION = DAS

If the entry in subfield OPTION is DAS, enter datafill for subfield DGNAME.

Note: Option DAS is not available in North American loads.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
DAS	DGNAME	alphanumeric (maximum 8 characters) or NIL	The Digit Name field contains the value NIL until an entry is added to field DGNAME in table DGHEAD. Then the entry in field DGNAME in table DGHEAD is added to field DGNAME in table LTDATA.

LTDATA (continued)

DATATYPE = SERV, OPTION = DDI

If the entry in subfield OPTION is DDI, enter datafill for subfield DEFAULT_DN in field KVAR.

Note: Option DDI is not available in North American loads.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
KVAR	DEFAULT_DN	1 to 11 digits	This field contains the default DN.

DATATYPE = SERV, OPTION = DFLTCNN

If the entry in field OPTION is DFLTCNN, enter the default connected number (CNN).

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
DFLTCNN	CNN	1 to 10 digits	Enter the default CNN.

DATATYPE = SERV, OPTION = LSPAO

If the entry in field OPTION is LSPAO, enter datafill for subfields PROVIDER and CONTEXT.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
LSPAO	PROVIDER	alphanumeric (1 to 16 characters)	Enter a provider name to choose an assigned local service provider. The provider name must exist in table LSPINFO before you make entries in LSPAO.
	CONTEXT	U = unbundled N = native R = resold	Enter a context such as ILEC or CLEC. The context identifier indicates the leasing arrangement between LSPAO and the switch owner.

DATATYPE = SERV, OPTION = LSPSO

If the entry in field OPTION is LSPSO, enter PROVIDER data.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
LSPSO	OPTION	LSPSO	Enter the name assigned to the option, LSPSO and enter the subfield PROVIDER.
	PROVIDER	alphanumeric (1 to 16 characters)	Enter a provider name to choose an assigned local service provider. The provider name must exist in table LSPINFO before you make entries in LSPSO.

DATATYPE = SERV, OPTION = MWIC

If the entry in field OPTION is MWIC, enter datafill for subfields MWIMAX, SPLITNNX, and DMSRID.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
MWIC	MWIMAX	8 to 2000	Maximum number of outstanding MWI Control requests that are supported on the NI-PRI. The default value is 200.
	SPLITNNX	Y or N	Used only if the host DMS-100 switch shares the client user's office code with another switch. This parameter indicates whether to consider the MWI control request received by the host DMS-100 switch as a remote MWI control request. Y indicates a remote request. N indicates a local request. The default is N.
	DMSRID	10 (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)	Default MSRID when no MSRID is supplied by the ISDN MSR System. There is no default value.

LTDATA (continued)

DATATYPE = SERV, OPTION = PCOS

CAUTION

Risk of service interruption

The PCOS option gives high-priority users privileged access to the telephone system during catastrophic or emergency situations. Other users are denied access to the network. Do not use the PCOS option or use commands NETPROT or ESP unless high-priority users must have exclusive access to the network.

If the entry in subfield OPTION is PCOS, enter datafill for subfield LTDATA_PCOS_OPTION.

Note: Option PCOS is not available in North American loads.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PCOS	LTDATA_PCOS_OPTION	TRUE (set) or FALSE (not set)	The Priority Class of Service field contains a default value of FALSE. Set the field entry to TRUE to enable priority status under Essential Service Protection (ESP) or Network Protection (NETPROT) conditions.

DATATYPE = SERV, OPTION = PRI_CALL_CONTROL

If the entry in subfield OPTION is PRI_CALL_CONTROL, enter datafill for subfields MAX_IN_CALLS and MAX_OUT_CALLS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PRI_CALL_ CONTROL	MAX_IN_CA LLS	numeric (0 to 30)	Enter the maximum number of incoming calls allowed on the ETSI PRI link. ***Note:*** If the MAX_IN_CALLS datafill is zero, the following warning message is displayed: All incoming PRI calls will be rejected!!!
	MAX_OUT_ CALLS	numeric (0 to 30)	Enter the maximum number of outgoing calls allowed on the ETSI PRI link. ***Note:*** If the MAX_OUT_CALLS datafill is zero, the following warning message is displayed: All outgoing PRI calls will be rejected!!!
Note: The PRI_CALL_CONTROL datafill must be performed during a very low traffic period when the number of calls active on any PRI is a minimum.			
Note: If the sum of the MAX_IN_CALLS and MAX_OUT_CALLS datafills is less than 30, the following warning message is displayed: Sum of the max_in_calls and max_out_calls is less than 30. Link will not be fully utilized!!!			

DATATYPE = SERV, OPTION = PRI_CD

This option enables the served user to respond to an incoming call by requesting that the call be forwarded to another destination.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PRI_CD	CD_TYPE	DFLT or INTL	Enter DFLT or INTL to specify the CD TYPE. DFLT is the normal setting and does not allow calls to be forwarded to international destinations. The INTL option allows calls to be forwarded to international destinations. PRI_CD can be datafilled only for VN PRI (FRENCH PRI).

LTDATA (continued)

DATATYPE = SERV, OPTION = PRI_CFU

This option enables the served user to redirect all incoming calls addressed to the subscriber's ISDN number to another destination.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PRI_CFU	CFU_TYPE	DFLT or INTL	Enter DFLT or INTL to specify the CFU TYPE. DFLT is the normal setting and does not allow calls to be redirected to international destinations. The INTL option allows calls to be redirected to international destinations. PRI_CFU can be datafilled only for VN PRI (FRENCH PRI).

DATATYPE = SERV, OPTION = PRIPSAP

If the entry in subfield OPTION is PRIPSAP, enter datafill for subfields ANONCALL, DIRECT, SNPA, PSAPDN and NATLXLA.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PRIPSAP	ANONCALL	Y or N	Enter Y if the PSAP can receive anonymous calls. Otherwise, enter N. The default is N. ***Note:*** If the ANONCALL field is set to Y, you will be prompted to enter datafill for the DIRECT field.
	DIRECT	Y or N	Enter Y to add the PRIPSAP option. The default is N.
	SNPA	3 digits	Enter the three-digit serving numbering plan area for the PSAP. The default is 0.
	PSAPDN	7 or 10 digits	Enter 7 or 10-digit directory number of the PSAP. The default is 0.
	NATLXLA	Y or N	If the entry is 'Y', call translations to this PSAP are based on 10 digits (with NPA). The PSAPDN field in table E911PSAP is datafilled with 10 digits. If the entry is 'N', call translations are based on 7 digits (without NPA). The PSAPDN field is datafilled with 7 digits.

DATATYPE = SERV, OPTION = RNDELV

If the entry in subfield OPTION is RNDELV, enter datafill for subfield DELIVER.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
RNDELV	DELIVER	ALWAYS, SCREENED, or NEVER	Enter ALWAYS if the RN digits are included in the outgoing SETUP message regardless of the presentation indicator value associated with the RN. Enter SCREENED if the RN digits are included in the outgoing message based on the PI. If the PI is set to presentation restricted, the RN digits will not be included. Enter NEVER if none of the RN information is included in the outgoing message. The RNDELV OPTION default setting is SCREENED.

DATATYPE = SERV, OPTION = RNID

If the entry in subfield OPTION is RNID, enter datafill for subfield SUPPRESS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
RNID	SUPPRESS	Y or N	Enter Y to suppress Redirecting Number Identification. The default is N.

DATATYPE = SERV, OPTION = SHPRN

If the entry in subfield OPTION is SHPRN, enter datafill for subfield SHPRN_PARM.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
SHPRN	SHPRN_PARM	NNNN, YYYY, YNNY, NNNY, YNYY, NNYY	The first letter represents Direct calls-Calling Party Number. The second letter represents Forwarded Calls-Calling Party Number. The third letter represents Forwarded Calls-Original Number on Calls Forwarded Multiple Times. The fourth letter represents Forwarded Calls-Last (or Only) Forwarding Number. The default is NNNN.

LTDATA (continued)

Note: CGNDELV and RNDELV must be set to screened for SHPRN to be provisioned.

DATATYPE = SERV, OPTION = TBCT

If the entry in subfield OPTION is TBCT, enter datafill for subfields PARM and STATUS.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
TBCT	PARM	NTC	Enter NTC to identify subscription to the Notification to Controller feature. The STATUS subfield indicates if the subscription is ON or OFF. NTC is the only value for this subfield.
	STATUS	ON or OFF	Enter ON to turn the TBCT notification to controller feature (AF7322) on. Enter OFF to turn this feature off. The default is ON.

DATATYPE = SERV, OPTION = TBO

If the entry in subfield OPTION is TBO, enter datafill for subfields CALLCODE and SFPRSNT. If the entry in subfield SFPRSNT is Y, enter datafill for subfield SFEATVAL.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
TBO	CALLCODE	800 to 999	Enter a generic call code.
	SFPRSNT	Y or N	Enter Y to indicate that the service feature is present and enter datafill for subfield SFEATVAL. Enter N to indicate that the service feature is not present.
	SFEATVAL	800 to 999	Enter a service feature value.

DATATYPE = SERV, OPTION = TCAP_CNAM

If the entry in subfield OPTION is TCAP_CNAM, enter datafill for subfield CNAM_SUSP.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
TCAP_CNAM	CNAM_SUSP	Y or N	Enter Y to enable subscriber usage-sensitive pricing (SUSP) billing for the PRI LTID. Enter N to disable SUSP billing for the PRI LTID. The default is N. ***Note:*** Before setting subfield CNAM_SUSP to Y for a PRI LTID, the operating company must assign the billing DN in table TRKGRP (subfield BILLDN).

DATATYPE = RN

If the entry in field DATATYPE is RN, enter datafill for subfield OPTION.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
RN	OPTION	EDITRN	Enter EDITRN to provide a means for completing a partial RN and enter datafill for subfields OVLYRN, NPI, TON, and OVLYCNT.

DATATYPE = RN, OPTION = EDITRN

If the entry in subfield OPTION is EDITRN, enter datafill for subfields OVLYRN, NPI, TON, and OVLYCNT.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
EDITRN	OVLYRN	0 to 9 (maximum 18 digits)	The Overlying Redirected Number field converts a partial Redirected Number (RN) to a complete number by associating a partial RN with an overlying RN. ***Note:*** Automatic Message Accounting (AMA) only supports RNs of up to 12 digits.
	NPI	E164	Enter the numbering plan identifier associated with field OVLYRN.

LTDATA (continued)

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	TON	NATL or LOCAL	Enter the type of number associated with field OVLYCLI. ***Note:*** TON must be set to LOCAL to enable EDITCLI.
	OVLYCNT	0 to 18	Enter the number of least significant digits from a partial CLI that are overlaid on top of the least significant digits of field OVLYRN. A value of 0 (zero) indicates that all the digits from the partial RN are overlaid. ***Note:*** Automatic Message Accounting (AMA) only supports RNs of up to 12 digits.

Datafill example

The following figure shows an example of datafill for table LTDATA with datatype CLI and option SCRNLTID_IC_TON.

MAP display example for table LTDATA with datatype CLI and option SCRNLTID_IC_TON

```
LTDKEY
                                LTDRSLT
_____________________________________________________________________

ISDNPRA 1 CLI

                CLI (SCRNLTID 181 811 1234) (SCRNDFLT 8111111 $) (SCRNLTID_IC_TON) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV and CGNDELV, RNDELV, and SHPRN.

MAP display example for table LTDATA with datatype SERV and CGNDELV, RNDELV, and SHPRN

```
LTDKEY    LTDRSLT

_____________________________________________________________________

ISDN      502 SERV SERV Y SCREENED ALWAYS (RNDELV SCREENED) (SHPRN YYYY)
```

The following figure shows an example of datafill for table LTDATA with datatype DN and option CUSTGRP.

MAP display example for table LTDATA with datatype DN and option CUSTGRP

```
     LTDKEY
                                  LTDRSLT
_____________________________________________________________________

ISDN 999   DN
                  DN 613 726 1234 (CUSTGRP      CENTESN)$
PIEDMONT 2 DN
                  DN 416 555 4321 (CUSTGRP      CENTESN)$
```

The following figure shows an example of datafill for table LTDATA with datatype SERV option LSPAO.

MAP display example for table LTDATA with datatype SERV option LSPAO

```
     LTDKEY          LTDRSLT
_____________________________________________________________________

ISDN 600 SERV          SERV N N NEVER NEVER (LSPAO CLEC1 U) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV option LSPSO.

MAP display example for table LTDATA with datatype SERV option LSPSO

```
      LTDKEY          LTDRSLT
_____________________________________________________________________

ISDN 600 SERV          SERV N N NEVER NEVER (LSPSO CLEC1) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV option MCID.

MAP display example for table LTDATA with datatype SERV option MCID

```
     LTDKEY          LTDRSLT
_____________________________________________________________________

ISDN   5 SERV          SERV N N ALWAYS ALWAYS (MCID) $
```

LTDATA (continued)

The following figure shows an example of datafill for table LTDATA with datatype SERV and option PRIPSAP.

MAP display example for table LTDATA with datatype SERV and option PRIPSAP

```
LTDKEY
                                                              LTDRSLT

_____________________________________________________________________

ISDN        1 SERV
SERV N N ALWAYS ALWAYS (PRIPSAP Y Y 613 6211234) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV and option RESTRICT_REDIR_INFO.

MAP display example for table LTDATA with datatype SERV and option RESTRICT_REDIR_INFO

```
    LTDKEY
                                LTDRSLT
_____________________________________________________________________

ISDN 2 SERV

                SERV N N ALWAYS ALWAYS (RESTRICT_REDIR_INFO) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV and option RST_ACK_MULT_CID.

MAP display example for table LTDATA with datatype SERV and option RST_ACK_MULT_CID

```
    LTDKEY
                                LTDRSLT
_____________________________________________________________________

ETSI 24 SERV

                SERV Y Y ALWAYS ALWAYS (RST_ACK_MULT_CID) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV and option TBCT.

MAP display example for table LTDATA with datatype SERV and option TBCT

```
    LTDKEY
                                LTDRSLT
_____________________________________________________________________

ISDN 381 SERV
            SERV Y Y ALWAYS ALWAYS (TBCT) $
ISDN 383 SERV
            SERV Y Y ALWAYS ALWAYS (TBCT) $
ISDN 385 SERV
            SERV Y Y ALWAYS ALWAYS (TBCT (NTC ON) $) $
ISDN 387 SERV
            SERV Y Y ALWAYS ALWAYS (TBCT (NTC OFF) $) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV and option TBO.

MAP display example for table LTDATA with datatype SERV and option TBO

```
    LTDKEY
                                LTDRSLT
_____________________________________________________________________

ISDN 240 SERV
            SERV N N ALWAYS ALWAYS (TBO 805 N RNID Y) $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV and option TCAP_CNAM. Both tuples have subfield CNAM_SUSP for option TCAP_CNAM set to N (SUSP billing disabled).

MAP display example for table LTDATA with datatype SERV and option TCAP_CNAM

```
    LTDKEY
                                LTDRSLT
_____________________________________________________________________

ISDN 381 SERV
            SERV Y Y ALWAYS ALWAYS (TCAP_CNAM N)$
ISDN 383 SERV
            SERV Y Y ALWAYS ALWAYS (TCAP_CNAM N)$
```

LTDATA (continued)

The following figure shows an example of datafill for table LTDATA with datatype SERV and option UUS1EXP.

MAP display example for table LTDATA with datatype SERV and option UUS1EXP

```
    LTDKEY
                                LTDRSLT
_____________________________________________________________________

ISDN 241 SERV

                SERV N N ALWAYS ALWAYS (UUS1) (UUS1EXP) $
```

The following figure shows an example of datafill for table LTDATA with datatype OPTION and option INSNAC.

MAP display example for table LTDATA with datatype OPTION and option INSNAC

```
    LTDKEY
                                LTDRSLT
_____________________________________________________________________

ISDNPRA 244 SERV

                SERV Y Y ALWAYS ALWAYS (INSNAC)$
```

The following figure shows an example of datafill for table LTDATA with datatype DN and option E911DN.

MAP display example for table LTDATA with datatype DN and option E911DN

```
 LTDKEY             LTDRSLT
_____________________________________________________________________

ISDN 108 DN DN 613 722 9999 E911DN DEFAULT $

ISDN 108 DN DN 613 722 9999 E911DN CGN $
```

The following figure shows an example of datafill for table LTDATA with datatype SERV and option CCBS and CCNR.

MAP display example for table LTDATA with datatype option CCBS and CCNR

```
LTDKEY          LTDRSLT
_____________________________________________________

QSIG 5 SERV SERV N N ALWAYS ALWAYS (DAS RUAOVLP) CCBS CCNR$
```

Details of operation and datafill for RGN screening and billing

MMP17 feature “PRI origination, screening and capture of RGN in AMA” (activity A59034151) introduced the following functionality for ETSI PRI on the DMS-100 MMP platform.

- screening and editing of RGN (redirecting/rerouting number):
  - — Redirecting Number IE
  - — Redirecting Number in DivertingLegInfo2 (Facility IE)
  - — Last Rerouting Number in Call Re-routing operation during invocation of Partial Re-route (Facility IE)
- Redirecting Number billing

SN06 (DMS) feature “ISDN Redirecting Number enhancement” (activity A89008946) introduced the same functionality for Call Server 2000 switches.

This section details the datafill required in LTDATA to achieve different RGN screening options.

Screening overview

When the PBX sends the SETUP message to the DMS with a RGN IE (Redirecting Number Information Element), the RGN will be edited and screened.

LTDATA (continued)

The screening of RGN digits is performed only if NPI screening passes.The NPI values that allow the screening to pass are as shown in table “NPI screening”.

NPI screening

NPI	Screening
Unknown	PASS
ISDN/E.164	PASS
Private numbering plan	FAIL
Note: Screening passes for NPI = Private numbering plan if ALLOW_SPECIAL_TON_NPI_SCREENING is set to ‘Y’ in table OFCENG.	

Per-office screening

The CLI Selector is checked to retrieve screening/editing instructions.

If the SCRNLTID/SCRNDFLT option is not provisioned per-office screening is performed (provided the CLI selector is datafilled and screening is not explicitly disabled using the NOSCRN option).The per-office screening is performed based on the datafill in table DNSCRN.

Per-interface screening

The CLI Selector is checked to retrieve screening/editing instructions. If the SCRNLTID/SCRNDFLT option is provisioned, per-interface screening is automatically enabled.

The SCRNLTID/SCRNDFLT provides an additional screening facility which is provisionable for each LTID (using table LTDATA) instead of each office (using table DNSCRN).It provides more efficient and flexible screening because only data stored for LTID is screened.

Special arrangement (NOSCRN without SCRNPN)

If NOSCRN is datafilled and SCRNPN is not datafilled then calls originating from the particular trunk group are not screened. NOSCRN may be applied to both per-interface screening and per-office screening.

TON and NPI screening is still carried out even with NOSCRN active. The following tables show which NPI and TON values will pass/fail screening, dependent on various parameters such as DDI subscription, the market in which the office resides and the NOSCRN option. The TON values for which the screening passes are as shown in table “TON screening with NOSCRN

option" and the NPI values are shown in table "NPI screening". If SCRNPN is present then the RGN screening will be performed and the RGN will be presented based on the screening results.

TON screening with NOSCRN option

TON	Screening
Unknown	FAIL
Subscriber	FAIL
National	PASS
International	PASS
Network specific	FAIL
Note 1: Screening is not dependent on DDI subscription if NOSCRN is present.	
Note 2: If MARKET_OF_OFFICE = GERMANY then the screening passes.	

NPI screening

NPI	Screening
Unknown	PASS
ISDN/E.164	PASS
Private numbering plan	FAIL

Redirecting Number privacy

The purpose of Redirecting Number privacy is to restrict the presentation of Redirecting Number. The presentation of Redirecting Number is decided based on the Incoming PI value and the DFLTPI datafill, as shown in table "Redirecting Number privacy".

Redirecting Number privacy

Incoming PI	DFLTPI option	Outgoing PI
RESTRICT	ALLOW TEMP/RESTRICT TEMP	RESTRICT
ALLOW	ALLOW TEMP/RESTRICT TEMP	ALLOW
Any value	RESTRICT PERM	RESTRICT

LTDATA (continued)

Redirecting Number privacy

Incoming PI	DFLTPI option	Outgoing PI
Not supplied	ALLOW TEMP	ALLOW
Not supplied	RESTRICT TEMP	RESTRICT
Not supplied	Not datafilled	ALLOW
Any value	Not datafilled	ALLOW

PN support for Redirecting Number

The Presentation Number support for Redirecting Number is provided as part of this feature and is the same as PN support for calling number (CGN). The table “PN support for RGN for the terminating ETSI PRI” illustrates the behavior of the outgoing RGN for the terminating ETSI PRI, when PN_SUPPORTED in table OFCENG is ACTIVE.

PN support for RGN for the terminating ETSI PRI

DFLTPN	DEFLTCGN	SCRNPN	NOSCRN	Screening results	Outgoing RGN
N	N	N	Y	Rudimentary screening passes (Note 1)	User RGN
Y	X (Note 2)	N	Y	Rudimentary screening passes	DEFLTPN
N	Y	N	Y	Rudimentary screening passes	User RGN
X	X	Y	Y	Screening passes	Screened RGN
Y	X	X	Y	Rudimentary screening fails	DEFLTPN
N	Y	X	Y	Rudimentary screening fails	DEFLTCGN
X	X	Y	N	Screening passes (Note 3)	Screened RGN
Y	Y	Y	N	Screening fails	DEFLTPN
N	Y	Y	N	Screening fails	DEFLTCGN

Note 1: “Rudimentary screening” means that TON and NPI only are screened.

Note 2: X = “don’t care”

Note 3: TON, NPI and digits are screened

PN support for RGN for the terminating ETSI PRI

DFLTPN	DEFLTCGN	SCRNPN	NOSCRN	Screening results	Outgoing RGN
N	N	X	N	Screening fails	User RGN
Y	Y	N	N	Screening passes	DEFLTPN
N	Y	N	N	Screening passes	Screened RGN

Note 1: "Rudimentary screening" means that TON and NPI only are screened.

Note 2: X = "don't care"

Note 3: TON, NPI and digits are screened

The behavior is the same for the terminating ETSI BRI also, but in this case the PN is presented only if PI is allowed, and the BRI set is subscribed to CLIP. If these conditions are not met, the screened/unscreened RGN is presented.

Activation of the functionality

The Screening of RGN is performed if the CLI selector is datafilled.The options for Per-office screening and Per-LTID Screening are mutually exclusive and cannot be provisioned at the same time. The screening options for Per-Interface screening and Per-office screening are as shown in table "Screening options".

Screening options

Per-interface screening	Per-office screening
SCRNLTID	EDITCLI
SCRNDFLT	DFLTCGN

The SCRNLTID option requires datafill in the following fields.

- The national destination code (NDC) field is a reference to an area code entry in table SNPANAME.
- The directory number (DN) is the subscriber number or the DDI root (subscriber number without extension digits).This field should not contain a National Significant Number (NSN)
- Field DNBLKS is used to specify a list of extension blocks that are valid for a particular access in the case of economic usage of DN.Otherwise, the field is left empty.

LTDATA (continued)

The SCRNDFLT option requires datafill in the following fields.

- DFLTSN contains the default subscriber number that is provided to the network by prefixing the NDC.
- DFLTCGRP contains the default customer group which is not related to CLIP/CLIR or screening. When a default customer group needs to be specified and Per-LTID screening is required, the default customer group needs to be datafilled under SCRNDFLT option (instead of under the DN selector).This is because the SCRNLTID/SCRNDFLT options and the DN selector are mutually exclusive.

The EDITCLI option requires datafill in the following fields.

- OVLYCLI: Overlay calling line identifier.The user provided CLI is overlaid on top of the OVLYCLI.
- NPI: This field specifies the NPI associated with OVLYCLI.The value supported is E164.
- TON: This field specifies the TON associated with OVLYCLI.
- OVLYCNT: The values specify the number of least significant digits from the user provided CLI to be overlaid on top of the least significant digits of OVLYCLI to form a complete CLI. ‘0’ indicates that all digits from user-provided CLI are to be overlaid on top of the OVLYCLI to form a complete CLI.

Billing

The RGN is given higher priority than the CGN (calling number) and, if present, will be used for billing for an ETSI PRI call. This is to prevent fraud and do proper billing for redirecting calls.

Billing Number Determination is done during call processing and since it depends on the outcome of RGN Screening, it is done subsequent to the Screening/Editing.

In case of partial re-route the last rerouting number will be used for billing the second leg of the call after screening.

No special datafill is required for activation of billing based on RGN. Option AMACLID_IC_PRI_CGN (table AMAOPTS) updates module code 46 of an AMA record with unmodified RGN.

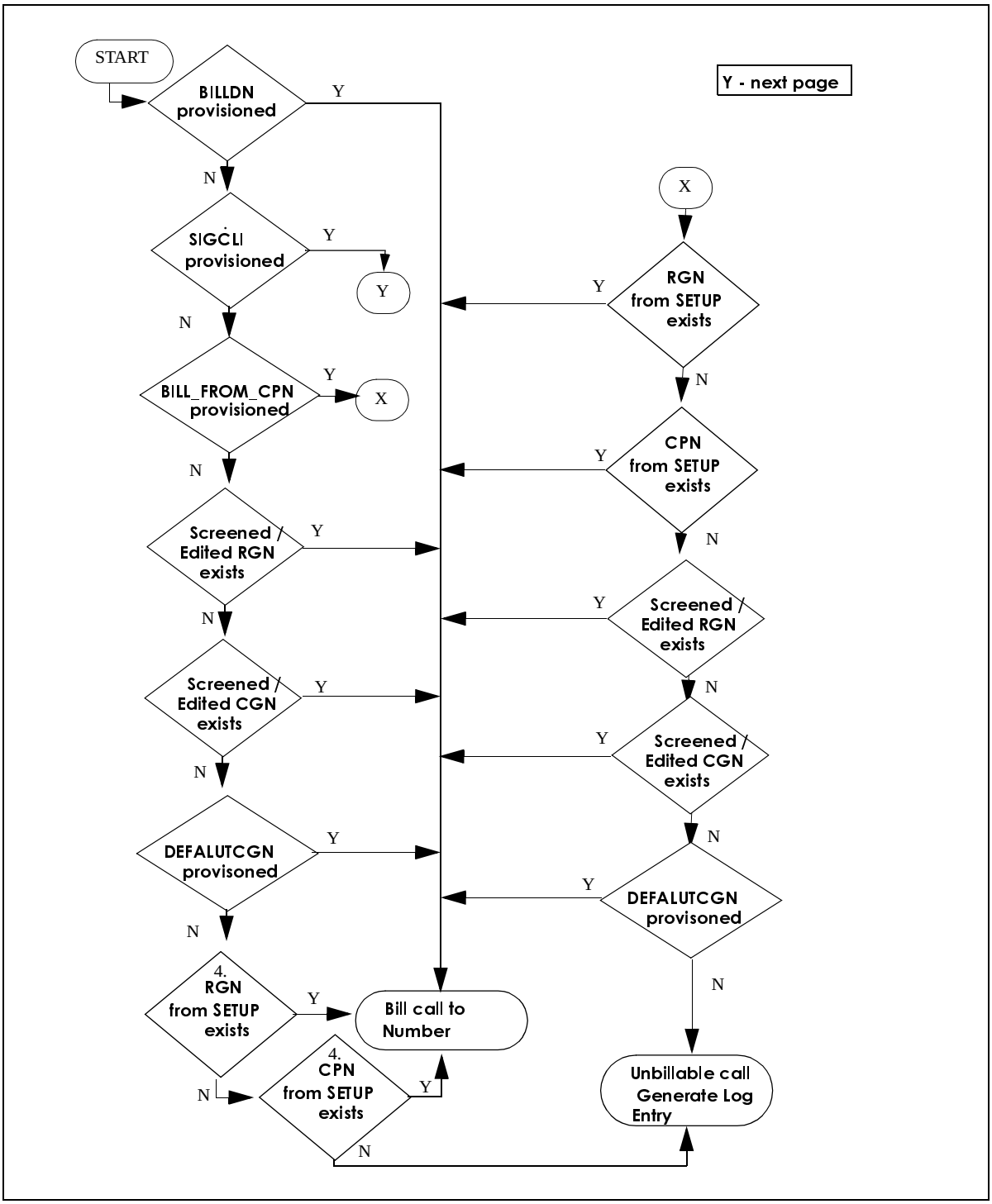
Table “RGN billing datafill” below shows the datafill of the different options in tables LTDATA and AMAOPTS to provide different types of AMA records.

BILLDN	BILL_FROM_CPN	AMACLID_IC_PRI_CGN (in table AMAOPTS)	AMA record content
Y	X	ON	ORIG_OPEN_DIGITS = BILLDN Module Code 46 = Screened RGN
N	Y	OFF	ORIG_OPEN_DIGITS = Unscreened RGN
N	X	OFF	ORIG_OPEN_DIGITS = Screened/edited RGN from SETUP

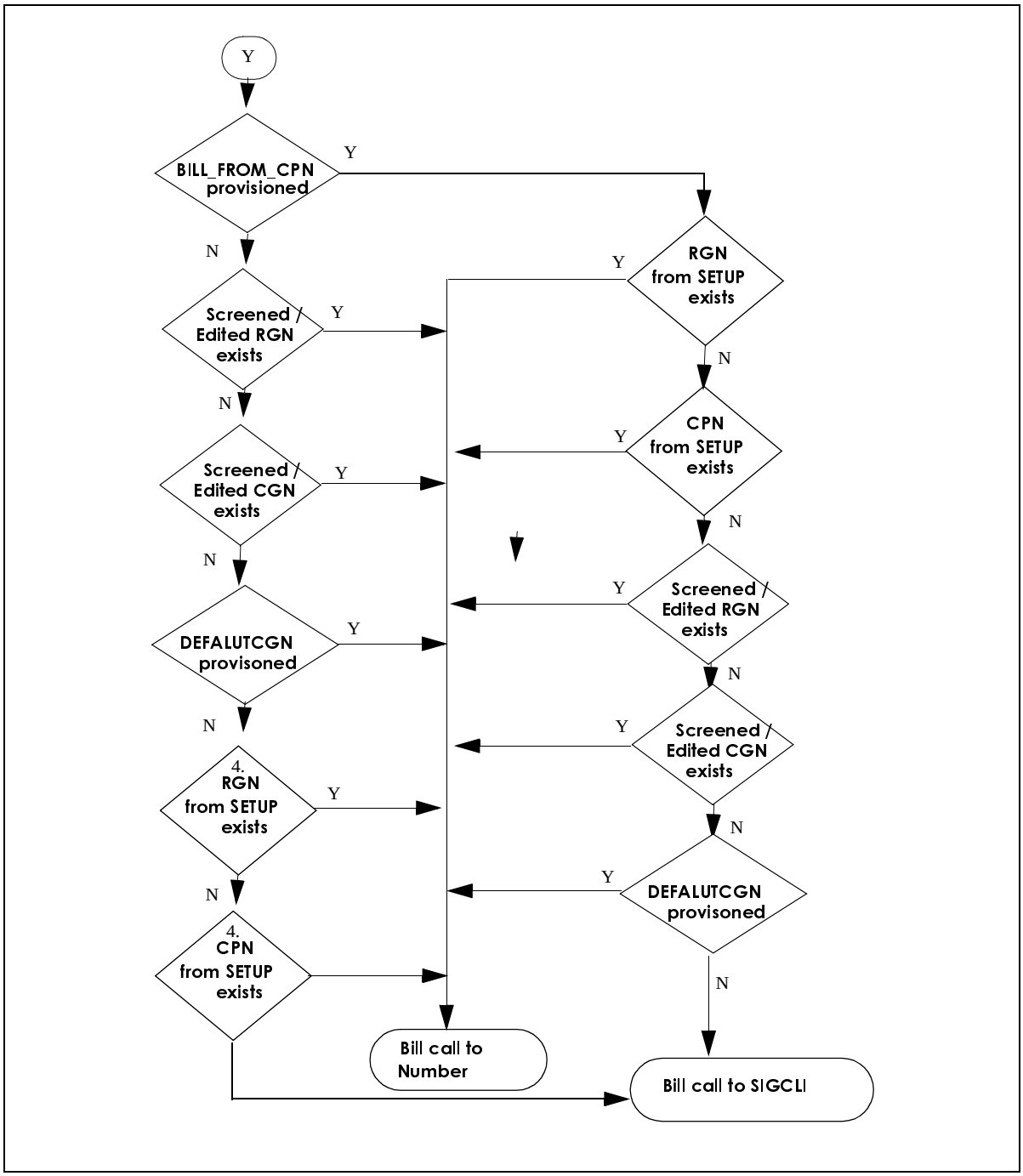
The figures on the following pages show the algorithm for generation of AMA billing record for RGN.

LTDATA (continued)

Algorithm for generation of AMA billing record for RGN



Algorithm for generation of AMA billing record for RGN (continued)



LTDATA (continued)

Table history

SN06 (DMS)

Q00757372

List of applicable treatments added to description of AUDTRMT option

Q00746608

Documented which PRI variants support the CLI and RN options.

A89008946

This feature adds functionality for the screening and billing (capture in AMA) of the Redirecting Number (RGN), to Call Server 2000 switches. This functionality was introduced to MMP switches by MMP17 feature A59034151. A section called “Details of operation and datafill for RGN screening and billing” has been added to this table description.

NA017

59029596

This feature uses existing options in table LTDATA.

SN04 (DMS)

AJ5284

Description of DFLTPI subfield MODE amplified to explain the impact on the entry PERM of the DEFLTPN field and the PN_SUPPORTED field in table OFCENG.

59037870

Adds option RESTRICT_REDIR_INFO under the SERV selector for feature 59037870. Use this option when restricting redirecting information being sent in the SETUP message.

59034092

Adds option PRI_CLB_NOTIF under the SERV selector for feature 59034092. Use this option to add notification of suspend/resume to PRI trunk during regret time of terminator line IBN.

59036446

Adds the SCRNLTID_IC_TON option, under the CLI selector, to enhance the SCRNLTID option for the Dutch PRI (feature 59036446).

MMP16

Adds option REDIR_INFO_IN_RGN under the SERV selector for feature 59027615. Use this option when redirecting information is required in the Redirecting Number Information Element.

Adds new SERV options PRI_CD and PRI_CFU for feature 59027629 to allow the served user to respond to incoming calls by requesting redirection of calls to another user.

MMP15

Adds option PRI_CALL_CONTROL under the SERV selector to allow activation of the ETSI PRI Incoming and Outgoing Call Control Enhancements feature (A59022390).

Explanatory text and note added that BILL_FROM_CPN conditional datafill, as well as supporting ETSI PRI billing, now supports INS1500 PRI billing for the Per Extension Billing feature (A59022582).

Adds existing options CCBS and CCNR to QSIG agents for activity A59023584. Previous to this activity, option CCBS and CCNR were for PRI only.

Adds option RST_ACK_MULT_CID under the SERV selector to enable multiple CIDs in one RESTART ACK message on receipt of a Global Restart when some B channels are in MB or INB state (A59022616).

Adds option UUS1EXP under the SERV selector (A59022169).

MMP14

Use of option NET_RINGBACK_ON is extended to QSIG trunks.

Adds option CCNR under the SERV selector to allow activation of the Call Completion on No Reply feature.

MMP13

Adds subfields SCRN_CNN_PN and CNN_NOSCRN to the CLI option.

Adds option CLIPREFX to field SERV OPTION.

MMP12

Adds 2CLI option which gives ETSI PRI the ability to send two CLI.

Adds option BI_UNAVAIL to indicate to the network if the originator’s Network Number is available for display.

Removed AOC provisioning for PRI and QSIG subscribers from table LTDATA. The AOC option is now available in table TRKOPTS.

LTDATA (continued)

NA016

Enhances option E911DN to include E911 screening on NTNA PRI calls for feature A59029596.

NA012

Adds option E911DN to field LTDKEY, subfield DATATYPE=DN.

Adds field NATLXLA to option PRIPSAP to support seven- and ten-digit call translations.

NA011

Adds option PRIPSAP to field LTDKEY, subfield DATATYPE = SERV. This option allows the user to provision the PRI PSAP.

Adds options SHPRN and MWIC. SHPRN provides the switch with the ability to override the delivery of presentation restricted numbers. MWIC provides the capability of accepting an MWI control request over an ISDN NI-PRI trunk group.

EUR010

Note added that option SCRNLTID requires correct entry for NATIONAL_COUNTRY_CODE in table OFCENG.

Adds option ETSIDIV to allow partial rerouting on ETSI PRI trunks for AU3401.

Adds option BILL_FROM_CPN to allow ETSI PRI DN billing for activity AU3273.

Adds option ECT to allow explicit call transfer on ETSI PRI for activity AU3346.

EUR009

Adds option INSNAC to trigger modification of the outgoing CLI to a full national number.

APC010

Adds the NET_NORMDISC_ON option to provision a busy tone during normal call release. This option applies to the network side of INS1500 PRI trunks.

NA010

Adds options LSPAO and LSPSO to associate LSPAO and LSPSO for PRI private trunk types that have NTNA or NI protocol variant.

PRI SUSP for CNAME (AF7570) adds subfield CNAM_SUSP to option TCAP_CNAM for DATATYPE SERV. This feature also adds the error and warning messages listed in “Supplementary information.”

EUR008

Adds values AOCS, PROTOCOL, REQUEST, and UNITS to the AOC option field.

Adds options NET_CALLFAIL_ON, NET_DIALTONE_ON, and NET_RINGBACK_ON to provision network tones on the network side of PRI trunks.

Adds option ECMA226_CHNL_MAP to permit channel mapping functionality.

APC009

Tones Over PRI (AU2501) adds entries NET_CALLFAIL_ON, NET_DIALTONE_ON, and NET_RINGBACK_ON to subfield OPTION.

Original and Redirection Number on TS14 PRI and ETSI PRI (AU2578) adds entry CGNCALC to subfield OPTION.

LTDATA NOSCRN Option (AU2579) allows entry NOSCRN to subfield OPTION for TS14 trunk groups.

PBX CLI Management (AU2580) adds options CLIVD, EDITALLTON, and SIGCLI to subfield OPTION of field DATATYPE=CLI.

NA009

The following changes were made:

- Added subfields PARM and STATUS for TBCT.
- Added LSPAO option with subfields PROVIDER and CONTEXT.

ISDN PRI calling name delivery (I-CNAM) feature AF7209 adds TCAP_CNAM as a subfield of the service data (SERV) selector OPTION field.

LTDATA (continued)

NA008

The following changes are made:

- PRI Option for AIN IPI (AJ4594) adds AIN_IPI_STR to subfield OPTION.
- Two B-Channel Transfer option (AR2401) adds TBCT to subfield OPTION if field DATATYPE = SERV. Adds table control warnings for dependencies in table LTDEF when using option TBCT.
- PRI Call Screening (AF6863) adds entry RN to field DATATYPE and subfield OPTION = EDITRN.
- PRI Call Screening (AF6863) adds entry RNID suppression to subfield OPTION if field DATATYPE = SERV.
- PRI Call Screening (AF6863) adds entry RNDELV screening to subfield OPTION and subfields ALWAYS, SCREENED, or NEVER if field DATATYPE = SERV.
- PRI Call Screening (AF6863) adds entry BNS to subfield OPTION if field DATATYPE = SERV.

NA007

Added a note for option DFLTPI in response to a customer request.

EUR006

The point of presence (POP) option is added to the CLI selector.

The priority class of service (PCOS) option is added to enable priority class calls to originate on ISDN BRI and PRI trunks under essential service protection (ESP) and network protection (NETPROT) conditions. PCOS prevents non-priority traffic in the case of a catastrophe.

Added AOC in the OPTION field. Option AOC has the following subfields: AOCD, AOCE, DSCNT, AOCREL, and AOCCHGOV.

Note: Option AOC is available only for PRI trunks.

Added supplementary service features Closed User Group (CUG), Call Complete Busy Subscriber (CCBS), and Malicious Call ID (MCID).

Added the Direct Dialing In (DDI) feature.

XPM08

Added a note for option DFLTPI in response to a customer request.

Added NO_BCH_SERV in the OPTION field. Changed default value in field CGNDELV.

CCM07

Added an option to turn B-channel messaging ON or OFF and to allow CGN-related information to be datafilled for the originating PRI.

BCS36

The following changes were made:

- added new functionality to field AUDTRMT
- added value UUS1 to subfield OPTION

Supplementary information

This section provides supplementary information and error messages for table LTDATA.

Limitations for PRI variants CLI and RN

PRI variants that support the CLI datatype are NTNA, NI2, ETSI, QSIG, Australia, Japan, French and Hong Kong. The following error message is displayed at the MAP if an attempt is made to provision the CLI on an unsupported PRI variant. The acronym PVC means Protocol Variant Control.

```
CLI DATATYPE SELECTOR IS NOT SUPPORTED FOR THIS PVC
```

The PRI variant that supports the RN datatype is NI2. The following error message is displayed at the MAP if an attempt is made to provision the RN on an unsupported PRI variant.

```
RN DATATYPE SELECTOR IS NOT SUPPORTED FOR THIS PVC
```

Overnight process notes

The AOC option contents of table LTDATA are transferred to table TRKOPTS during ONP, where the new AOC provisioning for PRI and QSIG subscribers are available.

ECT option support

The ECT option is only supported for ETSI PRI 1990. If an ECT option is added to a non-ETSI 1990 entry, the following error message appears:

```
The ECT option is only supported for ETSI PRI issue
1990.
```

LTDATA (continued)

Errors for PRI Calling Name Delivery and PRI SUSP for CNAME

The following error and warning messages are associated with the PRI Calling Name Delivery (I-CNAM) and PRI SUSP for CNAME features.

- The following warning message displays if the operating company attempts to provision the TCAP_CNAM option against a non-NI-PRI variant:

  ```
  THE OPTION IS ONLY VALID FOR NI-PRI VARIANT
  ```

- The following error message displays if parameter ISDNCIRCUIT in table AMAOPTS is not enabled:

  ```
  TABLE AMAOPTS OFFICE PARM ISDNCIRCUIT MUST BE
  ENABLED
  ```

- The following error message displays if parameter AMA_FORMAT in table AMAOPTS is not set to ATT_AMA_FORMAT to indicate Bellcore billing:

  ```
  SUSP ONLY ALLOWED IN BELLCORE AMA FORMAT OFFICES
  ```

- The following warning message displays if the operating company has not assigned a billing DN in table TRKGRP:

  ```
  Billing DN not assigned in table TRKGRP
  ```

- The following warning message indicates that the billing DN in table TRKGRP is outside the range of 3 to 10 digits:

  ```
  Number of Billing DN digits not in range
  ```

- The following warning message displays if an attempt is made to provision SHPRN and the corresponding LTID in table LDEF is not defined as NI-PRI:

  ```
  The SHPRN option is only supported by the NI-PRI
  variant defined in table LTDEF
  ```

- The following warning message displays if an attempt is made to change the variant from NI-PRI to any other variant while the SHPRN option is provisioned:

  ```
  INVALID CHANGE: Delete the SHPRN option entry from
  table LTDATA for this interface before changing
  the PRI variant
  ```

- The following warning message displays if an attempt is made to provision SHPRN and the option RNDELV is not present:

  ```
  The RNDELV option of table LTDATA must be
  provisioned to datafill SHPRN
  ```

- The following warning message displays if an attempt is made to provision SHPRN and CGNDELV is not set to screened:

  ```
  The SHPRN option requires CGNDELV and RNDELV to be
  set to screened before adding the SHPRN option
  ```

- The following warning message displays if the NCAS option does not exist:

  ```
  MWIC option is only valid with NCAS option. Ensure
  that NCAS option is assigned to the NI PRI LTID
  with PUBLIC service type in table LTCALLS
  ```

- The following warning message displays if the MWIC option is being added to a non-NI-PRI LTID:

  ```
  MWIC option is only valid on NI-PRI LTID
  ```

- The following warning message displays if parameter MAX_NUM_PRI_MWIC_CONTROL is exceeded by the optional parameter MWIMAX of option MWIC:

  ```
  The total MWIMAX must not exceed OFCENG office parm
  MAX_NUM_PRI_MWIC_CONTROL. The current total is
  <total_mwimax>. The allowable MWIMAX value must be
  less than or equal to <allowable_mwimax>
  ```

LTDEF

Table name

Logical Terminal Definition

Functional description

The logical terminal tables identify logical terminals and both the associated line equipment number (LEN) and the associated terminal equipment identifier (TEI). The logical terminal tables consist of tables TAKGAP, LTCALLS, LTDATA, LTDEF, LTGRP, and LTMAP.

Table LTDEF defines the service profile of an ISDN logical terminal identifier (LTID). The key to this table is an LTID. An LTID consists of a logical terminal group (LTGRP) from table LTGRP and a logical terminal number (LTNUM) in the range of 1 to 1022.

This table must be datafilled to provision ISDN primary rate interface (PRI) and basic rate interface (BRI) services. The type of service requested is distinguished by the LTCLASS field, for example, BRAFS, PRA, and BRAMFT. Based on the type of service, datafill logical terminal-specific options against a particular LTID.

The option supports the RES Translations Simplification feature.

Datafill sequence and implications

Datafill tables SVPRIGRP and LTGRP before table LTDEF.

Table size

0 to 32 704 tuples

Datafill

The following table lists datafill for table LTDEF.

Field descriptions

Field	Subfield	Entry	Explanation and action
LTKEY		see subfields	Logical terminal key. This field consists of subfields LTGRP and LTNUM.
	LTGRP	alphanumeric (up to 8 characters)	Logical terminal group. Enter the name of a group of logical terminals. Valid group names are in field GROUP of table LTGRP.

Field descriptions

Field	Subfield	Entry	Explanation and action
	LTNUM	1 to 1022	This is the logical terminal number. Enter a number to identify the logical terminal within the group.
LTAP		B, D, PB, BD, 2B, 2BD	This is the logical terminal access privilege. Enter the access privilege of the logical terminal. For circuit switching or for ISDN MFT terminals, enter B. For D-channel packet switching, enter D. For provisioned B-channel packet switching, enter PB. For combined circuit switching, enter BD. For two B-channel circuit switching, enter 2B. For D-channel packet switching and circuit switching on the same NI-2 terminal, enter 2BD. A terminal with the 2BD option must also have CLASSREF subfield LTCLASS = BRAFS, BRAFS subfield OPTION = PVC, DTEI, and PVC subfields VERSION = FUNCTIONAL and ISSUE = 2. The NITYPE option must be specified with a value of NI2. ***Note 1:*** If the PVC option is not specified, it will be added by default as PVC FUNCTIONAL 2. ***Note 2:*** You cannot change an existing access privilege to 2BD.
CLASSREF		see subfield	The class reference field consists of subfield LTCLASS.
	LTCLASS	BRAFS, BRAMFT, PRA	The logical terminal class field identifies the set of services that are allowed for a logical terminal. For basic rate access (BRA) functional sets, enter BRAFS. For BRA Meridian feature transparency (MFT) terminals, enter BRAMFT. For primary rate access, enter PRA.

LTCLASS = BRAFS

If the entry in subfield LTCLASS is BRAFS, datafill subfield OPTION as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
BRAFS	OPTION	AGA, CACH, CMD, DEFLTERM, DTEI, EKTS, ELN, NITYPE, NOCMD, NOPMD, NOVBD, NOVOICE, NO OCT, OML, PMD, PVC, SCAI, SLBRI, SPIDSFX, TERML, TSPID, UATEI, UNATEI, USRCLI, VBD, VOICE	Enter up to 18 options. Enter AGA to enable the associated group feature. Datafill subfields AG_GROUP and AG_CT. Enter CACH to enable the call appearance handling feature on a terminal. This option cannot be assigned without option EKTS. Enter CMD to indicate that circuit mode data calls are allowed (ISDN BRI only). Enter DEFLTERM (for example, non-initializing terminal) to indicate that the option defines a default logical terminal and thus, a default service profile for the loop. Enter DTEI for a dynamic TEI. DTEI must be entered if SPIDSFX or EKTS is required.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter EKTS to indicate electronic key telephone service. Enter ELN to indicate that the BRA is handled as an essential access. Enter NITYPE to specify whether the terminal is National ISDN 1 (NI-1) or National ISDN 2 (NI-2) compliant. Datafill subfield NITYPE. Enter NOCMD to indicate that circuit mode data calls are not allowed for ISDN PRI. Enter NOPMD to indicate that packet mode data calls are not allowed for ISDN PRI. Enter NOVBD to indicate that voice band data calls are not allowed for ISDN PRI. Enter NOVOICE to indicate that voice calls are not allowed for ISDN PRI. Enter OCT to indicate an overload condition treatment. OCT dictates the type of control applied to terminals in a rapid messaging (RM) state. Valid values are REPONLY (report only) or REPCTRL (report and control). Enter OML to indicate an overload messaging limit for D-channel messages allowed on an LTID before activating RM controls. OML is valid for BRAFS circuit-switched (CS) LTIDs. Valid values are 0 to 150 messages per minute with increments of 15. If OML is set to zero, RM is turned off for the LTID. If OML is assigned a value other than zero, the OML overrides the DEFOML value. Enter PMD to indicate that packet mode data calls are allowed (ISDN BRI only). Enter PVC to indicate that the terminal has protocol selectivity through protocol version control. Datafill subfields VERSION and ISSUE. Enter SCAI to indicate that the logical terminal has access to the switch computer application signaling interface. ***Note:*** Option SCAI is not a valid entry for table LTDEF for BCS34 and up. Enter SLBRI for ISDN single line BRI.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter SPIDSFX for a service profile identifier suffix. Datafill subfield SPID_SUFFIX. Enter TERML to specify the number of non-initializing terminals (NIT) that the LTID can support. Datafill subfield TERML. Enter TSPID to define the Free Format Terminal Service Profile Identifier (TSPID) value. TSPID is required for datafilling new BRAFS sets and for initializing Basic Rate Interface Functional Signaling (BRIFS) LTIDs. Enter UATEI to indicate user-assigned dynamic TEI terminals. Enter UNATEI to indicate a user- or network-assigned TEI. For a BRI line, enter USRCLI to indicate that for a call originating from an ETSI BRI or VN4 BRI line, the CLI of the originating call is captured and stored in the Orig Open Digits (OOD) field in module 046. Enter VBD to indicate that voiceband data calls are allowed (ISDN BRI only). Enter VOICE to indicate that voice calls are allowed (ISDN BRI only). ***Note:*** Options DTEI, UATEI, UNATEI, EKTS, SPIDSFX, and TSPID are incompatible with option DEFLTERM. By default, NITs use UNATEI TEI assignment procedures.

LTCLASS = BRAFS, OPTION = AGA

If the entry in subfield OPTION is AGA, datafill subfields AG_GROUP and AG_CT as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
AGA	AG_GROUP	1 to 9	This is the associated group number. Enter the number of the associated group.
	AG_CT	AG_VI, AG_CMD, AG_ALL, AG_UNASSIGNED	This is the associated group call type.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter AG_VI (voiceband information) for voice call type. Enter AG_CMD (circuit mode digital information) for data call type. Enter AG_ALL for all call types. Enter AG_UNASSIGNED to indicate that no call types are assigned.

LTCLASS = BRAFS, OPTION = NITYPE

If the entry in subfield OPTION is NITYPE, datafill subfield NITYPE as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
OPTION	NITYPE	NI1, NI2, or NIL_TERM	This is the terminal type. Enter NI1 or NI2 to specify whether the terminal is National ISDN 1 (NI-1) or National ISDN 2 (NI-2) compliant. The default value for this field is NIL_TERM. ***Note:*** Entry NI3 for this field is reserved for future use.

LTCLASS = BRAFS, OPTION = PVC

If the entry in subfield OPTION is PVC, datafill subfields VERSION and ISSUE as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PVC	VERSION	AUSTEL, ETSI, FUNCTIONAL, MFT, VN4	Enter the protocol version. Enter AUSTEL for the signaling protocol for Australian BRA. AUSTEL can only be datafilled for ISDN loops subtending peripheral module (PM) types PRCC or PLGC. AUSTEL cannot be datafilled for ISDN loops subtending other types of PMs that are ISDN equipped.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter ETSI (European Telecommunications Standards Institute ISDN) for the signaling protocol for European basic rate interface (BRI). Enter FUNCTIONAL for the signaling protocol based on Q.931 messaging protocol or 2BD service. For further information, refer to *Integrated Services Digital Network Service Orders for ISDN Terminals Reference Manual*. Enter MFT using the SLT prompt in the Service Order System (SERVORD). For more information on SERVORD, refer to *SERVORD Reference Manual*. The default value for this field is MFT. Enter VN4 (French ISDN protocol variant) for the possible selection of VN4 for the logical terminal.
	ISSUE	0 to 2	Enter the protocol issue designated for the particular logical terminal. Enter 0 (zero) for stimulus and MFT protocols. Enter 0 (zero) to support the ETSI BRI protocol. Enter 0 (zero) if the protocol version specified is AUSTEL or VN4 Enter 1 for BellCore functional protocol. Enter 2 if feature Protocol Variant Control is provisioned.

LTCLASS = BRAFS, OPTION = SCAI

If the entry in subfield OPTION is SCAI, datafill subfield SCAIGRP as described in the following table.

Note: Option SCAI is not a valid entry for table LTDEF for BCS34 and up.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
SCAI	SCAIGRP	alphanumeric (up to 8 characters)	This is the switch computer application interface group. Enter a valid SCAI group name.

LTCLASS = BRAFS, OPTION = SPIDSFX

If the entry in subfield OPTION is SPIDSFX, datafill subfield SPID_SUFFIX as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
SPIDSFX	SPID_SUFFIX	numeric (up to 8 digits)	This is the service profile identifier suffix. Enter the name that uniquely identifies a particular subscriber on a dynamic TEI terminal. ***Note:*** Prior to BCS35, the entry for field SUFFIX was up to eight alphanumeric characters.

LTCLASS = BRAFS, OPTION = TERML

If the entry in subfield OPTION is TERML, datafill subfield TERML as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
OPTION	TERML	1 to 8	This is the number of NITs. Enter the number of NITs that can be associated with an NI-2 default LTID. A maximum of eight terminals can be associated with an NI-2 default LTID. ***Note 1:*** The TERML value is the number of terminals that can associate with the LTID and that can therefore receive service. The TERML parameter does not restrict the number of TEIs that can exist on the loop in a layer 2 mode. ***Note 2:*** For a D-channel packet-only NIT, a value of 1 is enforced. The default value for this field is 1.

LTCLASS = BRAFS, OPTION = TSPID

If the entry in subfield OPTION is TSPID, datafill subfield TSPID as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
OPTION	TSPID	1 to 18 digits	This is the TSPID value for initializing BRAFS LTIDs. Enter a value from 1 to 18 digits to specify the Free Format SPID value to be used for layer 3 provisioning. The SPID value is composed of the TSPID plus a 2-digit TID.

LTCLASS = BRAMFT

If the entry in subfield LTCLASS is BRAMFT, datafill subfield OPTION as described in the following table. This selector enables datafilling of ISDN MFT terminals. PVC enables specification of the layer 3 protocol that is used for a given ISDN BRI terminal.

Note: Enter the PVC version MFT using the SLT prompt in SERVORD.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
BRAMF	OPTION	DTEI, PVC, SPIDSFX, UATEI	Enter up to four options. Enter DTEI for a dynamic TEI. ***Note:*** DTEI must be entered if SPIDSFX is required. Enter PVC for protocol version control. ***Note:*** This option allows operating company personnel to datafill the protocol version and issue that the ISDN BRI terminals support. Enter SPIDSFX for a service profile identifier suffix. Enter UATEI for a user-assigned, dynamic TEI.

LTCLASS = BRAMFT, OPTION = PVC

If the entry in subfield OPTION is PVC, datafill subfield ISSUE as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PVC	ISSUE	0 or 1	Enter the valid issue for PVC.

LTCLASS = BRAMFT, OPTION = SPIDSFX

If the entry in subfield OPTION is SPIDSFX, datafill subfield SPID_SUFFIX as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
SPIDSFX	SPID_SUFFIX	numeric (1 to 8 digits)	Enter the service profile identifier suffix. This is the name that uniquely identifies a particular subscriber on a dynamic TEI terminal. ***Note:*** Prior to BCS35, the entry for field SPID_SUFFIX was up to eight alphanumeric characters.

LTCLASS = PRA

If the entry in subfield LTCLASS is PRA, datafill subfields NUMBCHNL and OPTION as described in the following table.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
PRA	NUMBCHNL	1 to 479	Enter the number of B-channels that this logical terminal is allowed to use at any time. The sum of this field over all logical terminal identifier (LTID) on an interface must not exceed the number of B-channels on the interface. ***Note:*** Field NUMBCHNL is not used at this time and is reserved for future use.
	VARISSUE	see subfields	This field consists of subfields VARIANT and ISSUE.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	VARIANT	AUSTPRI, ETSIPRI, EVN4PRI, INSPRI, NTNAPRI, NIPRI, N449PRI, QSIGPRI U449PRI, or U459PRI	This is the variant type. Enter the PRI protocol being used for the LTID as follows: • AUSTPRI - Australian PRI • ETSIPRI - ETSI PRI (Europe) • EVN4PRI - French PRI (Numeris VN4) • INSPRI-Japan INS-1500 PRI • NTNAPRI-Northern Telecom (Nortel) PRI • NIPRI-NI-2 PRI ***Note:*** If the corresponding LTID tuple in table LTDATA has field DATATYPE = SERV and subfield OPTION =TBCT, attempts to change VARIANT from NIPRI are rejected with the following error message: **Cannot change VARIANT: TBCT provisioned on LTID in Table LTDATA. Delete TBCT from the tuple in LTDATA first.** ***Note:*** If the corresponding tuple in table LTCALLS has field CALLTYPE = PVT, an attempt to change the PRA VARIANT to NIPRI fails with the following message: `ERROR: delete Private service type ENTRY from table LTCALLS for this INTERFACE BEFORE changing the LTDEF variant to NIPRI.` • N449PRI-AT&T SYS85 • QSIGPRI-QSIG PRI • U449PRI-AT&T 4ESS • U459PRI-AT&T 5ESS

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
	ISSUE	1990, ETSI1993, EVN4V1, FR_VN6, HOLLAND1, ISO1996, NET3, NI2V1, SPAIN1, SWISS3, TS141990, V1, X11	Enter the issue of the PRI variant used as follows: • If ECT is provisioned in table LTDATA, an attempt to change ISSUE to any other value except 1990 displays the message: `The ECT option is only supported for ETSI PRI issue 1990` • If the entry in field VARIANT is ETSIPRI, enter 1990, FR_VN6, HOLLAND1, ISRAEL, NET3, SPAIN1, SPAP_PRI, SWISS3, STDETS11, STDETS12, STDETS13, STDETS14, STDETS15 or X11. • If the entry in field VARIANT is AUSTPRI, enter TS141990. • If the entry in field VARIANT is INSPRI, N449PRI, NTNAPRI, U449PRI, or U459PRI, enter V1 or V2 • If the entry in field VARIANT is NIPRI, enter NI2V1 and datafill subfield PGRPID. • If the entry in field VARIANT is EVN4PRI, enter EVN4V1 or FR_VN6. • If the entry in field VARIANT is QSIGPRI, enter ETSI1993 or ISO1996. This value is dependent on the choice of the VARIANT.
	PROFNAME	alphanumeric to 8 characters), NIL	The profile name field is the key to table PRIPROF. Enter a profile name linking a profile (set of function switches) to an interface. This name must first be datafilled in table PRIPROF. The default for this field is NIL and disables all available function switches. Entries correspond with entries for VARIANT and ISSUE in table PRIPROF.
	OPTION	CMD, ONEPLNC, PGRPID, PMD, SZGRDTM, VBD, VOICE	Enter up to six options.

Field descriptions for conditional datafill

Field	Subfield	Entry	Explanation and action
			Enter CMD to indicate that circuit mode data calls are allowed. Enter ONEPLNC to allow 1+10 digits for non-AIN translations. Enter PGRPID followed by the name of the Serving PRI group, to indicate a Serving PRI group. This name is the key to table SVPRIGRP, and must first be datafilled in table SVPRIGRP. The default for this field is NIL. If the value is NIL, then PGRPID does not appear in the options list for the tuple. Enter PMD to indicate that packet mode data calls are allowed. Enter SZGRDTM to specify the minimum amount of time the DMS will wait after a call completion before seizing that same trunk for another call. The default value, without this option, is 750 ms. This option is valid for PRA, IBNT2 and PRA250 Trunk Types (as datafilled in table TRKSGRP). Enter VBD to indicate that voiceband calls are allowed. Enter VOICE to indicate that voice calls are allowed.

Datafill example

The following example shows sample datafill for table LTDEF. ISDN 820 is an integrated NIT with dynamic TEI, and ISDN 830 is a packet-only NIT with dynamic TEI.

MAP display example for table LTDEF

```
    LTKEY       LTAP                                                    CLASSREF
_____________________________________________________________________
     NI1 282            2B
BRAFS     (PVC FUNCTIONAL 2)      (DTEI)      (TSPID 613723512307)            (EKTS) $
     NI1 19             B
BRAFS     (VOICE) (VBD) (CMD) (PVC FUNCTIONAL 2)          (DTEI) (TSPID 55555) $
     NI1 283            2B
BRAFS     (PVC FUNCTIONAL 2)      (DTEI)      (TSPID 613723512308) (EKTS) (CACH)
$
     ISDN 820           2BD
BRAFS     (DEFLTERM) (NITYPE NI2)       (PVC FUNCTIONAL 2)       (TERML 4)$
     ISDN 830           D
BRAFS     (DEFLTERM)    (TERML 1) $
     ISDN 383           B
PRA 10 10 5 5 NIPRI NI2V1 NIL (NOPMD) (PGRPID PRI_TO_MTRL) $
```

The following example shows the USRCLI option datafill for table LTDEF.

MAP display example for table LTDEF

```
>table ltdef
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: LTDEF
>add
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
LTKEY:
>ISDN1 1
LTAP:
>B
LTCLASS:
>BRAFS
OPTION:
> USRCLI
OPTION:
> $
TUPLE TO BE ADDED:
ISDN1 1 B BRAFS (USRCLI) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
```

Table history

CSP17

CR Q00270160 added options ONEPLNC and SZGRDTM to field PRA subfield OPTION.

CR Q00588753 removed the NUMCALLS, INCALLS, and OUTCALLS options from field PRA.

SN04 (DMS)

Feature A59035533 added option USRCLI to field BRAFS subfield OPTION.

NA015

Feature A59023416 added subfield N449PRI to option VARIANT.

MMP15

Added value FR_VN6 to subfield VARIANT entry EVN4PRI for activity 59022564.

MMP13

Added value FR_VN6 to subfield ISSUE for MMP13.

MMP12

Added option ETSI1993, and deleted obsolete options ISO1990 and ISO1994 from subfield ISSUE

NA011

Deleted BRAKS as an LTCLASS subfield entry. The NA011 release removes obsolete BRAKS types of ISDN BRI and changes obsolete BRAKS LTIDs to default BRAFS LTIDs.

EUR010

Added options SPAIN1, HOLLAND1 to subfield ISSUE for activities AU3208 and AU3209 (Spanish PRI and Dutch PRI).

EUR009

Added option SWISS3 to subfield ISSUE for activity AU2826.

A new value VN4 is added for the PVC entry in table LTDEF.

APC010

Added value QSIGPRI to subfield VARIANT and values ISO1990, ISO1994, and ISO1996 to subfield ISSUE.

NA009

The following changes were made to table LTDEF:

- Table is updated to include a new OPTION entry for PRA to identify the serving PRI group with an associated LTID. The serving PRI group is the key in table SVPRIGRP.
- Increased the range of subfield AG_GROUP of option AGA to support Associated Groups on a TSP Basis, AF7326.
- Added examples of an integrated and a packet-only NIT with TEI to the datafill example to include ISDN Packet NIT Support, AF6788.
- Added SLBRI to OPTION subfield BRAFS.
- Replaced NOVOICE, NOCMD, NOVBD, and NOPMD in OPTION subfield BRAFS with VOICE, CMD, VBD, and PMD. This applies to ISDN BRI only. ISDN PRI continues to use NOVOICE, NOCMD, NOVBD, and NOPMD in OPTION subfield BRAFS.
- Added subfield TSPID to field OPTION for defining the Free Format SPID value during Layer three provisioning, AF7240.

NA008

The following changes have been made to table LTDEF:

- Added option AGA for the Associated Group Assignment capability.
- Added subfields AG_GROUP and AG_CT to option AGA for associated group number and associated group call type to support Associated Group for LTIDs feature (AF6642).
- Made the following changes to support NI-1/NI-2 Interface Identification feature (AF6641):
  - — added entries NITYPE and TERML to subfield OPTION for LTCLASS = BRAFS
  - — added two tuples to MAP display example
- Added warning note to field LTCLASS = PRA, subfield VARIANT = NIPRI when option TBCT is datafilled in table LTDATA to support Two B-Channel Transfer feature (AR2401).
- Added warning note when changing the PRI VARIANT from any type to NIPRI if CALLTYPE = PVT in table LTCALLS to support Call by Call (CBC) feature (AF6864).
- Added entry 2BD to field LTAP to support ISDN Packet Single DN feature (AF6782).
- Added entries X11, NET3 and EVN4PRI to the VARIANT field and EVN4V1 to the ISSUE field.

NA007

Table LTDEF has been updated with a note for subfields NUMBCHNL, NUMCALLS, INCALLS, and OUTCALLS.

EUR006

Feature AR2189 adds the Essential Access (ELN) setting to option BRAFS enabling BRA to be handled as essential lines.

Feature AJ4356 added the protocol variant, QSIGPRI and three new values, ISO1990, ISO1994, and ISO1996, to the range in subfield ISSUE as part of the ISO QSIG base for the DMS-100E Phase 1.

XPM08

Modify LTDEF table for feature AJ4141. Change defaults.

CCM07

Table LTDEF was modified to include 2B as a valid entry in field LTAP. Table LTDEF was modified to include NIPRI as a valid entry in field VARIANT.

BCS36

The following changes have been made to table LTDEF:

- deleted value NONINIT in field OPTION and replaced it with value DEFLTERM
- deleted value PVC in field OPTION for the PRA subfield of LTCLASS
- added fields VARIANT, ISSUE, and PROFNAME for the PRA subfield of LTCLASS

LTDSD

Table name

Line Test Desk Signal Distribution Table

Functional description

Table LTDSD identifies the signal distribution (SD) points used to drive the applique circuit during mechanized loop testing. The applique circuit, used in conjunction with a 2X90AD test trunk, reports line card diagnostic results to mechanized loop testing equipment, like a mechanized loop tester or line test desk.

The applique circuit uses four SD points. These points belong to one or more SD groups that are defined in table SDGRP.

Datafill sequence and implications

The following tables must be datafilled before table LTDSD:

- SDGRP
  - — SD points need not belong to the same SD group
- TRKMEM
  - — the trunk member is used as a key identification into table LTDSD. Valid trunk group members belong to trunk groups of the type, test desk (TD), VERSION MLT, or TSTDK

Table size

Memory is allocated for up to 16 tuples in this table. Of the 16 tuples, there can be no more than 16 different trunk group names. The memory size for the table depends on field SIZE in table SYSDATA.

Should there be a need to add entries with more than 16 different trunk group names, there is 1 alternative.

One could generalize the CLLINAME for the trunk group and add up to 32 entries per trunk group name, with a different member number for each entry, provided the current size limit for table LTDSD in table SYSDATA is not exceeded.

Datafill

The following table lists datafill for table LTDSD.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TDMEM		see subfields	*Trunk member* This field consists of subfields CLLI AND MEMNAME.
	CLLI	alphanumeric (1 to 16 characters)	*Common language location identifier* Enter the code that is assigned in the CLLI table.
	MEMNAME	0 to 9999	*Trunk member name* Enter the trunk member that uses the SD circuit pack.
TDSDGRP1		0 to 511	*Test desk signal distribution group 1* Enter the SD group to which the first SD point belongs.
TDSDPT1		0 to 6	*Test desk signal distribution point 1* Enter the number of the first SD point, which drives relay DS-1 in the applique circuit.
TDSDGRP2		0 to 511	*Test desk signal distribution group 2* Enter the SD group to which the second SD point belongs.
TDSDPT2		0 to 6	*Test desk signal distribution point 2* Enter the number of the second SD point, which drives relay DS-2 in the applique circuit.
TDSDGRP3		0 to 511	*Test desk signal distribution group 3* Enter the SD group to which the third SD point belongs.
TDSDPT3		0 to 6	*Test desk signal distribution point 3* Enter the number of the third SD point, which drives relay DS-3 in the applique circuit.

LTDSD (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TDSDGRP4		0 to 511	*Test desk signal distribution group 4* Enter the SD group to which the fourth SD point belongs.
TDSDPT4		0 to 6	*Test desk signal distribution point 4* Enter the number of the fourth SD point, which drives relay DS-4 in the applique circuit.

Datafill example

The following example shows sample datafill for table LTDSD.

The example shows trunk member MLTTRK 1 as the key into the table LTDSD.

MAP display example for table LTDSD

```
    TDMEM
      TDSDGRP1  TDSDPT1   TDSDGRP2  TDSDPT2   TDSDGRP3  TDSDPT3
      TDSDGRP4  TDSDPT4
_____________________________________________________________________

MLTTRK   1
             6        5          6        6          7        0
             7        1
```

LTGRP

Table name

Logical Terminal Group Table

Functional description

Table LTGRP associates a logical terminal group name with terminal types that can be datafilled in that group. The key to this table is the name of a group of logical terminals. The options field describes what type of terminals are allowed in a group. The group ISDN is a permanent entry in table LTGRP. It does not need to be manually datafilled and cannot be deleted.

Datafill sequence and implications

The following tables must be datafilled after table LTGRP:

- LTDEF
- LTMAP
- LTCALLS
- KSETLINE
- KSETFEAT
- KSETINV

Table size

Memory is allocated dynamically for this table.

LTGRP (end)

Datafill

The following table lists datafill for table LTGRP.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
GROUP		alphanumeric (vector of up to 8 characters)	*Logical terminal group name* Enter the name of the group of logical terminals.
GROUPNO		0 to 31	*Logical terminal group number* Enter the group number associated with the group name. Non-SAPI16 groups can be assigned any value from 0 to 31, but SAPI16 groups must be assigned a value between 0 and 15. Default group ISDN is automatically assigned group number 0.
OPTIONS		SAPI16 or $	*Logical terminal options* Enter the type of terminals allowed in a group. The only option currently allowed is SAPI16. If this is specified, both packet and circuit switching terminals can be datafilled for the group. If SAPI16 is not specified, no packet switching terminals can be datafilled for the group. The default group ISDN is specified as SAPI16.

Datafill example

The following example shows sample datafill for table LTGRP.

MAP display example for table LTGRP

```
GROUP GROUPNO   OPTIONS
_____________________________________________

ISDN      0 (SAPI16)$
```

LTMAP

Table name

Logical Terminal Mapping

Functional description

This table maps logical terminals to a line equipment number (LEN) or trunk span DS-0 location and the terminal equipment interface, depending on the logical terminal access privilege (LTAP).

The key to this table is LTKEY (LTGRP, LTNUM).

Datafill sequence and implications

The following tables must be datafilled before table LTMAP:

- LTGRP (Logical Terminal Group)
- LNINV (Line Circuit Inventory)
- LTDEF (Logical Terminal Definition)
- SPECCONN (P-side to P-side Special Connection)
- TRKGRP (Trunk Group)
- TRKSGRP (Trunk Subgroup)
- TRKMEM (Trunk Member)
- DCHINV (D-Channel Handler Inventory)
- DNCTINFO (Directory Number Call Type Information)
- DNCHNL (Directory Number Channel Type)
- LIDINFO (

Datafill sequence and implications for PRI with Semipermanent Packet

The following tables must be datafilled in the following sequence:

- LTGRP, LTDEF, KSETINV, KSETLINE, DNCTINFO, DNCHNL
- LTCINV, LTCPSINV
- CLLI, TRKGRP, TRKSGRP, TRKMEM
- XSGDEF, SPECCONN
- LTMAP

Table size

No data store is required for this table. It uses the data store of table LTDEF.

LTMAP (continued)

Datafill

The following table lists datafill for table LTMAP.

Field descriptions for table LTMAP (Sheet 1 of 4)

Field	Subfield	Entry	Explanation and action
LTKEY		see subfields	*Logical terminal key* This field consists of subfields LTGRP and LTNUM.
	LTGRP	alphanumeric (maximum 8 characters)	*Logical terminal group* Enter the group of the logical terminal.
	LTNUM	1 to 1022	*Logical terminal number* Enter the logical terminal number within the group.
MAPPING		see subfield	*Logical terminal mapping* This field consists of subfield MAPTYPE.
	MAPTYPE	CLLI, LEN or XSG	*Logical terminal mapping type* Enter the type of mapping being used. Enter CLLI and datafill refinement CLLI. Enter LEN and datafill refinement LEN. Enter XSG and datafill refinement XSG. For primary rate access (PRA), the logical terminal identifier must be mapped to a CLLI.
	CLLI	alphanumeric (maximum 16 characters)	*Common language location identifier* Enter the CLLI of the PRA trunk to which the logical terminal is assigned. ***Note:*** If the mapped CLLI has the IP option provisioned in table TRKGRP, then the variant of the LTID must be NI2.

Field descriptions for table LTMAP (Sheet 2 of 4)

Field	Subfield	Entry	Explanation and action
	LEN	see subfields	*Line equipment number* This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN” for a complete description of field LEN and associated subfields. For integrated services data network (ISDN) lines, field LEN consists of subfield logical terminal identifier (LTID). For non-ISDN lines, field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.
	XSG	0 to 749	*X.25/X.75 service group* This field associates an echo station LTID to an XSG for user loop back testing. Identify the XSG by an X.25 link interface unit (XLIU) in the range of 0 through 749.
OPTION		BCH, DCHCHNL, ILDCHNL, LTBYTE, MEM, PHI, TEI, or XSG	*Option* This field is a vector of maximum two entries. If less than two entries are required, end the list with a $(dollar sign). Enter the option that is based on the terminal access privilege chosen. Option B-channel (BCH) is used for BRI packet data (that is, for PB [high-speed packet-switched data] type terminals only). Datafill refinement BCH. ***Note:*** TEI is disallowed for packet-only and integrated NITs with dynamic TEI. If the member (MEM) option is checked, then the specified LTID is packet on PRI LTID and a member number must be provided which corresponds to the member number in table TRKMEM.

LTMAP (continued)

Field descriptions for table LTMAP (Sheet 3 of 4)

Field	Subfield	Entry	Explanation and action
	BCH	B1 or B2	*BRI B-channel* Enter the B-channel that is selected for packet data. This is specified for PB type terminals only. Option D-channel (DCHCHNL) is valid for D (low-speed packet data), BD circuit-switched (CS) voice, or 2BD (two B-channel voice and and low-speed packet mode data) LTIDs that are associated with loops on an ISDN LTC or LGC. This option is also valid for all V5.2 ISDN lines.
	DCHCHNL	0 to 31	*D-channel handler (DCH) channel* Enter the DCH to which the loop is connected. NI-2 D-channels can only be datafilled on the 24th channel of a carrier. This option is also valid for all V5.2 ISDN lines. DCHCHNL must be specified for 2BD type terminals. Option ISDN line drawer channel (ILDCHNL) is defined for D-packet switching on ISDN line drawer for remote (ILDR) terminals. Datafill refinement ILDCHNL.
	ILDCHNL	BD1 or BD2	*ILD channel.* Enter the Bd-channel number to identify the channel for D-packet switching Option logical terminal byte (LTBYTE) is used to examine or set the internal LTID BYTE value. Datafill refinement LTBYTE.
	LTBYTE	0 to 255	*Logical terminal identifier type* Enter the value used internally to identify the terminal on the loop. This option is required during a batch change supplement (BCS) switch of activity (SWACT) to ensure the LTID BYTE does not change. Any entry outside the range indicated for this field is invalid.

Field descriptions for table LTMAP (Sheet 4 of 4)

Field	Subfield	Entry	Explanation and action
			Option packet handler interface (PHI) is used for D and BD type terminals. Datafill refinement PHI.
	MEM	0 to 32767	*Member* Enter the member number of the trunk group for PRI with Semipermanent Packet.
	PHI	0 to 1023	*Packet handler interface* Enter the PHI that is selected for D and DB type terminals. Option terminal endpoint identifier (TEI) is used for static TEI terminals to indicate the value of the static TEI. Datafill refinement TEI.
	TEI	0 to 63	*Terminal endpoint identifier* Enter the terminal endpoint identifier that is specified for static TEI terminals.
	XSG	0 to 749	*X.25/X.75 service group* Enter the number of the X.25 or X.75 XSG to which the provisioned LTID with D-channel packet service is being assigned.

Datafill example

The following example shows sample datafill for table LTMAP.

Note: In software release NA014 and up, the mapping of an LTID provisioned with ODB service to a LEN requires the provisioning of the LTID with the XSG option in table LTMAP. See LTKEY entries PKT 100 and PKT 101 in the following example.

LTMAP (continued)

MAP display example for table LTMAP

```
     LTKEY              MAPPING                               OPTION
   ___________________________________________________________________

   ISDN  320 CLLI      K2KLTI64LP1                     (    TEI  0)$

   ISDN  321 CLLI      K2KLTI64LP2                     (    TEI  0)$

   ISDN  323 CLLI           LD64CL                     (    TEI  0)$

   ISDN  326 CLLI   K2KLTC264CLLP1                     (    TEI  0)$

   ISDN  327 CLLI   K2KLTC264CLLP2                     (    TEI  0)$

   ISDN  327       LEN HOST 01 0 01 04                (DCHCHNL  0)$

   PKRPRA 40 CLLI   PKTPRI                             (    MEM  1)$

   PKT 1OO LEN ISDN 00 0 00 00                   (XSG 100) (DCHCHNL 31)$

   PKT 101 LEN ISDN 00 0 00 02                   (XSG 110)
```

Supplementary information

This section explains the error messages that can occur if you incorrectly datafill table LTMAP.

Error messages specific to PRI with Semipermanent Packet

Reason: Primary Rate Interface (PRI) with Semipermanent Packet LTID supports option MEM only.

```
Only MEM option should be present for Packet on PRI.
```

Action: Perform the LTMAP datafill with only option MEM present.

Reason: The following error message displays if the MAP type is not CLLI for PRI with Semipermanent Packet.

```
The map type should be CLLI for Packet on PRI LTIDs.
```

Action: Use CLLI instead of LEN as the datafill for MAP types.

Reason: The following error message displays if table TRKMEM does not datafill to map the CLLI and MEMBER to DS-0 datafill in table SPECCONN.

```
Table TRKMEM should be datafilled before LTMAP.
```

Action: Datafill table TRKMEM for a member other than 24.

Reason: The following error message displays if the trunk group type is not PRA.

```
The trunk group should be PRA for Packet on PRI trunk.
```

Action: Use CLLI. CLLI has a PRA trunk group type.

Reason: The following error message displays if the signaling type of the subgroup is not X.25 for Packet on PRI CLLI MEM.

```
The signaling type of subgroup should be X25 for Packet on PRI
CLLI MEM.
```

Action: Enter X25. X25 is the signaling type of subgroup for the packet on PRI CLLI MEM.

Reason: The following error message displays if CLLI and MEMBER already map in table LTMAP.

```
The CLLI & MEMBER are already in use.
```

Action: The same CLLI and MEMBER cannot map to another LTID.

Reason: The following error message displays if the terminal class of an LTID is not a basic rate access functional set (BRAFS).

```
The terminal class of the LTID is not BRAFS.
```

Action: The terminal class of an LTID is BRAFS for PRI with Semipermanent Packet.

Reason: The following error message displays if the access privilege for the LTID is D.

```
The access privilege of LTID must be PB.
```

Action: The access privileges for the LTID is PB for PRI with Semipermanent Packet.

Reason: The following error message displays if table KSETINV does not datafill for the correct LTID.

```
The LTID is not datafilled in KSETINV.
```

LTMAP (continued)

Action: The LTID datafills in table KSETINV.

Reason: The following error message displays if table KSETLINE does not datafill.

```
Table KSETLINE not datafilled.
```

Action: The LTID datafills in table KSETLINE.

Reason: The following error message displays if the LTID does not datafill in table DNCHNL.

```
Table DNCHNL not datafilled.
```

Action: The LTID datafills in table DNCHNL.

Reason: The following error message displays if the LTID does not datafill in table DNCTINFO.

```
Table DNCTINFO not datafilled.
```

Action: The LTID datafills in table DNCTINFO.

Reason: The following error message displays if the LTID maps to a LEN and operating company personnel try to map the LTID to CLLI with MEM option using the CHANGE command.

```
Cannot change map type. Please delete and add the tuple.
```

Action: Detach the LEN from the LTID and then map this LTID to CLLI.

Reason: The following error message displays if the trunk member to change is not in the installation busy (INB) state.

```
The trunk member must be INB.
```

Action: Change the trunk member to the INB state.

Reason: The following error message displays if operating company personnel use the table control CHANGE command for a PRI with semipermanent packet LTID and try to assign the LTID to a BRI LEN.

```
Cannot change Packet PRI to Packet BRI. Please delete & add the
tuple.
```

Action: Delete and then re-add the tuple.

Error message specific to PRI Location Indicators

The following error message appears on the MAP display if the protocol variant in table LTDEF is non-Northern Telecom North America (NTNA) or non-Northern Telecom National ISDN (NTNI), and its corresponding LTID attempts to map to a common language location identifier (CLLI) whose location datafill in table TRKSGRP is LOC_MAP.

```
LOCATION LOC_MAP is only supported for NTNA and NTNI protocol
variants. Change the protocol variant in table LTDEF.
```

The following error message appears on the MAP display if operating company personnel attempt to delete a tuple that table AINPRI references.

```
*** Delete the AINPRI entry before deleting LTMAP ***
```

The following error message appears if an attempt to MAP an NI-2 LTID to a CLLI datafilled as user side in Table TRKSGRP (subfield IFCLASS).

```
*** User IFCLASS is not supported on NIPRI ***
```

The following error message appears on the MAP display if a B2-channel is assigned to the last card in an integrated services line card carrier (ISLCC) and it is an ISDN line.

```
Only the B1-channel can be assigned on the last card in the line
card carrier.
```

The following error message appears on the MAP display if a 2B non-initializing terminal (NIT) or fully initializing terminal (FIT) is assigned to an ISDN interface while the NI000050_SOC_state = IDLE.

```
ERROR: 2B terminals cannot be assigned to an ISDN interface.
Option NI000050 must be turned ON.
```

For North American offices, the following error message appears on the MAP display if a 1B NIT is assigned to an ISDN interface while the NI000050_SOC_state = IDLE.

```
ERROR: Default terminals cannot be assigned to an ISDN
interface. Option NI000050 must be turned ON.
```

LTMAP (continued)

ATTENTION

ILDR is first available for remote switching center SONET (RSC-S) and remote switching center (RSC) configurations in the NA007 release and the XPM08 stream. ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008 release and the XPM81 stream.

The following error message appears on the MAP display if an attempt is made to define a DCHCHNL option for an ILDR terminal.

```
ERROR: Dchchnl option not valid for terminals on an ILD.
```

The following error message appears on the MAP display if the LTID is a B-type terminal (a B access privilege is defined for this LTID in table LTDEF). The LTID cannot be used for packet switching.

```
ERROR: Ildchnl option not allowed for a B type terminal.
```

The following error message appears on the MAP display if the LTID is a D-type terminal (a D access privilege is defined for this LTID in table LTDEF). An ILDCHNL option must be defined.

```
ERROR: Must specify ildchnl option for a D type terminal.
```

The following error message appears on the MAP display if the LTID is a PB-type terminal (a PB access privilege is defined for this LTID in table LTDEF). The LTID cannot be used for D-packet switching, only for B-packet switching.

```
ERROR: Ildchnl option not allowed for a PB type terminal.
```

The following error message appears on the MAP display if the LTID is a BD-type terminal (a BD access privilege is defined for this LTID in table LTDEF). An ILDCHNL option must be defined.

```
ERROR: Must specify ildchnl option for a BD type terminal.
```

The following error message appears on the MAP display if the ILDCHNL option has been assigned to a non-ILDR terminal.

```
ERROR: Ildchnl option valid only for terminals on an ILD.
```

The following error message appears on the MAP display if the LTID is a 2B-type terminal (a 2B access privilege is defined for this LTID in table LTDEF). The LTID cannot be attached to the ILD LEN.

```
ERROR: A 2B type terminal cannot be attached to the ILD LEN.
```

Feature ISDN Packet Single DN (AF6782) provides the following warnings when you datafill an LTID that is assigned option 2BD in table LTDEF. The 2BD option is assigned to NI-2 integrated terminals (IT). Feature ISDN Packet Single DN is controlled by SOC NI000051.

The following error message appears if option TEI is assigned to an LTID that was datafilled as 2BD in table LTDEF.

```
ERROR:TEI option not allowed for a 2BD type terminal.
```

The following error message appears if option PHI is assigned to an LTID that was datafilled as 2BD in table LTDEF.

```
ERROR:PHI option not allowed for a 2BD type terminal.
```

The following error message appears if option BCH is assigned to an LTID that was datafilled as 2BD in table LTDEF.

```
ERROR:BCH option not allowed for a 2BD type terminal.
```

The following error message appears if option DCHCHNL is not assigned to an LTID that was datafilled as 2BD in table LTDEF.

```
ERROR: MUST SPECIFY DCHCHNL FOR A 2BD TYPE TERMINAL.
```

The following error message appears if the NI000051_SOC_state = IDLE and the SERVORD SLT ATT command or the ADD or CHANGE command is used to attach an NI-2 interface to an ISDN terminal.

```
Terminal cannot be assigned to an ISDN interface. Option
NI000051 must be turned ON.
```

Error message specific to the PRI -PRI Over Multiple XPMs feature

An error message appears under the following conditions:

If a distributed PRI is mapped in table LTMAP and the protocol variant is other than NTNI the following error message is displayed:

```
Error: <CLLI> is a Distributed PRI Interface. Distributed PRI
is supported only for NTNI protocol variant
```

LTMAP (continued)

Operating company personnel can take one of the following actions:

- Change the protocol variant to NTNI in table LTDEF.
- If a protocol variant other than NTNI is required to be datafilled, delete or change the B-channels (datafilled in table TRKMEM) and assign all of the B-channels for that trunk group to the same XPM as the D-channel. (Use the CLLIREF command to get all the related TRKMEM tuples.)

Error message specific to the Echo Station X.25 Loopback Testing feature

The following error message appears if you try to assign more than five echo station LTIDS to one XSG.

```
Error: Maximum 5 ECHO STATION LTID CAN BE ASSIGNED TO A XSG.
```

The following error message appears if you try to map an echo station LTID to a line equipment number (LEN).

```
Error: ECHO STATION LTID CANNOT BE MAPPED TO A LEN.
```

The following error message appears if you try to map a non-echo station LTID to an XSG. Or the user tried to map an LTID that is provisioned only in table LTDEF to an XSG in table LTMAP.

```
Error: NON ECHO STATION LTID CANNOT BE MAPPED TO XSG.
```

The following error message appears if you try to map an echo station LTID to a common language location identifier (CLLI) instead of an XSG.

```
Error: ECHO STATION LTID CANNOT BE MAPPED TO A CLLI.
```

The following error message appears if you try to datafill options for an echo station LTID.

```
Error: NO OPTIONS ARE ALLOWED TO BE PROVISIONED TO AN ECHO
STATION LTID.
```

The following error message appears if you try to map an XSG defined in table XSGDEF without an XLIU assignment to an echo station LTID.

```
Error: XSG IS NOT DEFINED IN TABLE XSGDEF.
```

The following error message appears if you try to change the XSG assigned to an echo station LTID to an XSG without an XLIU assignment in table XSGDEF.

```
Error: NO XLIU IS ASSIGNED TO THE XSG DEFINED IN TABLE XSGDEF.
```

The following error message appears if you try to use the table editor CHA command to change the XSG number assigned to an echo station LTID.

```
Error: CHANGE OPERATION IS NOT ALLOWED FOR ECHO STATION LTID.
DELETE THE TUPLE AND ADD NEW TUPLE.
```

The following error message appears if you try to add an echo station LTID to table LTMAP when no corresponding DN tuple existed in table DNCTINFO.

```
Error: Table DNCTINFO is not datafilled for this LTID.
```

The following error message appears if you try to add an echo station LTID in table LTMAP when no corresponding DN tuple existed in table DNCHNL. Message occurs even if an entry exists in table DNCTINFO for the echo station DN.

```
Error: Table DNCHNL is not datafilled for this LTID.
```

Error messages specific to the On-demand B-channel X.25 Packet Mode Data—Provisioning, Data Distribution Manager, and XLIU feature

The following error messages display and the DMS operating system rejects the table LTMAP operation:

- If the user attempts to datafill an XSG not defined in table XSGDEF for an ODB LTID, the following error message displays:

  ```
  XSG xx IS NOT DATAFILLED IN TABLE XSGDEF
  ```

- If the user attempts to datafill an XSG defined in table XSGDEF without an XLIU assignment for an ODB LTID, the following error message displays:

  ```
  NO XLIU IS ASSIGNED TO THE XSG DEFINED IN TABLE XSGDEF
  ```

- If the user attempts to datafill an XSG that has no free channels for an ODB LTID, the following error message displays:

  ```
  NO FREE CHANNELS IN THIS XSG
  ```

LTMAP (continued)

- If the user attempts to datafill an XSG for an ODB LTID and the creation of the channel object fails, the following error message displays:

  ```
  FAILED TO CREATE CHANNEL
  ```

- If the user attempts to datafill an XSG for an ODB LTID and the association of the link and channel objects fails, the following error message displays:

  ```
  COULD NOT ASSOCIATE CHANNEL AND LINK OBJECTS
  ```

Table history

NA014

Added option XSG to the field OPTION description for table LTMAP for feature 59013267, On-demand B-channel X.25 Packet Mode Data— Provisioning, Data Distribution Manager, and XLIU for NI-2 BRI integrated terminals.

Added error messages for feature 59013267, On-demand B-channel X.25– Packet Mode Data— Provisioning, Data Distribution Manager, and XLIU.

NA012

Added error messages and MAPTYPE option XSG for feature 59006435, Echo Station X.25 Loopback Testing.

Added error message for the PRI-PRI Over Multiple XPMs feature.

Added note to CLLI. If the CLLI mapped has the IP option provisioned in table TRKGRP, then the variant of the LTID must be NI2.

NA011

Added note to the supplementary information about an error message that generates when trying to map a non-NTNA or non-NTNI protocol variant and its corresponding LTID to a CLLI whose location datafill is LOC_MAP.

Added option MEM to the field OPTION description for table LTMAP for X.25 packet on PRI.

Added notes to the supplementary information about the error messages that display for the PRI with Semipermanent Packet feature. This information includes the reason the error messages display and the corrective action.

NA010

Added note to the supplementary information about error message that is generated when attempting to delete a tuple referenced by table AINPRI.

NA009

Added note that option TEI is disallowed for packet-only and integrated NITs with dynamic TEI.

NA008

Added warnings to restrict datafill for field OPTION = DCHCHNL to support integrated terminals (IT) with 2BD feature (AF6782).

Added warning to restrict assignment of a terminal to an ISDN interface without option NI000051.

NA007

New restrictions have been added as a result of the introduction of the ILDR.

EUR006

Added enhancements to the TEI and DCHCHNL options within the OPTION field describing ISDN V5.2 B-channel control. This option is also valid for all V5.2 ISDN lines. The access network (AN) has the capability to define a B-channel as a permanent line (which is defined as a connection from the AN, bypassing the local exchange [LE]) so that the global peripheral platform (GPP) does not have access to this B-channel. The B1/B2 parameter specifies on which B-channel the call is set up.

LTPAUX

Table name

Line Test Position Auxiliary Commands Table

Functional description

Table LTPAUX contains entries for user-defined levels. Operating companies can create user-defined sublevels containing a subset of commands from other existing sublevels. Available commands in these sublevels can be displayed or hidden in the command menu. Each user-defined LTP sublevel is independent.

Limitations

User-defined levels are only implemented as sublevels to the LTP, not as sublevels to other existing default or user-defined sublevels. Command names in the user-defined levels must be unique. Two commands cannot have the same command string.

Datafill sequence and implications

The following tables must be datafilled before table LTPAUX:

- LNINV
- LTPDEF

Table size

0 to 512 tuples

A maximum of 16 user-defined sublevels can be defined by the operating companies. A maximum of 32 commands can be defined for each sublevel. Because this table is datafilled at the user's discretion, the number of tuples can range between 0 and 512 tuples.

Datafill

The following table lists datafill for table LTPAUX.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
KEYAUX		see subfields	*Auxiliary key* The KEYAUX field contains the key value that identifies each tuple in table LTPAUX. It consists of subfields SUBLEVEL and CMDINDEX.
	SUBLEVEL	LTPDATA LTPISDN LTPLTA or LTPMAN	*Sublevel name* Enter the default sublevel name that identifies a MAP maintenance and administration position) LTP (line test position) sublevel in the switch. Enter LTPDATA (LTP data), LTPLTA (LTP line test access), LTPISDN (LTP ISDN), or LTPMAN (LTP manual test).
	CMDINDEX	0 to 31	*Command index* Enter a number to uniquely identify each tuple.
COMMAND		see subfield	*Command* This field identifies command strings. It consists of subfield CMDSRC and refinement CMD.
	CMDSRC	LTPDATA LTPISDN LTPLTA or LTPMAN	*Command source* Enter the sublevel name identified in subfield SUBLEVEL. Field CMDSRC is used as a flag to assign valid commands into the table. This field and field SUBLEVEL must contain the same information.
	CMD	alphanumeric (up to 8 characters)	*Command* Enter the command identifier for a particular sublevel. If the entry in field CMDSRC is LTPDATA, valid entries are as follows: BERT (bit error rate test) BERTIME (duration of a BERT) BPVO (bipolar violations) CONNECT (connect) EQUIP (equipment) LOOPBK (loopback) QL1PERF (layer 1 performance monitoring from a two binary one quaternary [2B1Q] line card)

LTPAUX (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	CMD (continued)		RLAYER2 (use QLAYER command in the LTPISDN menu) SUSTATE (loop status) If the entry in field CMDSRC is LTPISDN, valid entries are as follows: ALM (ability to detect loss of signal) BCHCON (Bb channel continuity test) COLDST (cold start on ISDN line card) DCHCON (D-channel handler continuity test) DCSIG (DC signature measurement) DET (balance loss measurement [BLM] test to detect counts) ILOSS (insertion loss measurement) IMP (impulse noise measurement) L1BLMALM (modify reports of posted loop to various anomalous layer 1 conditions) L1THRSH (layer 1 performance monitoring threshold information on posted ISDN 2B1Q loop) LTLOOPBK (logical terminal loopback) NSE (wideband noise measurement) QLAYER (query layer 2 peg counts) QLOOP (query posted ISDN line) QPHINFO (query terminating directory numbers [DN] for posted DN served by a DMS package handler) RLAYER (reset transmission peg counts of D-channel for posted ISDN line) SCUR (sealing current measurement test on ISDN line card) SUSTATE (status of ISDN U-line card [ISLC], network termination 1 [NT1], or terminal endpoint identifier [TEI]) TEI (terminal endpoint identifier management)

LTPAUX (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	CMD (continued)		TEST (layer 1 behavior tests on a 2B1Q loop) THR (BLM test on thresholding of counts) TSTSGNL (96-kHz test tone in the S/T-chip) If the entry in subfield CMDSRC is LTPLTA, valid entries are as follows: BALNET (balance network test) CAP (capacitance measurement) COIN (send volt pulse to operate coin collect or coin return mechanism in the coin station) DGTTST (test Digitone pad or dial) LNTST (capacitance, resistance, and voltage tests) LTA (connect line test access [LTA] to or release LTA from a line card) MONLTA (connect headset circuit to monitor line) ORIG (configure loop side of line circuit) RES (resistance measurement) RING (place ringing voltage on loop) TALKLTA (connect talk circuit and talk battery to subscriber) VAC (ac voltage) VDC (dc voltage) If the entry in subfield CMDSRC is LTPMAN, valid entries are as follows: BAL (balance network test) CKTTST (send test messages) DCHCON (D-channel handler continuity test) JACK (jack-ended trunk) LOSS (measure insertion loss of test tone)

LTPAUX (continued)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	CMD (continued)		NOISE (measure C-message weighted circuit noise) RLSCONN (release connected test equipment) SETLPBK (setup specified loopback on remote carrier urban [RCU] line) SUSTATE (subscriber state: status of electronic business set [EBS] connected business set line) TONEGEN (transmit tone) TSTDTMF (test dual tone multifrequency transmission) TSTMTR (test metering trunk) TSTRING (test ringing relay in line card)
POSITION		0 to 31	*Command position* Enter the menu position occupied by this command. Only menu positions 0 to 18 can be displayed, with the following exceptions that cannot be altered: • 0: Quit • 1: Undefined • 2: Post • 10: Hold • 11: Next Positions 19 to 31 hide the command string.

Datafill example

The following example shows sample datafill for table LTPAUX.

The example shows command NOISE assigned to menu position 6 at the LTPMAN sublevel of the MAP terminal. The LTPMAN tuple is identified as index 0.

MAP display example for table LTPAUX

```
     KEYAUX          COMMAND POSITION
_____________________________________________________

    KURT  0   LTPMAN   NOISE        6
```

Table history

BCS36

Entry TSTDMTF was added to field CMD for sublevel LTPMAN. All entries in field CMD were verified.

LTPDEF

Table name

Line Test Position Default Commands Table

Functional description

Table LTPDEF contains entries for the following maintenance sublevels of the LNS (lines) subsystem at a MAP (maintenance and administration position) terminal:

- LTPMAN
- LTPLTA
- LTPDATA
- LTPISDN

Table LTPDEF allows operating companies to customize existing line test position (LTP) default sublevels on the MAP display. Commands can be re-organized within the sublevels (commands can be moved or hidden—not displayed—in different menu positions).

In this table, tuples identify the displayed and available commands in each LTP sublevel and the sublevel name that is displayed on the MAP terminal.

Limitations

Adding and deleting tuples in table LTPDEF is not allowed. Changing the tuples in table LTPDEF to hide a command is allowed. Commands are hidden by assigning the command to PF key 19 or above in the command menu. Each MAP terminal can only display a maximum of 17 commands. Tuples are replaced during dump and restore.

In data modification procedures (DMOPRO), the user creating the update file for table LTPDEF must ensure that a tuple change request does not duplicate an established menu position. If the menu position is not unique, the tuple change request is rejected.

Default commands names are fixed and cannot be changed by the operating companies.

Commands in existing sublevels can only be hidden if they are not required. They are still available by typing the command string name at the MAP terminal. Existing default commands cannot be deleted.

Datafill sequence and implications

Table LNINV must be datafilled before table LTPDEF.

Table size

22 to 256 tuples

This table can only be datafilled with default tuples after initial program load (IPL). Restart code exists to datafill these tuples if the table is empty. Currently, minimum table size is determined by the combined number of tuples for sublevels LTPLTA and LTPMAN (22 tuples). LTPDATA and LTPISDN are optional sublevels. The maximum table size for table LTPDEF (512 tuples) is based on a maximum of eight default sublevels, each of which has a maximum of 64 tuples.

Datafill

The following table lists datafill for table LTPDEF.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
KEYDEF		see subfields	*Key default* This field is the key to the table and consists of subfields SUBLEVEL and CMDINDEX.
	SUBLEVEL	LTPDATA LTPISDN LTPLTA or LTPMAN	*Sublevel name* Enter the default sublevel name that identifies a MAP maintenance and administration position) LTP (line test position) sublevel in the switch. Enter LTPDATA (LTP data), LTPLTA (LTP line test access), LTPISDN (LTP ISDN), or LTPMAN (LTP manual test).
	CMDINDEX	0 to 63	*Command index* Enter a unique value to identify each tuple.
COMMAND		see subfield	*Command name* This field identifies command strings and consists of subfield CMDSRC and refinement CMD.
	CMDSRC	LTPDATA LTPISDN LTPLTA or LTPMAN	*Command source* Enter the sublevel name identified in subfield SUBLEVEL. Field CMDSRC is used as a flag to assign valid commands into the table. This field and field SUBLEVEL must contain the same information.

LTPDEF (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	CMD	alphanumeric (up to 8 characters)	*Command* Enter the command identifier for a particular sublevel. If the entry in field CMDSRC is LTPDATA, valid entries are: BERT (bit error rate test) BERTIME (duration of a BERT) BPVO (bipolar violations) CONNECT (connect) EQUIP (equipment) LOOPBK (loopback) QL1PERF (layer 1 performance monitoring from a two binary one quaternary [2B1Q] line card) QLAYER2 (use QLAYER command in the LTPISDN menu) RLAYER2 (use QLAYER command in the LTPISDN menu) SUSTATE (loop status) If the entry in field CMDSRC is LTPISDN, valid entries are: ALM (ability to detect loss of signal) BCHCON (Bb channel continuity test) COLDST (cold start on ISDN line card) DCHCON (D-channel handler continuity test) DCSIG (DC signature measurement) DET (balance loss measurement [BLM] test to detect counts) ILOSS (insertion loss measurement)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
			IMP (impulse noise measurement) L1BLMALM (modify reports of posted loop to various anomalous layer 1 conditions) L1THRSH (layer 1 performance monitoring threshold information on posted ISDN 2B1Q loop) L2LOGCTL (layer 2 log control) L3LOGCTL (layer 3 log control) LTLOOPBK (logical terminal loopback) NSE (wideband noise measurement) QLAYER (query layer 2 peg counts) QLOOP (query posted ISDN line) QPHINFO (query terminating directory numbers [DN] for posted DN served by a DMS package handler) RLAYER (reset transmission peg counts of D-channel for posted ISDN line) SCUR (sealing current measurement test on ISDN line card) SUSTATE (status of ISDN U-line card [ISLC], network termination 1 [NT1], or terminal endpoint identifier [TEI]) TEI (terminal endpoint identifier management) TERMCHK (terminal check) TEST (layer 1 behavior tests on a 2B1Q loop) THR (BLM test on thresholding of counts) TSTSGNL (96-kHz test tone in the S/T-chip) If the entry in subfield CMDSRC is LTPLTA, valid entries are:

LTPDEF (continued)

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
			BALNET (balance network test) CAP (capacitance measurement) COIN (send volt pulse to operate coin collect or coin return mechanism in the coin station) DGTTST (test Digitone pad or dial) LNTST (capacitance, resistance, and voltage tests) LTA (connect line test access [LTA] to or release LTA from a line card) MONLTA (connect headset circuit to monitor line) ORIG (configure loop side of line circuit) RES (resistance measurement) RING (place ringing voltage on loop) TALKLTA (connect talk circuit and talk battery to subscriber) VAC (ac voltage) VDC (dc voltage) If the entry in subfield CMDSRC is LTPMAN, valid entries are: BAL (balance network test) CKTTST (send test messages) DCHCON (D-channel handler continuity test) JACK (jack-ended trunk) LOSS (measure insertion loss of test tone) NOISE (measure C-message weighted circuit noise) RLSCONN (release connected test equipment)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
			SETLPBK (setup specified loopback on remote carrier urban [RCU] line) SUSTATE (subscriber state: status of electronic business set [EBS] connected business set line) TONEGEN (transmit tone) TSTDTMF (test dual tone multifrequency transmission) TSTMTR (test metering trunk) TSTRING (test ringing relay in line card)
POSITION		0 to 63	*Command position* Enter the menu position occupied by this command. Only menu positions 0 to 18 can be displayed, with the following exceptions that cannot be altered: • 0: Quit • 1: Undefined • 2: Post • 10: Hold • 11: Next Positions 19 to 31 hide the command string.

Datafill example

The following example shows sample datafill for table LTPDEF.

The first tuple in the example shows command TSTMTR assigned to menu position 3 at the LTPMAN sublevel of the MAP terminal. The LTPMAN tuple is identified as index 3.

The second tuple in the example shows command LOSS assigned to menu position 4 at the LTPMAN sublevel of the MAP terminal. The LTPMAN tuple is identified as index 4.

LTPDEF (end)

MAP display example for table LTPDEF

```
    KEYDEF          COMMAND POSITION
_____________________________________________________

LTPMAN  3   LTPMAN  TSTMTR        3
LTPMAN  4   LTPMAN    LOSS        4
```

Table history

NA009

The following changes were made to table LTPDEF:

- new tuple entry added to accommodate TERMCHK command
- LTPDEF tuples for L2LOGCTL and L3LOGCTL commands moved to new nonmenu LTPISDN MAP display index
- range of values for CMDINDEX and POSITION fields expanded from 0-31 to 0-63

BCS36

Entry TSTDMTF was added to field CMD for sublevel LTPMAN. All entries in field CMD were verified.

MCCSNBEC

Table name

Mechanized Calling Card Service Non-Bell Exchange Carrier Table

Functional description

In central office switches that provide operator services for non-Bell exchange carriers (NBEC), the thank-you announcement for the first Mechanized Calling Card Service (MCCS) call is the only announcement that can be customized by the operating company since the announcement is used only on the initial subscriber call.

Table MCCSNBEC gives operating companies the option to customize the initial thank-you message by using an index to identify each specific non-Bell carrier. This index allows each non-Bell carrier to have a unique announcement when the non-Bell MCCS is used by a subscriber.

Restrictions

If table MCCSNBEC does not have an index for a particular non-Bell carrier, the default initial thank-you message is given using the MCCS-16 entry in table DRMUSERS.

Datafill sequence and implications

The following tables must be datafilled before table MCCSNBEC:

- ANNS (CLLI for the announcement)
- DRMUSERS

Table size

0 to 40 tuples

Datafill

The following table lists datafill for table MCCSNBEC.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
NBECCODE		0000 to 9999 (4 digits)	Non-Bell exchange carrier code. Enter number for a non-Bell carrier.
DRMINDX		see subfields	Digital recorded announcement index. This field is consists of subfields CLLI and ANNNUM.

MCCSNBEC (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	CLLI	alphanumeric (1 to 16 characters)	Common language location identifier. Enter the common language location identifier (CLLI) for the mechanized calling card service (MCCS) announcement. The CLLI must be datafilled in table ANNS.
	ANNUM	1 to 255	Announcement number. Enter the index number for the MCCS announcement in table DRMUSERS.

Datafill example

The following example shows sample datafill for table MCCSNBEC.

MAP display example for table MCCSNBEC

```
NBECCODE          DRMINDX
_____________________________________________________________
1386        MCCSTOPS   27
5274        MCCSTOPS   60
```

Table history

BCS36

Lower limit of field NBECCODE was changed from 1000 to 0000.

MCCSOST

Table name

TOPS Mechanized Calling Card Service Originating Station Treat Table

Functional description

Table MCCSOST contains one entry for each incoming or two-way Traffic Operator Position System (TOPS) trunk group in an office. The first part of the entry applies to calls that originated on coin phones while the second part applies to calls that originated on private phones.

In each of the above two parts, one of the following three cases needs to be specified:

No MCCS service

No mechanized calling card service (MCCS) or further action is needed since all 0+ calls route to an operator.

MCCS service

The actual originating station treatment (OST) that can be either tone or tone plus announcement, needs to be added.

BVC lookup

Query of the billing validation centre (BVC) using common channel interoffice signaling (CCIS) direct signaling must be done in order to determine if a call has MCCS service. If the BVC query fails, a default OST needs to be indicated by the operating company (that is, no MCCS, tone or tone plus announcement).

Datafill sequence and implications

The following tables must be datafilled after table MCCSOST.

- TRKGRP
- CLLI

Table size

Up to 8191 entries

MCCSOST (continued)

Datafill

The following table lists datafill for table MCCSOST.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY		see subfield	*Group key* This field consists of subfield CLLI.
	CLLI	alphanumeric (1 to 16 characters)	*Common language location identifier* Enter a valid incoming or two-way Traffic Operator Position System (TOPS) trunk group predefined in tables CLLI and TRKGRP.
PUBLIC		see subfield	*Public* This field consists of subfield STAT.
	STAT	BVCLOOK, NOSERV,or SERV	*Public status* Enter BVCLOOK for billing validation centre (BVC) lookup and datafill refinement OST. Enter NOSERV for no MCCS and datafill no refinements. Go to field PRIVATE. Enter SERV for mechanized calling card service (MCCS) and datafill refinement OST.
OST		NOMCCS, TONE, or TONEANN	*Pulblic originating station treatment* If the entry in subfield STAT is BVCLOOK or SERV, datafill this refinement. If the entry in subfield STAT is BVCLOOK, enter NOMCCS (no MCCS), TONE (tone), or TONEANN (tone announcement). If the entry in subfield STAT is SERV, enter TONE or TONEANN.
PRIVATE		see subfield	*Private* This field consists of subfield STAT.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
STAT		BVCLOOK NOSERV or SERV	*Private status* Enter BVCLOOK and datafill refinement OST. Enter NOSERV and datafill no refinements. Enter SERV and datafill refinement OST.
OST		NOMCCS TONE TONEANN	*Private originating station treatment* If the entry in subfield STAT is BVCLOOK or SERV, datafill this refinement. If the entry in subfield STAT is BVCLOOK, enter NOMCCS, TONE, or TONEANN. If the entry in subfield STAT is SERV, enter TONE or TONEANN.

Datafill example

An example of datafill for table MCCSOST is shown below.

The example consists of assignments for three incoming TOPS trunk groups:

The trunk group OCALMCCS entry has a status of MCCS service for all calls that originate on public and private phones for this particular trunk group, and therefore identical OST applies on both sides (TONE).

The trunk group ORLDPRMCCS entry has a status of no MCCS for calls that originate on public phones and MCCS for private phones, indicating that the two statuses are independent of each other and therefore different OST applies on either side (TONEANN).

The trunk group TAMPBVMCCS entry has a status of MCCS for public phones and BVC query for private phones and a default OST applies if the BVC query fails (NOMCCS).

MCCSOST (end)

MAP display example for table MCCSOST

```
          GRPKEY                PUBLIC
  PRIVATE
_____________________________________________________________
        OCALMCCS        SERV    TONE
SERV    TONE
      ORLDPRMCCS      NOSERV     –
SERV  TONEANN
      TAMPBVMCCS       SERV    TONE
BVCLOOK   NOMCCS
```

MDNGRP

Table name

Multiple Appearance Directory Number Group

Overview

The multiple appearance directory number (MADN) tables (tables MDNGRP and MDNMEM) contain information associated with each MADN group and for each member of a MADN group respectively.

These are change-only tables. Tuples cannot be added to or deleted from these tables. Each call appearance (CA) of a Call Appearance Call Handling (CACH) directory number (DN) appears as a separate tuple in table MDNGRP.

Note: For ISDN MADN groups only, the particular logical terminal (as defined in table LTDEF) to which the MADN directory number is assigned, must have the ISDN electronic key telephone service (EKTS) and dynamic terminal end-point identifier (DTEI) option.

Functional description

Table MDNGRP contains one tuple for each MADN group or MADN CACH CA that has at least one member datafilled. The tuple contains a list of options, attributes, or both assigned to the MADN group.

Use the Service Order System (SERVORD) to make changes to table MDNGRP. For more information on SERVORD, refer to the *SERVORD Reference Manual.*

If a system error occurs from data corruption, while processing table control commands with DN call type (DNCT), the following error message will be issued:

```
ERROR: FAILED TO READ FROM DNCT PROTECTED DATA.
```

The recommended action is to reissue the command.

If option MADN ring forward (MRF) is assigned to an MADN group in table MDNGRP, the following ring alerting options can be assigned to the individual appearances of the MADN in table MDNMEM:

Privacy release (PRL) is an option that applies to all single call arrangement(SCA), including call appearance call handling (CACH) lines with bridging capability and an initial privacy status of PRIVATE.

MDNGRP (continued)

The privacy (PRV) SCA or CACH lines with bridging capability and an initial privacy status of NONPRIVATE.

MADN group types CACH, EXB and SCA

The following information is required for MDNTYPEs extension bridging (EXB), SCA and CACH:

- The denial treatment type (DENTRMT) defines the type of audible treatment that is given to a member when the member is not successful in accessing the MADN line, when bridging is not allowed or is not possible.
- If the value in field DENTRMT is TONE, reorder tone is heard for a period of 5 s.
- If the value in field DENTRMT is SILENCE, there is no sound for an indefinite period of time.
- Bridging allowed (BRIDGING) indicates if the MADN group has bridging capability.
- Conference bridge size (CONFSIZE) expresses the maximum conference bridge size in terms of parties (including the external party and the member who originally answered the call). For example, a conference bridge size of 6 implies that a maximum of four idle members can bridge into the call.
- All MADN lines with bridging capability, datafilled with a conference bridge size of 3, can potentially make use of one three-port conference circuit for every call.
- All MADN lines with bridging capability, datafilled with a conference bridge size of 4 or more, can potentially make use of at least one six-port conference circuit for every call.
- Bridge tone required (BRGTONE) indicates whether a tone is heard by the external party and all active MADN members if a new member bridges into the call.
- Initial privacy status (INITSTAT) indicates whether a call is normally private.
- A value of PRIVATE implies that all SCA and CACH calls are initially private (normal SCA functionality). Bridging cannot occur unless an active MADN member explicitly releases privacy on the call (using the PRL option).
- A value of NONPRIVATE implies that all SCA and CACH calls are initially not private. Bridging can occur any time unless an active MADN member explicitly enforces privacy on the call (using the PRV option).
- Privacy release mode (PRLMODE) is only applicable to groups whose initial privacy status is PRIVATE.

- The MANUAL mode allows only one member to bridge into the call after privacy has been explicitly released. Privacy is immediately reinstated as soon as a member bridges into the call. Privacy must be explicitly released every time a new member is added to the call. This is the usual operating mode for privacy release.
- The AUTO mode allows any number of members to bridge into the call after privacy has been explicitly released. Privacy is restored by user control only. Privacy is released if a conference bridge of arbitrary size is established.

The following table shows the fields that are automatically set to the values shown if the MDNTYPE in tables IBNLINES or KSETLINE is set to EXB, CACH, or SCA.

EXB or SCA automatic datafill

	MDNTYPE		
Field name	**SCA**	**CACH**	**EXB**
DENTRMT	SILENCE	SILENCE	TONE
BRIDGING	Y (yes)	Y (yes)	Y (yes)
CONFSIZE	30	30	3
BRGTONE	N (no)	N (no)	Y (yes)
INISTAT	PRIVATE	PRIVATE	NONPRIVATE
PRLMODE	MANUAL	MANUAL	not applicable

Datafill sequence and implications

The following table must be datafilled before table MDNGRP:

- IBNLINES
- KSETLINE

Table MDNGRP is datafilled internally when a tuple is added to tables IBNLINES or KESTLINE.

A tuple is automatically added to table MDNGRP by the DMS switch if an entry is made in tables IBNLINES or KSETLINE with format MDN, or if a new directory number (DN) of type MDN is created by SERVORD, if an entry for that MADN group does not already exist.

MDNGRP (continued)

If all members of a MADN group are deleted from tables IBNLINES and KSETLINE, the corresponding entries in tables MDNGRP and MDNMEM are deleted automatically.

Default group attribute settings that are functionally identical to the Privacy Release feature, are automatically entered in table MDNGRP for every SCA group and for the first CACH PCA for a PN. Additional CA's will default to the value of the PCA.

Table size

Data store is segmented into areas of store based on the number of members in a MADN group. The smaller the size of the MADN groups, the larger the number of groups allowed. Up to 64,000 one- to two-member MADN groups can be allowed in the switch. Each CA is considered an individual MADN group.

Datafill

The following table lists datafill for table MDNGRP.

Field descriptions (Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
MDNKEY		see subfields	MADN key This field consists of subfields AREACODE, OFCCODE, STNCODE, and CA is equal to fields SNPA and DN in tables IBNLINES or KSETLINE.
	AREACODE	0 to 9 (up to 7 digits)	Area code This field is equal to the entry in field SNPA in table IBNLINES or KSETLINE.
	OFCCODE	0 to 9 up to 7 digits)	Office code This field is equal to the first part of the entry in field DN in table IBNLINES or KSETLINE.
	STNCODE	0 to 9 (up to 8 digits)	Station code This field is equal to the last part of the entry in field DN in table IBNLINES or KSETLINE.
	CA	0 to 16	Call appearance This field contains the CA group number. The default value is 0 for non-CACH and 1 for CACH.

Field descriptions (Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
GRPSIZE		1 to 32	Group size This field is equal to the number of members assigned in table IBNLINES or KSETLINE to the multiple appearance directory number (MADN) group. This field cannot be changed.
RESULT		see subfields	Result This field consists of subfield MDNTYPE, DENTRMT, CARES, PCA, BRIDGING, CONFSIZE, BRGTONE, INITSTAT, and PRLMODE.
	MDNTYPE	EXB or SCA, MCA,CACH	MADN group type Enter the type of call arrangement. Enter EXB (extension bridging) or SCA (single call arrangement) and datafill refinements DENTRMT and BRIDGING. Enter MCA (multiple call arrangement) and datafill no refinements. Go to field OPTLIST. Enter CACH (call appearance call handling) and datafill DENTRMT. This field is equal to field MDNTYPE in table KSETLINE.
	DENTRMT	SILENCE or TONE	Denial treatment If the entry in subfield MDNTYPE is EXB or SCA, datafill this refinement. This refinement specifies whether a tone is heard by a member who is not allowed to bridge into a call. If a tone is allowed, enter TONE. If a tone is not allowed, enter SILENCE.
	CARES	DOR, DTM, DTMEPI, NULL	Call Appearance Reservation type for the Call Appearance Group. This field can be assigned the following values: • DOR-Terminating Only • DTM-Originating Only • DTMEPI-Originating and Priority Incoming • NULL-Non-reserved (default)

MDNGRP (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	PCA	Y, N	Primary Call Appearance Enter Y to designate that this is the primary call appearance for the DN.
	BRIDGING	Y or N	Bridging allowed If the entry in subfield MDNTYPE is EXB or SCA, datafill this refinement. Enter Y (yes) if the MADN SCA group has bridging capability and datafill refinements CONFSIZE, BRGTONE, and INITSTAT. Otherwise, enter N (no) and go to field OPTLIST.
	CONFSIZE	3 to 30	Conference bridge size If the entry in refinement BRIDGING is Y, datafill this refinement. This refinement specifies the maximum conference bridge size in terms of parties (including the external party and the member who answered the call).
	BRGTONE	Y or N	Bridging tone If the entry in refinement BRIDGING is Y, datafill this refinement. This refinement specifies whether a tone is heard by the external party and all active MADN members if a new member bridges into the call. To hear a tone enter Y. Otherwise, enter N and go to field OPTLIST.
	INITSTAT	PRIVATE or NON-PRIVATE	Initial privacy status If the entry in refinement BRIDGING is Y, datafill this refinement. If the entry in field MDNTYPE is EXB, enter NONPRIVATE. No refinements are datafilled. Go to field OPTLIST. If the entry in field MDNTYPE is SCA, enter PRIVATE. Datafill refinement PRLMODE.

Field descriptions (Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	PRLMODE	MANUAL or AUTO	Privacy release mode If the entry in refinement INITSTAT is PRIVATE, datafill this refinement. This refinement specifies the privacy release mode. The MANUAL mode allows only one member to bridge into the call after privacy has been explicitly released. The AUTO mode allows any members to bridge into the call after privacy is explicitly released.
OPTLIST		see subfields	Option list This field is a vector of up to four options and their refinements. Each option and each refinement must be separated from the next by a blank space. This field consists of subfield OPTION.
	OPTION	MRF,EHLD, MREL, MLAMP, or $	Option Enter the following options: • MRF for Meridian Digital Centrex MADN Hold and datafill refinements AUTO and MRFTIMER. • EHLD for ISDN Hold. This indicates that EKTS mode is in use. This mode emulates the Meridian Digital Centrex (MDC) implementation of MADN Hold. No further datafill is necessary. • MREL and MLAMP to provide take down functionality and lamp updates to the MADN group. No further datafill is required. The MREL and MLAMP values are only valid if assigned to MADN SCA groups (including CACH) with bridging. If bridging is removed from the MADN group, or if the group type changes, an error message appears and the tuple change is rejected. MLAMP cannot be assigned to CACH MADN groups due to BRAFS restrictions with this feature. Enter $ if no option is specified.

MDNGRP (continued)

Field descriptions (Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	AUTO	Y or N	Automatic If the entry in field OPTION is MRF and if HOLD is automatic, enter Y and datafill refinement MRFTRIMER. Otherwise, enter N for manual.
	MRFTIMER	0 to 60	MRF timer f the entry in refinement AUTO is Y, enter the time, in 1-s intervals, that incoming calls ring the members of the MADN group with ring type ABBR assigned in table MDNMEM, before forwarding ringing to the DELAY ring MADN members.

Datafill example

The following example shows sample datafill for table MDNGRP.

If an MADN SCA group with two members is created by tables IBNLINES or KSETLINE, the following entry is automatically added to table MDNGRP.

MAP display example for table MDNGRP

```
MDNKEY                GRPSIZE  RESULT                OPTLIST
_____________________________________________________________________

613    722   4396   1 2  CACH SILENCE NULL Y Y 30 N  PRIVATE MANUAL $
```

Use the CHF SERVORD command to modify the fields.

Table history

NA008

The following entries are added or changed for NA008:

- modified MDNKEY to include subfield CA
- added MDNTYPE CACH
- added RESULT field refinements CARES and PCA

- Added warning information for table control data corruption errors (feature AF6777).
- Added supplementary information; modification of MADN member attributes of CS ISDN terminals with DN sharing feature (AF6782).

BCS36

Added subfields AREACODE, OFCCODE, and STNCODE

Supplementary information

This section provides information on datafilling table MDNGRP for MADN ring forward.

MADN ring forward (MRF)

This feature provides increased flexibility in the ringing options available to SCA and CACH MADN.

The capability is provided for MADN SCA/CACH group appearances to ring on a delayed or abbreviated basis, for a total of four ringing options: always ring, never ring, ring from call termination until MRF activation (abbreviated), or ring after MRF activation (delayed).

The activation of this feature can be automatic or manual.

If the activation is automatic, a time must be datafilled. This is the time that the incoming calls ring the members of the MADN group with ring type ABBR assigned in table MDNMEM before forwarding ringing to the DELAY ring MADN members, unless ringing is forwarded manually by an electronic business set (EBS) user with an MRFM key.

Manual activation provides the capability for the EBS user to manually push the ringing for an incoming call to the appearances of the MADN designated for delayed ringing, by pressing a button on the EBS designated for the MRF Manual (MRFM) feature.

If a MADN group has MRF and Call Forward Don't Answer (CFD) features, the timers for those features must not be set to identical values. If the timers are set to the same value, the operation of the two features can appear erratic to the end users.

For example, if MRF is activated first, then the DELAY ringing members can get a very brief ring splash, truncated by subsequent CFD activation. Alternatively, if CFD is activated first, the DELAY ringing members never receive ringing.

MDNGRP (end)

The EBS Make Set Busy (MSB) feature, when active for a set, blocks any ringing of that EBS. Therefore, if MSB is active on an EBS, no calls terminating on the EBS receive ring alerting regardless of the ring option assigned to any MADN members on the set.

The MRF option cannot be deleted from table MDNGRP until all members have been assigned ring types of ALWAYS or NEVER.

The MRF option can only be added as an option to MADN groups of type SCA and CACH. It is not applicable to MADN groups of the extension bridging (EXB) type, nor to MADN multiple call arrangement (MCA) groups.

The MRF manual activation is supported only for key access, and therefore is not supported for a 500/2500 set even though it may give an appearance of a MADN group that has the MRF feature assigned.

Table MDNGRP will allow modification of MADN group attributes of a circuit switched (CS) ISDN terminal with DN shared CALLTYPE.

Note: For more information about DN CALLTYPE sharing, see subfield OPTION in table HUNTGRP and feature AF6782 in the Feature Description Manual.

MDNMEM

Table name

Multiple Appearance Directory Number Member Table

Functional description

Entries in table MDNMEM are added automatically after multiple appearance directory number (MADN) members are created in table IBNLINES or KSETLINE or using the Service Order System (SERVORD). For further information on SERVORD, refer to the *SERVORD Reference Manual.*

It is recommended that the operating company use SERVORD to make changes to table MDNMEM.

If a system error occurs from data corruption, while processing table control commands with DN call type (DNCT), the following error message will be issued:

```
ERROR: FAILED TO READ FROM DNCT PROTECTED DATA.
```

The recommended action is to reissue the command.

If option MADN ring forward (MRF) is assigned to an MADN group in table MDNGRP, the following ring alerting options can be assigned to the individual appearances of the MADN in table MDNMEM:

- **ALWAYS**

  The MADN appearance rings from the time the call completes to the MADN group until it is answered or abandoned.

- **NEVER**

  Calls completing on the MADN group never cause ring alerting for this appearance of the MADN.

- **ABBReviated**

  The MADN appearance rings from the time the call completes on the MADN group until it is answered or abandoned, or until option MRF takes effect either automatically or manually.

- **DELAYed**

  The MADN appearance begins ringing when option MRF takes effect on the incoming call.

If Y (yes) is entered into field RING in table IBNLINES or KSETLINE for a MADN member, the ringing type ALWAYS is automatically datafilled in field RING in table MDNMEM.

MDNMEM (continued)

If N (no) is entered into field RING in table IBNLINES or KSETLINE for a MADN member, the ringing type NEVER is automatically datafilled in field RING in table MDNMEM.

Option MRF cannot be deleted in table MDNGRP until all members have been assigned ring types of ALWAYS or NEVER.

Option MRF can also be added to electronic key telephone service (EKTS) users on ISDN functional terminals. This feature is functional as of BCS32. If a new EKTS group is created, all entries are automatically added to table MDMMEM. For an EKTS group with option MRF, the valid ringing values are ALWAYS, NEVER, ABBR, and DELAY.

Feature AF1274 (Secondary MADN Call Forwarding) can be assigned to secondary MADN members of a multiple call arrangement (MCA) or single call arrangement (SCA) MADN group.

Secondary MADN Call Forwarding (CFMDN)

A secondary MADN member with feature CFMDN can activate or deactivate feature Call Forward Universal (CFU), Call Forward Intergroup (CFI), or Call Forwarding Fix (CFF) on the whole MADN group by using feature access code only.

Feature CFMDN can be added to a secondary EKTS user, without the primary user having the CFMDN feature. The secondary user also has control of the activation and cancellation of the feature CFMDN for the secondary MADN.

If the primary member is served by an electronic business set (EBS), the primary set (including all the directory numbers [DN] on the set with Call Forwarding feature) is forwarded.

Feature CFMDN can be added to any secondary MADN member even if the primary member of the group does not have any kind of call forwarding. However the feature cannot be used unless the primary member has one of CFU, CFI, or CFF features.

If a secondary MADN member with feature CFMDN is changed to the primary member of the group, feature CFMDN is automatically deleted.

CFMDN cannot be deleted from a MADN secondary member with a SERVORD DEO command while that member is using call forward programming. CFMDN cannot be deleted from a MADN secondary member with a table control CHA command while that member is using call forward programming.

If the Call Forwarding feature is activated by a secondary MADN member, the call forwarding operation is the same as if it was forwarded by the primary member. The primary MADN member set (including all the DNs on the set in the call forward key list) is forwarded.

Ring splash and visual lamp indication of forwarding are provided only to the primary member of the MADN if applicable.

Note: All members of extension bridging (EXB) group can program the Call Forwarding feature even if feature CFMDN is unavailable. Adding the CFMDN feature to a secondary member of an EXB group is not blocked since it already has the capability.

Feature CFMDN only shows up on a QLEN of an EBS if feature CFMDN is assigned to the primary DN key set.

To eliminate duplicate messages sent from the central control complex (CCC) to the extended multiprocessor system (XMS)-based peripheral module (XPM), the order of basic rate interface functional sets (BRIFS) MADN members must be in the same sorted order as Meridian business sets (MBS) MADN members.

For BRIFS MADN call processing, a signaling control protocol (SCP) message is sent for each XPM and also for each ring or no-ring group that refers to all the MADN associate members in the group through MADN message bundling. The central control (CC) sends an SCP message with a list of terminal identifiers that corresponds to all the associate BRIFS MADN members in the group. The XPM unbundles this message and broadcasts the Q.931 messages to the appropriate BRIFS MADN associate members in the group according to the list of terminal identifiers sent by the CC.

For related information, refer to table MDNGRP.

Datafill sequence and implications

The following tables must be datafilled before table MDNMEM.

- IBNLINES
- KSETLINE
- MDNGRP

Table size

The size of table MDNMEM is always equal to the number of MADN members assigned in the switching unit.

MDNMEM (continued)

Datafill

The following table lists datafill for table MDNMEM.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
MDNKEY		see subfields	*Multiple appearance directory number key* This field consists of subfields LEN and KEY.
	LEN	see subfields	*Line equipment number* This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN" for a complete description of field LEN and associated subfields. For ISDN lines, field LEN consists of subfield LTID. For non-ISDN lines, field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.
	KEY	0 to 69	*Key* Enter a key number that is used as a feature key on the set. In the case of 500 or 2500 type sets 0 (zero) is used for key. This field is equal to field KEY in table KSETLINE.
DN		numeric (7 to 15 digits)	*Directory number* Enter a directory number (DN). This field is equal to field DN in table KSETLINE.
PRIMARY		Y or N	*Primary* Enter Y (yes) if the multiple appearance directory number (MADN) member is the primary member in the MADN group. Otherwise, enter N (no). This field is equal to field PRIMARY in table IBNLINES or KSETLINE.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
RING		ABBR ALWAYS DELAY or NEVER	*Ring* Enter the type of ringing on the set: • ABBR (abbreviated) • ALWAYS (always) • DELAY (delayed) • NEVER (never)
NAME		alphanumeric (1 to 15 characters or $)	*Name* Enter a unique name assigned to the MADN member. Initially this field has a value of $. Table MDNMEM must be changed by service order CHA in order to associate a name with the MADN member.
OPTION		CFMDN or $	*Option* Datafill up to four multiples of options. The only option currently available is CFMDN. Enter CFMDN (Secondary MADN Call Forwarding) if a secondary MADN member of an MCA or SCA MADN group is used to activate or deactivate the Call Forwarding feature. Enter $ for no options or the end of the option list.

Datafill example

The following example shows sample datafill for table MDNMEM.

MAP display example for table MDNMEM

```
               MEMKEY                DN PRIMARY   RING          NAME
                            OPTLIS
---------------------------------------------------------------------
HOST  00 1 02 03  5            9670000       Y ALWAYS             $
                           (CFMDN)$
```

MDNMEM (end)

Table history

NA008

The following entries are added or changed for NA008:

- Added warning information for table control data corruption errors feature AF6777.
- Added supplementary information; modification of MADN member attributes of CS ISDN terminals with DN sharing feature AF6782.

BCS35

The order of BRIF functional members was changed.

Supplementary information

Table MDNMEM will allow modification of MADN member attributes of a circuit switched (CS) ISDN terminal with DN shared CALLTYPE.

Note: For more information about DN CALLTYPE sharing, see subfield OPTION in table HUNTGRP and feature AF6782 in the Feature Description Manual.

MDSACTN

Table name

TOPS Message Delivery System Actions Table

Functional description

Table MDSACTN is referenced after a call has transitioned from the Automated Alternate Billing Service (AABS) voice service node (VSN) to the DMS, and the DMS has detected subscriber input.

Field ACTION contains the allowable subscriber actions. If one of these actions is taken, field NEWLANG determines which language the Queue Management System (QMS) uses in routing the call to the appropriate Message Delivery System (MDS) position. If a subscriber action is taken for which thre is no corresponding tuple in the table, the DMS ignores the action. If a tuple does not exist for a certain language, no subscriber action has any effect and the language is not changed.

The language specified in fields OLDLANG and NEWLANG must be datafilled in table TOPSLANG with field AUTOLANG set to Y.

For related information, refer to table MDSLANG.

Datafill sequence and implications

Table TOPSLANG must be datafilled before table MDSACTN

Table size

0 to 300 tuples

MDSACTN (continued)

Datafill

The following table lists datafill for table MDSACTN

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LANGACTN		see subfields	*Language action* This field is the key to the table and consists of subfields OLDLANG and ACTION.
	OLDLANG	alphanumeric (1 to 3 characters)	*Old language* Enter the language associated with the automatic lanauge (AUTOLANG) sent from the voice service node (VSN) datafilled in table TOPSLANG.
	ACTION	FLASHSTAR or ZERO	*Action* Enter the subscriber action. Enter FLASH for a flashing light, STAR for the * key, or ZERO for the 0 key.
NEWLANG		alphanumeric (1 to 3 characters)	*New language* Enter the language to be used by the Queue Management System (QMS) to route to the proper operator queue (live or auto).

Datafill example

The following example shows sample datafill for table MDSACTN.

MAP display example for table MDSACTN

```
LANGACTN NEWLANG
_____________________________________________________________________
ENG ZERO     ENG
```

Table history

BCS36

Table MDSACTN was introduced.

Supplementary information

This section provides information on dump and restore procedures for table MDSACTN.

Dump and restore

Normal dump and restore procedures apply.

MDSLANG

Table name

TOPS Message Delivery System Language Table

Functional description

Table MDSLANG is referenced when Traffic Operator Position System (TOPS) calls transition from the Alternate Automated Billing Service (AABS) voice service node (VSN) to the DMS switch.

The field MONITOR determines whether the DMS switch monitors the call for subscriber actions and is used when the VSN floats a call to the DMS switch. If a tuple does not exist for a certain language, the field MONITOR defaults to N.

The language specified in field MDSLANG must be datafilled in table TOPSLANG with field AUTOLANG set to Y.

Datafill sequence and implications

Table TOPSLANG must be datafilled before table MDSLANG.

Table size

0 to 100 tuples

Datafill

The following table lists datafill for table MDSLANG.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
LANGNAME		alphanumeric (1 to 3 characters)	*Language name* Enter the language name. The name must be datafilled in table TOPSLANG with field AUTOLANG set to Y.
MONITOR		Y or N	*Message Delivery System monitor* Enter Y (yes) if the DMS switch monitors for Message Delivery System (MDS) acceptance. Otherwise, enter N (no).

Datafill example

The following example shows sample datafill for table MDSLANG.

MAP display example for table MDSLANG

```
LANGNAME MONITOR
_____________________________________________________________________
     ENG       Y
```

Table history

BCS36

Table MDSLANG was introduced.

Supplementary information

This section provides information on datafilling table MDSLANG for specific applications, and product descriptive information related to table MDSLANG.

This section provides information on dump and restore procedures for table MDSLANG.

Dump and restore

Normal dump and restore procedures apply.

MDSOPT

Table name

Message Delivery System Option Table

Functional description

The Message Delivery System Option (MDSOPT) table is introduced by the Audiogram Delivery Services-Offer of Service Prompt functionaility (ENSV0013). It provides a single place to customize the ADS network through datafill. It contains eight default tuples that are always present. These tuples cannot be deleted, nor can any additional tuples be added.

Datafill sequence and implications

Table TOPSLANG must be datafilled before table MDSOPT.

The following tables must be datafilled after table MDSOPT.

- None

Table size

8 tuples

Datafill

The following table lists datafill for table MDSOPT.

Field descriptions (Sheet 1 of 4)

Parameter name	Value	Explanation and action
BUSY_TIMER	0-15 seconds	This timer defines how long the DMS switch pauses before playing the Busy or Network Busy OOSP once the network condition has been determined to be called party busy or network busy, respectively. The default value is 5.

Field descriptions (Sheet 2 of 4)

Parameter name	Value	Explanation and action
BUSY_AVAIL_TIMER	0-60 seconds	This timer defines how long the ADS subscriber has access to ADS once either the Busy or Network Busy OOSP has been initiated. It is started whenever the Busy or Network Busy OOSP is initiated, Once it expires, the ADS subscriber cannot access ADS. This timer serves a dual role for the operating company in that it also defines the point at which the operating company can free up its ADS resources to use for other calls. The default value is 60.
RNA_TIMER	0-120 seconds	This timer defines how long the DMS switch pauses before playing the RNA OOSP once it detects a network condition of called party ringing. As an example, when the outgoing trunk is an SS7 trunk and the DMS switch detects a network condition of called party ringing, this timer is initiated. The calling party hears standard ringing until this timer expires. After the timer expires, the DMS switch plays the RNA OOSP. The default value is 30.

MDSOPT (continued)

Field descriptions (Sheet 3 of 4)

Parameter name	Value	Explanation and action
FRONT_END_TIMER	0-60 seconds	This timer defines how long the DMS switch pauses before playing the Generic OOSP on an ADS eligible call with an indeterminable network condition. As an example, when the outgoing trunk is an MF trunk, the DMS switch has no way of determining the network condition of the call. Therefore, the DMS switch starts this timer. Upon expiration of the timer, the DMS switch initiates the Generic OOSP. The primary intent of this timer is to ensure that the DMS switch does not offer ADS on calls with intercept network conditions. This action is accomplished by setting the value of this timer large enough such that in the case of intercept treatment, the calling party hears the announcement, acts accordingly, and ends the call prior to the expiration of the timer. Some examples of intercept network conditions are vacant number announcements, changed number announcements, and calls routed to an operator. The default value is 30.
HOOKFLASH_ENABLE	Y/N	The setting of this tuple determines whether the operating company allows “hookflash" as a valid request for ADS on calling card and bill-to-third party calls. If it is set to Y, the detection of “hookflash" is enabled, otherwise it is ignored. The default value is N.

Field descriptions (Sheet 4 of 4)

Parameter name	Value	Explanation and action
MDS_FOR_0_MINUS_CLG_CARD	Y/N	If this tuple is set to N, no language value is required. If the tuple is set to Y, the operating company personnel is prompted to enter a default language value to be used for OOSPs. The valid language values are LANG1, LANG2, and LANG1_2. The latter value implies bilingual prompts. In order to datafill any of these values, the corresponding MDSOPT tuples for LANG1 and LANG2 (both tuples if a bilingual default is to be datafilled) must be set to Y and have a language name assigned from table TOPSLANG, with the automated language (AUTOLANG) field set to Y. This language name will be the default language used for 0- calling card calls. The default value is N.
LANG1	Y/N	If this tuple is set to N, no other datafill is required. If it is set to Y, a language name must be specified. This language name must be one that is defined in table TOPSLANG, with the AUTOLANG field set to Y. The default value is N.
LANG2	Y/N	If this tuple is set to N, no other datafill is required. If it is set to Y, a language name must be specified. This language name must be one that is defined in table TOPSLANG, with the AUTOLANG field set to Y. The default value is N.

Datafill example

The following example shows sample datafill for table MDSOPT.

MDSOPT (end)

MAP display example for table MDSOPT

```
PARM                                                    VALUE
--------------------------------------------------------------
BUSY_TIMER                                               5
BUSY_AVAIL_TIMER                                        60
RNA_TIMER                                               30
FRONT_END_TIMER                                         30
HOOKFLASH_ENABLE                                         N
MDS_FOR_0_MINUS_CLG_CARD                                 N
LANG1                                                    N
LANG2                                                    N
```

Table history

NA005

Feature AN1542 in the functionality Audiogram Delivery Services-Offer of Service Prompt (ENSV0013) adds table MDSOPT.

Supplementary information

None

MFCACT

Table name

Multifrequency Compelled Signal to Activity Translation Table

Functional description

The logical multifrequency compelled (MFC) activity for each MFC signal appears in table MFCACT. Each tuple defines activities for one phase.

Note: Table MFCACT is protected. The operating company cannot update the table.

Field MFCACT is a vector of pairs of MFC_signal + MFC_activity. The signals and the activities are for the specified phase. An field remains undefined if a signal does not occur.

In field CONTEXT, the value N is for signal conversions that are different for this phase. Each context of this phase must receive a tuple if the value is not N.

For additional information, refer to table MFCPROT.

Datafill sequence and meaning

You do not need to enter data in other tables before you enter data in table MFCACT.

Table size

The system automatically allocates memory for a maximum of 15 tuples.

Datafill

Datafill for table MFCACT appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
INDX		1 to 15	*Index*. This field contains a number from 1 to 15 as the index to the tuple. The field PROTINDX in table RGSIGSYS references this field.
PHASE		I, II, A, B, C, D	*Protocol phase*. This field contains the protocol phase for this tuple.

MFCACT (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
CONTEXT		DATA DIGITS FIRST or N	*Protocol context* This field contains the protocol context for this tuple. Specified incoming signals can have different meanings when different parts of the protocol receive the signals. The entry in this field allows for specification of this meaning. If the signal conversion is different for this phase, use the value N. Each context of this phase must receive a tuple if the conversion is not different.
MFCACT		alphanumeric (a pair of a maximum of 16 characters each)	*Vector pairs of MFC signal and MFC activity*. This field contains a mapping between the incoming signals and the activities for a specified phase and context. The first part of the vector element pair is phase together with one of the 15 tones. Examples of tones are I1 and I15. The second part of the vector element pair is the MFC activity. An example is DIGIT1 and ICPOPR. The vector contains a maximum of 15 pairs of MFC_signal and MFC activity. An activity can appear a maximum of one time in any one vector.

Datafill example

Sample datafill for table MFCACT appears in the following example.

MAP example for table MFCACT

```
INDX   PHASE   CONTEXT       MFCACT
_____________________________________________________
1      1       FIRST         (I1 TERMTEST) (12 DIGIT2)
```

MFCPROT

Table name

Multifrequency Compelled Protocol Tuples List Table

Overview

Register signaling system MFC-R2 has several types. The central control (CC) tables provide time-out values and table control support for different types of MFC-R2 signaling systems.

Most of the tables involved in the protocol definition are write-protected. The operating company cannot modify the tables.

Protocol tables

Four tables contain the data required to define a variant of the multifrequency compelled (MFC) protocol. The four tables are MFCACT, ACTMFC, ACTGEN, and MFCPROT. These tables define the connection between MFC signals and logical activities.

Protocol levels

The MFC protocol has four levels:

- Physical tones. Physical tones mean the physical tone pairs. In MFC-R2 each direction contains 15 tone pairs.
- Logical tones. Logical tones are the tone numbers of the MFC type used. These numbers are 1 to 15.
- MFC signals. The MFC signals contain groups of phase and logical tone. The signals normally contain two to four phases.
- MFC activities. The MFC activities are the logical activities of the MFC protocol. Most of the software uses this level to provide flexibility.

Universal tone receiver (UTR) firmware translates physical tones to logical tones. Tone generator read-only memory (ROM) generates physical tones. The system uses tone identification (tone id) (0..63) to access physical tones. Translation progresses from logical tones to the tone ids. The system reports logical tones according to the tone set used.

The logical tone translates to MFC signal translation directly. The system keeps the current phase to maintain the logical tone.

Signal-to-activity translation is different in different MFC types. The translation uses tables that define every MFC signal.

MFCPROT (continued)

The MFC systems use 15-forward and 15-backward signals to communicate information over an R2 trunk. Each of these 15 signals has two frequency groups.

During each phase of a call, each of the 15-forward and 15-backward signals have a different meaning. The type of R2 used for a call determines the meaning of the call. The type of R2 also determines the points in a call where the meaning changes.

The DMS uses four tables to define R2 protocols. The four tables are: MFCPROT, ACTGEN, MFCACT and ACTMFC.

Signals and internal activities map to each other through the use of the R2 tables MFCACT and ACTMFC. These tables contain tuples that define a signal meaning during each phase of a call.

The DMS uses the table ACTGEN to control signal mapping changes. Table ACTGEN can change the call phase, or signal mappings, based on a received signal. Table ACTGEN provides a method to implement most R2 types.

MFC signals

The MFC signaling uses 15 tones in the incoming and outgoing directions. The signaling supports more activities. This condition occurs in phases. Each tone has a different meaning in each phase.

Phases I and II apply to outgoing phases. Phases A, B, C, and D apply to incoming phases. Each direction contains two phases. Phase exchange is part of the protocol. Two phases allow a maximum of 30 MFC signals. Four phases allow a maximum of 60 signals. Phase and tone indicate these MFC signals. The phases and tones appear in the following table.

MFC signals (Sheet 1 of 2)

Signal	Phase and tone
I_SIGNAL	I1, I2, ... I15
II_SIGNAL	II1, II2, ... II15
A_SIGNAL	A1, A2, ... A15
B_SIGNAL	B1, B2, ... B15

MFC signals (Sheet 2 of 2)

Signal	Phase and tone
C_SIGNAL	C1, C2, ... C15
D_SIGNAL	D1, D2, ... D15

MFC activities

According to CCITT requirements, each MFC signal has a fixed logical description. The MFC signals can have different descriptions in different countries and in international protocol. To support these descriptions, this feature includes lists of activities in most of the MFC protocols. These lists are phase-oriented, because most of the differences are interphase. These lists do not inclide some activities of some protocols. You can add these activities.

Outgoing MFC Activities

A description of how to use phases I and II appear in the following tables..

The outgoing phase I activities for the following digits and for domestic and international markets appear in the following table:

- digit1
- digit2
- digit3
- digit4
- digit5
- digit6
- digit7
- digit8
- digit9
- digit0

MFCPROT (continued)

The system can map the I signal to different activities in different stages of the same protocol. For example, activities are different during the collection of digits or data or in the first digit of an international protocol.

Phase I MFC activities

Phase	Explanation
icp opr	Intercept operator access request
toll opr	Toll operator access request
req fault	Request not accepted
maint req	Maintenance equipment request
ecsup req	Half echo suppressor request
end dgts	End of digits and end of identification
disc dgt	International discrimination digit
cci oes	International country code indicator, outgoing echo suppression required
cci nes	International country code indicator, echo suppression not required
cci ies	International country code indicator, incoming echo suppression required
sat	International satellite link
no sat	International no satellite link
ies req	International incoming echo suppressor required

Note: International use includes French, English, German, Russian, and Spanish.

The outgoing phase II MFC activities, caller category, for CCITT appears in the following table.

Phase II MFC activities (caller category) for CCITT (Sheet 1 of 2)

Phase	Explanation
ord subsc	Normal subscriber
prio subs	Priority subscriber
maint eq	Maintenance equipment

Phase II MFC activities (caller category) for CCITT (Sheet 2 of 2)

Phase	Explanation
operator	Operator
data tran	Data transmit
oper xfer	Operator with forward transfer facility
oper nxfer	Operator without forward transfer facility

The outgoing phase II MFC activities, caller category, for non-CCITT appear in the following table.

Phase II MFC activities (caller category) for non-CCITT (Sheet 1 of 2)

Phase	Explanation
dial phon	Dial telephone
trk opr	Trunk operator
sprio subs	Semi-priority subscriber
dtmf phon	Dual tone multifrequency (DTMF) telephone
coin box	Coin box (unit fee local)
coin fee	Coin box (unit fee local)
pub stat	Public station
test line	Test line desk
test eq	Test equipment
dial pabx	Dial private automatic branch exchange (PABX)
bar msg rt	Barred message rate
dial coin	Coin dial
dtmf coin	DTMF coin dial
inf chg	Information service immediate charge
dtmf pabx	DTMF PABX
prio spm	Priority subscriber with home meter

MFCPROT (continued)

Phase II MFC activities (caller category) for non-CCITT (Sheet 2 of 2)

Phase	Explanation
multparty	Multiparty line
pabx opr	PABX operator
hotel call	Hotel call
ord spm	Normal subscriber with home meter
icp opr	Intercept service operator

Incoming MFC Activities

Incoming MFC activities use the four phases A, B, C, and D.

The incoming phase II MFC activities, caller category, for CCITT appear in the following table.

Incoming MFC A activities (Sheet 1 of 2)

Activity	Explanation
Next Dig	Send next digit (n + 1)
Prev Dig	Send previous digit (n - 1)
Prev2 Dig	Send n-2 digit
Prev3 Dig	Send n-3 digit
First Dig	Send first digit
Curr Dig	Send current digit (n)
Category	Send caller category
Call Trace	Send caller category or next digit of calling number
Spch Path	Install speech path, charge
B Category	Change to phase B and send caller category
C Category	Change to phase C and send caller category
D Category	Change to phase D and send caller category
Orig DN	Send next calling directory number (DN) digit
C Next Dig	Change to phase C, send next digit

Incoming MFC A activities (Sheet 2 of 2)

Activity	Explanation
Congestion	National congestion
Undefreq	Undefined request (for legal undefined signals)
Cc code	International send country code indicator
Lng dig	International send language digit
Ckt type	International send circuit type
Esup req	International, is echo suppressor required?
Intl cong	International congestion

The logical activities for incoming MFC A activities appear in the following table. The system does not translate these activities to signals. Table ACTGEN uses these activities to define the activity sequence.

Incoming MFC A logical activities

Activity	Explanation
Term req	Executed in international terminating calls
Tran req	Executed in international transit calls
Nat req	Executed in national calls

The activities for incoming MFC B activities appear in the following table.

Incoming MFC B activities (Sheet 1 of 2)

Activity	Explanation
Subs busy	The line of the subscriber is busy.
Idle chrg	Called party idle, charge
Idle nchrg	Called party idle, charge not made
Out of ord	Directory number (DN) out of order
Dn Changed	DN changed

MFCPROT (continued)

Incoming MFC B activities (Sheet 2 of 2)

Activity	Explanation
Num change	Called number changed
Subs icp	The system marks the line of the subscriber for intercept
Subs seiz	The system seizes the line of the subscriber
Unallc num	Unallocated number
Localcong	National congestion
Call Trace	Call trace

The activities for incoming MFC C activities appear in the following table.

Incoming MFC C activities

Activity	Explanation
Next Dig	Send next digit (n + 1)
Prev Dig	Send previous digit (n - 1)
Orig DN	Send next calling directory number (DN) digit
Category	Send caller category
B Category	Change to phase B and send caller category
First Dig	Send first digit
Curr Dig	Send current digit (n)
Spch Path	Install speech path, charge
Localcong	National congestion

The activities for incoming MFC D activities appear in the following table.

Incoming MFC D activities

Activity	Explanation
Next Dig	Send next digit (n + 1)
Orig DN	Send next calling directory number (DN) digit
First Dig	Send first digit
Curr Dig	Send current digit (n)
Category	Send caller category
Localcong	National congestion

Functional description

Table MFCPROT defines tuples in MFCACT, ACTMFC and ACTGEN that a specified R2 protocol requires.

How table MFCPROT links tuples that relate to a specified protocol appears in the follwoing figure. The MFCACT and ACTMFC indexes selected depend on the current call phase. The system installs the call phase through table ACTGEN based on the backward activity received.

MFCPROT (continued)

R2 protocol definition tables

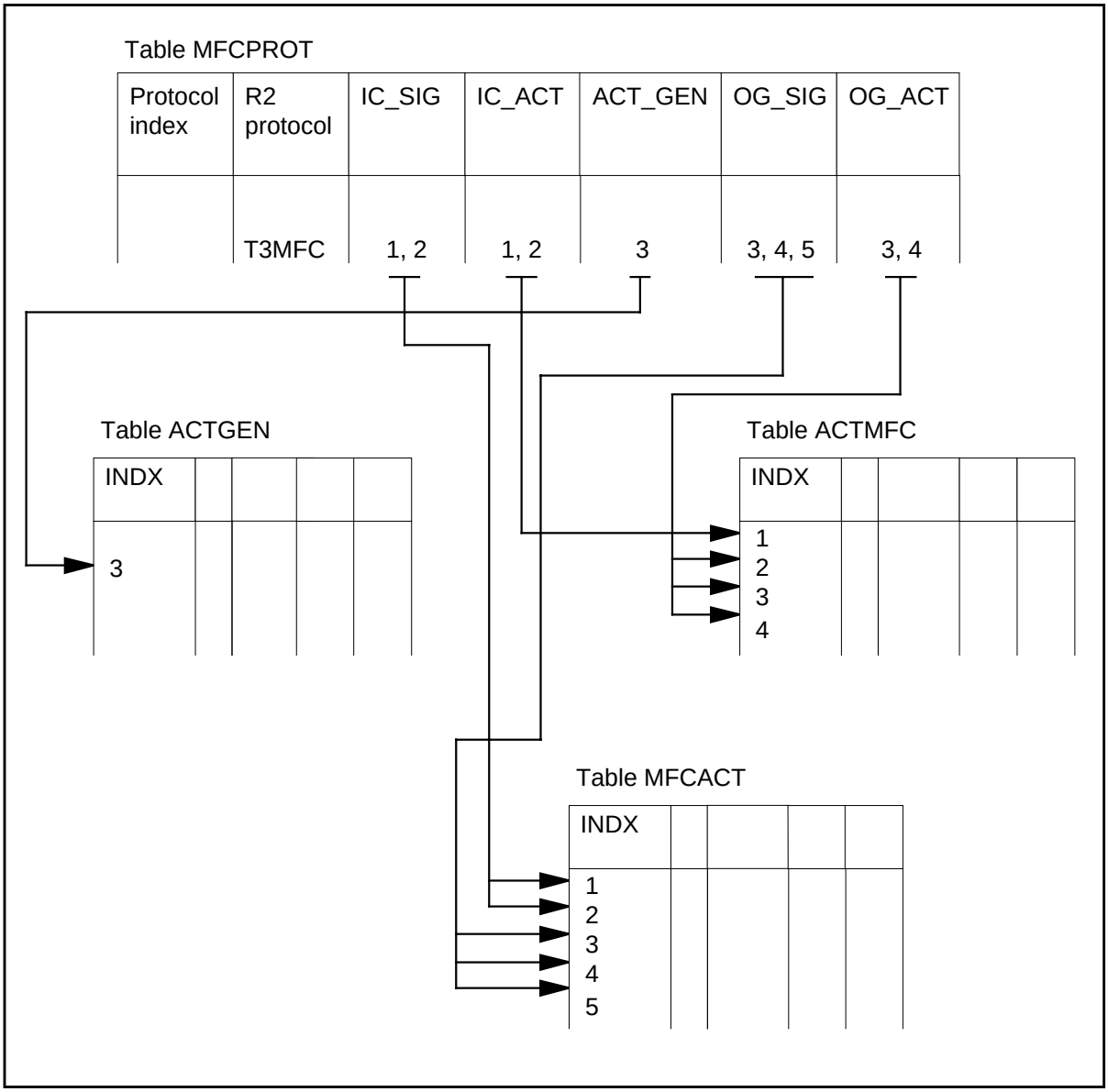


Table MFCPROT completes the definition of MFC protocols. The system builds a protocol from a set of tuples found in tables MFCACT, ACTMFC, and MFCGEN. The system includes a list of other protocols that can connect end-to-end.

Note: This table is protected. The operating company cannot update this table.

Datafill sequence and meaning

You do not have to enter data in other tables before table MFCPROT.

Table size

The system allocates memory for a maximum of 10 tuples.

Datafill

Datafill for table MFCPROT appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
INDX		1 to 10	*Index*. This field contains the index to the tuple. Field PROTINDX in table RGSIGSYS refers to this field.
PROTOCOL		INTLMFC NIL R2MFC T3MFC	*Multifrequency compelled protocol type*. This field contains one of the protocol types. The entry INTLMFC specifies the CCITT international R2 variant signaling system. The entry R2MFC specifies the Turkish national R2 variant signaling system. The entry T3MFC specifies the Australian national R2 variant signaling system.
ICSIG		vector of table MFCACT	*Signal mapping for incoming calls*. This field contains a vector with a maximum of 12 indexes of the tuples in table MFCACT. The tuples define the mapping of incoming signals to activities. Use this field for incoming calls. If you require less than 12 indexes, end the list with a dollar sign ($).
ICACT		vector of table ACTMFC	*Activity mapping for incoming calls*. This field contains a vector with a maximum of four indexes of the tuples in table ACTMFC. The indexes define the mapping of incoming activities to signals. Incoming calls use this mapping. If you require less than four indexes, end the list with a dollar sign ($).
ACTGEN		1 to 3	*Activity generator*. This field contains the index to table ACTGEN. The user can convert an incoming call and an activity to two activities.

MFCPROT (continued)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
OGSIG		vector of table MFCACT	*Signal mapping for outgoing calls*. This field contains a vector with a maximum of six indexes of the tuples in table MFCACT. The indexes define the mapping of incoming signals to activities. Outgoing calls use this mapping. If you require less than six indexes, end the list with a dollar sign ($).
OGACT		vector of table ACTMFC	*Activity mapping for outgoing calls*. This field contains a vector with a maximum of two indexes of the tuples in table ACTMFC. The indexes define the mapping of incoming activities to signals. Outgoing calls use this mapping. If you require less than two indexes, end the list with a dollar sign ($).
ENDCON		vector of table MFCPROT	*End-to-end connection protocols* This field contains a vector with a maximum of ten indexes of the tuples in table MFCPROT. The indexes indicate the protocols that appear the same at each end and can work end-to-end. If the protocol can work end-to-end with the protocol, the system updates this field. The updated field includes the table index of the tuple. If the protocol can work end-to-end with another protocol, the system includes the table index of this other protocol. The system updates the field ENDCON of the other protocol tuple that corresponds. If you require less than ten indexes, end the list with a dollar sign ($).

Datafill example

Sample datafill for table MFCPROT appears in the following example.

MAP example for table MFCPROT

```
INDX  PROTOCOL  ICSIG       ICACT     ACTGEN  OGSIG
OGACT  ENDCON
_____________________________________________________________
3     T3MFC    (7 8 9 10)$  (3 4 5 6) 2       (1 2 3 11 6
5)$
(1 2)$ $
```

MFCTRTMT

Table name

MFC Activity to Extended Treatment Translation Table

Functional description

Table MFCTRTMT provides a translation from a multi-frequency compelled (MFC) activity to an extended treatment. Outgoing R2 MFC signaling trunks require this table.

The default value for tuples in table MFCTRTMT is RODR (reorder).

For related information, refer to table TRTMTMFC.

Datafill sequence and meaning

You do not have to enter data in other tables before you enter data in table MFCTRTMT.

Table size

The table has a maximum of 64 tuples allocated.

Datafill

Datafill for table MFCTRTMT appears in the following table.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
ACTIVITY		CONFUSION CONGE- STION DN- CHANGED INTLCONG LOCAL- CONG NILACT NUM- CHANGE OUTOFORD SUBSBUSY SUBSICP SUBSSEIZ TIMEOUT UNALLC- NVM	*Status activity*. Enter the activity that corresponds to a backwards signal.
TREATMNT		alphanumeric (4 characters)	*Extended treatment*. Enter an extended treatment for the system to apply to the backwards signal. Refer to table TMTCNTL, subtable TREAT, for the list of treatments.

Datafill example

Sample datafill for table MFCTRTMT appears in the following example.

Example of MAP for table MFCTRTMT

```
ACTIVITY      TREATMENT
_____________________________________________________________
SUBSBUSY      BUSY
```

MGCINV

Table name

Media Gateway Controller Inventory.

Functional description

This table defines remote media gateway controllers (MGC) including their IP addresses, related virtual router distribution nodes (VRDN), and connection protocols.

Datafill sequence and meaning

Enter datafill into the following tables after you enter datafill into table MGCINV:

- Table TELEPROF
- Table VRDNINV
- Table TRKOPTS
- Table DPTRKMEM

Datafill

Table lists datafill for table MGCINV.

Field descriptions

Field	Subfield	Entry	Explanation and action
MGCNAME			Name of destination MGC
ADDR			Address
VRDNLIST			Virtual Router Distribution Node List (read only)
PROTOCOL			Protocol

Datafill example

Figure shows sample datafill for table MGCINV.

MAP display example for table MGCINV

```
MGCNAME      ADDR              VRDNLIST     PROTOCOL
-----------------------------------------------------------
PORTLAND     47 102 241 227    (VRDN1)      SCTP5
```

Note: Release SNH01 only supports the SCTP5 protocol.

Table history

SNH01

Release SNH01 introduces this table.

MILES

Table name

TOPS Mileage Table

Functional description

Table MILES is used in domestic rating where vertical and horizontal (V&H) rating applies to the numbering plan area (NPA). It associates a rate step for each mileage band of a rate schedule. The automatic rating system uses the V&H co-ordinates to determine the mileage band that a call falls within, and table MILES table determines the rate step to be used for charge calculation.

Feature V0178 (TOPS Mass Table Control) permits data changes in table MILES to be mass-table-controlled. In other words, the feature permits the simultaneous activation of data changes in the table by entering the data changes for the table into table MILESI, and then, when all the required changes are entered, swap the contents of table MILES with table MILESI.

For further information on feature V0178, refer to table CHARGEI.

Datafill sequence and implications

Table SCHNUM must be datafilled before table MILES.

Datafill

The following table lists datafill for table MILES.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
SCHRS		see subfields	*Schedule rate step* This field is the key to the table and consists of subfields SCHNAME and RATESTEP.
	SCHNAME	alphanumeric (1 to 17 characters)	*Schedule name* Enter the name of the rate schedule as previously datafill in table SCHNUM.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	RATESTEP	0 to 999	*Rate step* Enter the rate step assigned to the mileage band in the rate schedule. Within each rate schedule the rate step must be contiguous. Up to 40 rate steps can be datafilled for each rate schedule.
UMB		1 to 9999	*Upper mileage band* Enter the upper mileage band (UMB) for the rate step of the rate schedule. ***Note:*** A distance falling within the last UMB and this UMB (excluding the last UMB and including this UMB) has the rate step shown in field RATESTEP. The last UMB given in a rate schedule is in one of two forms: • If the last UMB is shown in miles, enter the numeric value shown. • If the last UMB is shown as OVER, enter 9999

Datafill example

The following example shows sample datafill for table MILES.

MILES (end)

MAP display example for table MILES

```
    SCHRS  UMB
________________________________________________________
  TCTS 54    8
  TCTS 55   20
  TCTS 56   36
  TCTS 57   56
  .    .     .
  .    .     .
  .    .     .
  TCTS 69  1450
  TCTS 70  1675
  TCTS 71  9999
```

MILESI

Table name

TOPS Mileage Inactive Table

Functional description

Feature V0178 (TOPS Mass Table Control) permits data changes in table MILES to be mass-table-controlled. In other words, the feature permits the simultaneous activation of data changes in the table by entering the data changes for the table into table MILESI, and then, when all the required changes are entered, swap the contents of table MILES with table MILESI.

For further information on feature V0178, refer to table CHARGEI.

Refer to table MILES.

Datafill sequence and implications

Refer to table MILES.

Table size

Refer to table MILES.

Datafill

Refer to table MILES.

Datafill example

Refer to table MILES.

MINCHG

Table name

TOPS Minimum Charge Table

Functional description

Table MINCHG allows the telephone company to implement a minimum charge on all calls rated by the DMS Traffic Operator Position System (TOPS) rating system. If the computed charge is less than the specified minimum charge, the minimum charge is applied to the call. The comparison of the computed charge to the minimum charge is done before taxes, surcharges and any coin nickel roundings.

The telephone operating company specifies minimum charges for each schedule using table MINCHG.

Usage notes

The following list describes usage notes.

- The operating company need not datafill schedules for which no minimum charges apply.
- The currency limit in table MINCHG is cents.
- The default value for all fields is zero (0).
- Table MINCHG is part of TOPS Mass Table Control and therefore has an inactive twin table MINCHGI.

TOPS Mass Table Control

Feature V0178 (TOPS Mass Table Control) permits data changes in table MINCHG to be mass-table-controlled. In other words, the feature permits the simultaneous activation of data changes in the table by entering the data changes for the table into table MINCHGI, and then, when all the required changes are entered, swap the contents of table MINCHG with table MINCHGI.

For further information on feature V0178, refer to table CHARGEI.

Datafill sequence and implications

Table SCHED must be datafilled before table MINCHG.

Datafill

The following table lists datafill for table MINCHG.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
SCHNAME		alphanumeric (1 to 17 characters)	*Schedule name* Enter the schedule name for which the following set of minimum charges apply as previously datafilled in table SCHED.
SMIN		0 to 4095	*Station non-coin minimum charge* Minimum charge in cents for all station calls except coin station paid calls (for example, hotel, NC [no charage], and all other coin).
SMINCN		0 to 4095	*Station coin minimum charge* Minimum charge in cents for coin station paid calls.
PMIN		0 to 4095	*Person non-coin minimum charge* Minimum charge in cents for all person calls except coin person paid calls.
PMINCN		0 to 4095	*Person coin minimum charge* Minimum charge in cents for coin person paid calls.

Datafill example

The following example shows sample datafill for table MINCHG.

Note: If minimum charges apply on the entire schedule, SMIN and SMINCN must be datafilled. The same is true for personal calls.

MINCHG (end)

MAP display example for table MINCHG

```
SCHNAME SMIN SMINCN PMIN PMINCN
_____________________________________________________
  ONTQUE   20     0   0      0
  CANUSA    0    30   0      0
    TCTS   20    30   0      0
```

MINCHGI

Table name

TOPS Minimum Charge Inactive Table

Functional description

Feature V0178 (TOPS Mass Table Control) permits data changes in table MINCHG to be mass-table-controlled. In other words, the feature permits the simultaneous activation of data changes in the table by entering the data changes for the table into table MINCHGI, and then, when all the required changes are entered, swap the contents of table MINCHG with table MINCHGI.

For further information on feature V0178, refer to table CHARGEI.

Refer to table MINCHG.

Datafill sequence and implications

Refer to table MINCHG.

Table size

Refer to table MINCHG.

Datafill

Refer to table MINCHG.

Datafill example

Refer to table MINCHG.

MMCONF

Table name

IBN Meet-Me Conference Table

Functional description

Table MMCONF is required for a DMS with the MDC Meet-Me Conference features. Customer groups are assigned the Meet-Me Conference features through table control. All 4,096 customer groups can be assigned the Meet-Me Conference functionality.

To arrange a meet-me conference, a station calls the attendant to receive a directory number for a conference bridge if one has not been assigned. The originator must transmit the directory number (DN) to the future conference members before the date and time of the meet-me conference. At the specified time, all potential conferees dial the DN and meet.

As a conferee is added, all conferees, excluding the new arrival on the bridge, receive a confirmation tone indicating a party has been added. This allows any conferee to check the roll call to ensure only desired parties are involved in the conference call and to maintain an orderly list of participants.

As conferees leave the bridge, a confirmation tone is received by all conferees announcing a change in the number of participants.

Note: Trunks that do not return disconnect supervision are excluded.

For each MDC customer group, up to 16 DNs can be assigned for meet-me conferences. All these numbers can have conferences active simultaneously, assuming sufficient six-port conference circuits are provisioned in the DMS. Associated with each meet-me DN is a line screening code (LSC) flag number and a direct inward dial (DID) flag specifying whether extragroup stations can join the conference.

When the first conferee dials the meet-me DN, the station is checked for eligibility against the conference LSC and DID flag. Furthermore, the first conferee must provide disconnect supervision. The ACALLOW flag decides whether an attendant console can join a meet-me conference.

If the station is not eligible to join the conference, it receives no acknowledgement (NACK) treatment. Otherwise a six-port bridge is requested. If no bridge is available, the station receives no service circuit (NOSC) treatment.

If all the conference circuits allocated for this customer group are in use, the station receives customer group resource overflow (CGRO) treatment. If a bridge is obtained, the station is connected to one port of the bridge and hears ring tone until it abandons the call or a second party dials into the conference.

Subsequent parties dialing the conference are checked against the LSC and DID flag and are connected to the bridge if they are eligible. Otherwise, they are given NACK treatment. When the second party joins, the ringing to the first party stops, and speech is established between the two parties. As additional parties join the conference, one second of ringing is applied to the conference bridge to announce a party's arrival; then speech is established between the existing conferees and the newcomer.

If all bridge ports are occupied in the conference, a station dialing into the conference receives busy treatment.

The LSC entered in this table restricts parties dialing the meet-me conference DN. The party must have a compatible LSC as defined in table LSCFLAGS.

To allow for seven or more parties, a meet-me conference requires more than one conference bridge. The first bridge allocated to a conference is the primary bridge. Once more than six conferees have been connected to the conference, a conferee is transferred from the primary bridge to the new bridge which is connected to the primary bridge by the port used by the transferred conferee. This bridge, connecting to the primary bridge, is referred to as a secondary bridge.

At any time during the conference, any conferee can lock the conference by flashing or pressing the 3WC (three-way calling), CT (call transfer), or CONF (conference) keys on a Meridian business set (MBS). This prevents parties from dialing into the conference and gives them busy treatment. All conferees hear a locking confirmation tone.

After the conference is locked, subsequent flashes recall the attendant or unlock the conference if no consoles are assigned to the customer group to which the conference belongs. When the conference becomes unlocked, parties can again dial into the conference. If the attendant is recalled, the attendant can add conferees to the conference.

Subsequent flashes by conferees are handled as follows:

- If the customer group datafilled for the meet-me conference has consoles, an attendant is called. The attendant can then add conferees. Stations dialing into the conference still receive busy treatment. From this point,

MMCONF (continued)

the call is handled as if the attendant established the initial conference. If no attendants are available, the flash is ignored.

Note: Field CONSOLES in table CUSTENG determines if the customer group can have consoles.

- If the customer group datafilled for the meet-me conference cannot have consoles, the meet-me conference is unlocked. All conferees hear unlocking confirmation tone. If a subsequent flash occurs, the conference becomes locked and the conferees hear locking confirmation tone.

Once within a meet-me conference, normal flash features are disabled. If the conference is unlocked, the first flash by any DMS-served conferee is the signal to lock the conference. Within a locked conference, a flash by any party is an attendant recall signal. If the customer group of the meet-me conference DN cannot have attendant consoles, the flash by any conferee during a locked conference unlocks the conference.

Note: An external conferee coming in over a trunk is not able to use a flash to lock or unlock a conference due to limitations imposed by the trunk type. (It is possible for an external conferee to lock or unlock a conference regardless of whether they are connected by a trunk or a line. Most trunks view a flash as a disconnect.)

When a station dials a meet-me conference directory number, the DMS switch takes one of the following actions:

- If the maximum number of conferees has been reached, the station receives busy treatment.
- If there is a port available on the primary bridge, the station is connected to the port.
- If there is no free port left on the primary bridge, a check is made to see whether any secondary bridge is connected with the primary bridge. If so, a search is made to locate a free port on the secondary bridge. The first available port is used to connect the station to the conference.
- If there is no port available from the conference configuration, a check is made to see whether at least one port on the primary bridge is not connected to a secondary bridge. If so, a request for a six-port conference bridge is made. If allocated, the system removes one of the conferees from the primary bridge, connects the port with a port on the new bridge, and adds the removed conferee and the new conferee onto the new bridge.

In all cases, a 1-s ring (440 Hz + 480 Hz) is given to the conference when a new conferee is connected to the conference.

The system tracks the number of conferees in the conference. When a conferee disconnects from a secondary bridge, a check is made to see whether this was the last conferee on that bridge. If so, the secondary bridge is disconnected from the primary bridge and returned to the idle pool. When the number of conferees decreases to one, the conference call is taken down and all resources are returned to the idle pool.

Four confirmation tones are used in a meet-me conference. The conferee confirmation tone is 1 s of ring (440 Hz + 480 Hz). The conferee disconnect confirmation tone is 400 ms of dial tone (350 Hz + 440 Hz). The locking confirmation tone is 500 ms of high tone (480 Hz). The unlocking confirmation tone is three cycles of 100 ms on and 100 ms off, followed by 400 ms on, of high tone (480 Hz).

DMS supports a pool of conference bridges used for meet-me conference, attendant conference and future features using the six-port conference bridge.

When a conferee disconnects from the bridge, the DMS must check for the presence of DMS stations or trunks with disconnect supervision on the bridge. If none of the conferees is a DMS station or trunk with disconnect supervision, the conference bridge or bridges in use is returned to the idle pool.

Note that a two-party conference consisting of a plain ordinary telephone service (POTS) line and an IBN trunk that does not provide disconnect supervision constitutes a valid conference.

If the first conferee is a trunk, the trunk type must be one which returns disconnect supervision (it cannot be a 5X25 loop). If such is the case, the caller receives reorder treatment.

When a DMS station is connected to a conference bridge, the following features are cancelled for the duration of the call:

- Call Waiting
- Three-Way Calling
- Call Transfer
- Attendant Camp-on
- Busy Verify of Lines and Trunks connected to bridge

MMCONF (continued)

Feature Call Waiting is not cancelled if a conferee has an electronic telephone set.

There is no interaction between Direct Inward System Access (DISA) and meet-me conference. If the DID flag is set to N (no) for a meet-me conference number, an extragroup station is not allowed to join the meet-me conference even if it dials a DISA DN first.

If Station Message Detail Recording (SMDR) applies to any of the legs of the conference, the feature is identified in the SMDR record by the terminating feature code (3) for meet-me conference.

If an attendant dials the meet-me conference number, the call is routed to treatment NACK.

If an attempt is made to set up a conference call when the number of six-port conference circuits in use by the customer group is equal to the value of option CONF6C in table CUSTENG, or the number of six-port conference circuits in use by the customer group is less than the value of option CONF6C in table CUSTENG, and no six-port conference circuits are available, the call is routed to treatment CGRO.

Datafill sequence and implications

The following tables must be datafilled before table MMCONF:

- CUSTHEAD
- HNPACONT
- IBNXLA
- NARDATA

Note: After tuples are added in table MMCONF, the DN information is automatically datafilled in table DNINV, not in table DNROUTE.

Table size

Memory is automatically allocated for sixteen conference numbers for each customer group.

Datafill

The following table lists datafill for table MMCONF.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
LKEY		see subfields	*Line key* This field consists of subfields CUSTNAME and CONF.
	CUSTNAME	alphanumeric (1 to 16 characters)	*Customer name* Enter the name assigned to the customer group.
	CONF	0 to 15	*Conference number* Enter the number assigned to the meet-me conference directory number.
SNPA		numeric (0 to 9)	*Serving number plan area* Enter the three-digit serving numbering plan area (NPA) of the meet-me conference directory number. Any entry outside of this range is invalid..
NNX		numeric (0 to 9)	*NNX code* Enter the three-digit NNX code of the meet-me conference DN. Any entry outside of this range is invalid.
DEFGDIGS		0 to 9 (4 digits)	*DEFG digits* Enter the four DEFG digits of the meet-me conference DN. Any entry outside the range indicated for this field is invalid.
LSCOMB		0 to 255	*Line screening code flag number* Enter the number assigned to the meet-me conference DN.
DID		Y or N	*Direct inward dial* Enter Y (yes) if any lines and incoming trunk that passes the line screening code (LSC) check are allowed to dial the meet-me conference DN. Enter N (no) to specify that only the lines and incoming trunks within the same customer group family as the meet-me conference DN are allowed to dial the meet-me conference DN.

MMCONF (continued)

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
DIDORIG		Y or N	*Direct inward dial origination* This field allows the operating company to decide if extragroup lines can initiate a meet-me conference or if initiation is restricted to intragroup lines. Enter Y to specify that extragroup lines can initiate a meet-me conference. Enter N to specify that all conferees must be intragroup. If field DID and field DIDORIG are both datafilled Y, all conferees can be extragroup and no special checks are needed when a conferee releases. If field DID is set to Y and field DIDORIG is set to N, at least one conferee must belong to the same customer group family as the meet-me conference DN. When any conferee releases, a check is made to ensure at least one of the remaining conferees is intragroup.
ACALLOW		Y or N	*A call allowed* Enter ACALLOW (a call allowed) to allow an attendant to join/transfer calls to a meet-me conference.
SIZE		0 to 150	*Size* Enter the number of callers allowed into the conference call. A conference size of 6 or 30 is available for a standard conference type. See field CONFTYPE, entry STD.

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
CONFTYPE		CNF6ADDON CODEADDON CODEONLY FLASHONLY or STD	*Conference type*Enter the conference control type. Enter CNF6ADDON if a flash gives the conferee SDT. The conferee then can do everything that can be done with CONFTYPE of CODEONLY. Also, if the conferee has the flexible station conference feature, the conferee can add another party directly. This conference type makes the interface look like CODEONLY for lines without the conference feature and CODEADDON for lines with the conference feature. This gives the operating company a way to ensure a meet-me conference is not used as a shared conference feature. The entry in field SIZE is independent of the SUPERCONF option in table CUSTHEAD. The size can be set to any value up to 150. Enter CODEADDON if the entry in field SIZE is independent of the SUPERCONF option in table CUSTHEAD. The size can be set to any value up to 150.
CONFTYPE (continued)			Enter CODEONLY if a flash gives the conferee SDT. The conferee then can dial the lock code, unlock code, or the attendant. If any other code is dialed, the conferee who flashed is given 5 s of reorder tone and returned to the conference. If the conferee dials the attendant, the attendant can connect the conferee with another station and the conferee can add the party into the conference. The attendant is only reached using a TRSEL of ATT in table IBNXLA. If the call is routed any other way, the conferee receives five seconds of reorder tone and is returned to the bridge. The entry for field SIZE is independent of the SUPERCONF option in table CUSTHEAD. The size can be set to any value up to 150. Enter FLASHONLY if a flash toggles the conference state. If the conference is locked, flashing unlocks it, and vice versa. The entry for field SIZE does not depend on SUPERCONF option in table CUSTHEAD. The size can be set to any value up to 150.

MMCONF (continued)

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
CONFTYPE (continued)			Enter STD (standard) if the conferee can lock the bridge by flashing. If a conferee flashes again, two events can happen. If the customer group of the meet-me number is datafilled to have attendant consoles, the call changes to an attendant console conference and the party that flashed is put on the attendant queue. If the customer group of the meet-me number is not datafilled to have attendant consoles, the conference is unlocked. The conferees can continue to alternate between lock and unlock. The maximum number of conferees is six, unless the customer group has the super conference (SUPERCONF) option in table CUSTHEAD, in which case the maximum number is 30.
OPTIONS (BCS36-)			*Options* This field consists of subfield MMOPTNS.
	MMOPTNS		*Meet-me conference option* Enter NARS (network access registers) to allow NAR access for calls terminating to a meet-me conference and datafill refinement NARNAME.
	NARNAME		*Network access registers name* Enter the name of the NAR that a call must have access through to continue. The NAR name must be datafilled in table NARDATA.

Datafill example

The following example shows sample datafill for table MMCONF.

The input data is for meet-me conference DN 613 722 4597 which is assigned to conference number 0 (zero) of customer group COMKODAK.

The meet-me conference DN is assigned line screening code flag number 0 (zero) and any line and incoming trunk which passes the line screening code (LSC) check are allowed to dial the meet-me conference DN.

The first conferee dialing into the conference can belong to a customer group family other than the one to which the meet-me DN belongs.

The maximum number of conferees is 30, and the conference control is CODEADDON.

The NAR is accessed through NARGRP1.

MAP display example for table MMCONF

```
      LKEY SNPA NNX DEFGDIGS LSCOMB DID DIDORIG ACALLOW SIZE
         CONFTYPE            OPTIONS

_____________________________________________________________________

COMKODAK 0  613  722   4597      0   Y       N    Y  30
  CODEADDON              ( NARS NARGRP1)$
```

Table history

NA009

The Attendant Console Enhancements feature AF7263 in NA009 added the field ACALLOW to table MMCONF. This field allows an attendant to join/transfer calls to a meet-me conference.

NA005

The following changes were to table MMCONF:

- Statement in the functional description was added regarding the Meet-Me Conference Enhancement feature, AF6110, which removes the restriction on the number of customer groups that can be assigned Meet-Me Conference functionality.
- Note added to section “Datafill sequence and implications" stating that DN information in table MMCONF is automatically datafilled in table DNINV.

BCS36

Datafill sequence was added.

Field OPTIONS, subfield MMOPTNS, and refinement NARNAME were added.

Supplementary information

This section provides information on dump and restore procedures when datafilling table MMCONF.

MMCONF (end)

Dump and restore

A reformat is required for the new NAR option.

MNATMCON

Table name

ATM connections provisioning (MNATMCON)

Functional description

MNATMCON is a read/write table which is provisioned through table control. It is used to provision ATM connections against STS3cP carriers in table MNHSCARR. Each tuple in the table represents a single logical connection between the SPM ATM interface and the ATM network in the OC3c physical connection. Each connection can have upto 24 members provisioned in table TRKMEN.

This table uses a three-part key (node type, node number and connection number). To optimize access time, this table internally hashes the key as a single field for look-ups. AAL-1 is supported. All AAL-1 connections support wideband.

When a new tuple is assigned in table MNATMCON, a connection number (CON) is assigned.

Note: The CNO number in table MNATMCON must be unique for that SPM.

To modify a tuple in table MNATMCON, make sure all member are out of service. To delete a parent carrier tuple in table MNHSCARR, remove any connections provisioned against it in table MNATMCON.

No data in the connections tuple can be modified. To change a tuple, it must be deleted and then reentered through table control.

Datafill sequence and implications

Table MNHSCARR must be datafilled before table MNATMCON.

Table TRKMEM must be datafilled after table MNATMCON.

Table size

The maximum size is 5,376 tuples.

Datafill

The key is composed of the first three fields in a tuple. Along with the key, each tuple contains a vpi, vci, AAL type and the parent carrier ID. The data specific to AAL-5 is the application ID and the transmission direction.

MNATMCON (continued)

The following table lists datafill for table MNATMCON.

Field descriptions

Field	Range of values	Explanation and action
NODETYP	SPM	Peripheral type is always SPM
SPMNUM	0 TO 63	SPM number
CONN	0 TO 181	Connection number assigned by user
VPI	0 TO 255	Virtual path identifier
VCI	6 - (64K-1)	Virtual channel identifier
AAL	{1}	Adaptation layer
PCARRID	0 to 181	Parent carrier ID is the carrier number from table MNHSCARR. The PM_TYPE, PM_NO and the PCARRID can be combined to form a carrier id in table MNHSCARR.

Datafill example

The following example shows sample datafill for table MNATMCON.

MAP display example for table MNATMCON

```
SPM  0  0 1  1  5  24
SPM  1  63 83  1  5  24
_____________________________________________________________________
```

Dump and restore

The new MNATMCON table is a dump and restore table. It is restored after table MNHSCARR during a sortware upgrade. The dump and restore of table MNATMCON writes the physical tuples through the OAM&P database in their sequential search order.

Activation

This table is not activated by SOC.

Table history

SP11

MNATMCON table was added.

Supplementary information

Not applicable

MNCKTPAK

Table name

Management Network Circuit Pack (MNCKTPAK)

Functional description

Table MNCKTPAK is one of seven DMS-Spectrum Peripheral Module (SPM) configuration tables. In this table, each tuple identifies 1 of 15 circuit packs on a shelf. The data maintained in this table includes the circuit pack type, product engineering code (PEC), load name, and slot number.

Datafill sequence and implications

Datafill tables in the following order:

1. table PMLOADS

   Note: Table PMLOADS specifies the location of a particular load file. Datafill PMLOADS only once. There is no need to datafill PMLOADS for each SPM added to the system unless a new load file entry has to be added to table PMLOADS.

2. table MNPRTGRP
3. table MNNODE
4. table MNSHELF
5. table MNCKTPAK

   Note: Table TRKMEM is datafilled after table MNCKTPAK when the office is configured with SPMs with ISUP or per-trunk signaling (PTS) trunks.

6. table MNLINK
7. table MNHSCARR
8. table MNPRIIID

   Note: Table MNPRIIID is datafilled only when configuring an office with SPMs with PRI trunks.

ATTENTION

Some resource modules mentioned in the following discussion do not apply to all markets.

MNCKTPAK (continued)

If the protection group specified by the OC3, DLC, DSP, ATM, or VSP group identifier has not been added to table MNPRTGRP, one of the following messages display:

```
Can not find the corresponding OC3_GRP in table
MNPRTGRP

Can not find the corresponding DLC_GRP in table
MNPRTGRP

Can not find the corresponding DSP_GRP in table
MNPRTGRP

Can not find the corresponding ATM_GRP in table
MNPRTGRP

Can not find the corresponding VSP_GRP in table
MNPRTGRP
```

If the shelf specified by SHELFID has not been added to table MNSHELF, the following message displays:

```
Can not find the shelf MNPRTGRP
```

If the load specified by field LOAD has not been added to table PMLOADS, one of these messages display:

```
Can not load file xxxxx

Please datafill load file in table PMLOADS first
```

Table size

The maximum number of tuples in the table is 1,662.

Field descriptions

CPKTYPE = CEM

When CPKTYPE equals CEM (common equipment module), the datafill is as shown in the following table.

(Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
CPKTYPE		CEM	COMMON EQUIPMENT MODULE. The subfields are UNITNO and ALARMCTRL.
	UNITNO	0-1	UNIT NUMBER. Enter the CEM unit number. There are a maximum of two CEMs per SPM. Unit number 0 is assigned to the CEM residing on shelf 0 slot 7. Unit number 1 is assigned to the CEM residing on shelf 0 slot 8. The default is 0.
	ALRMCTRL	See subfields	ALARM CONTROL. The field is a vector of up to 10 entries. Each entry in the vector controls a particular alarm for the CEM circuit pack. To accept the system defaults, enter $. For each entry, the subfields are ALARM and ATTR.
	ALARM	SYSB, MANB, ISTB, SYSBNA, MANBNA, HOLDOVR, HLDOVR24, VCXO70, VCXO90, CLKOOS	ALARM NAME. The alarms are described as follows: SYSB (system busy) The alarm generates when the CEM is in system busy state. The default alarm severity is CR. The default action is RPT. MANB (manual busy) The alarm generates when the CEM is in manual busy state. The default alarm severity is MJ. The default action is RPT. ISTB (in-service-trouble) The alarm generates when the CEM is in-service and it is experiencing non-service-affecting faults. The default alarm severity is MN. The default action is RPT.

MNCKTPAK (continued)

(Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
			SYSBNA (system busy and not accessible) The alarm generates when the CEM is in SYSB state and a network error (for example, ENET or MS) has caused it to be isolated. The default alarm severity is CR. The default action is RPT. MANBNA (manual busy and not accessible) The alarm generates when the CEM is in MANB state and a network error (for example, ENET or MS) has caused it to be isolated. The default alarm severity is MJ. The default action is RPT. HLDOVR (hold-over) The alarm generates when synchronization circuitry loses all its available timing references and goes into hold-over state. The default alarm severity is MJ. The default action is RPT. HLDOVR24 (hold-over-24) The alarm generates when synchronization circuitry has remained in hold-over state for more than 24 hours. The default alarm severity is MJ. The default action is RPT. VCXO70 (voltage-controlled-oscillator 70% threshold crossed) The alarm generates when the voltage controller must exceed 70% threshold of its dynamically adjustable range in order to keep the CEM synchronized to a timing reference. This is an indication that the circuit pack should be replaced. The default alarm severity is MN. The default action is RPT. VCXO90 (voltage-controlled-crystal-oscillator 90% threshold crossed) The alarm generates when the voltage controller must exceed 90% threshold of its dynamically adjustable range in order to keep the CEM synchronized to a timing reference. This is an indication that the circuit pack should be replaced; otherwise, a synchronization failure may occur. The default alarm severity is MJ. The default action is RPT.

(Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
			CLKOOS (clock out-of-specification) The alarm generates when the synchronization circuitry cannot meet standard performance specifications for its applications. Typically, this happens when the message switch (MS) has lost its synchronization or no adequate SONET (synchronous optical network) synchronization reference is available. The default alarm severity is MJ. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTE. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	SEVERITY. Enter one of the following alarm severities: • NA (no alarm severity) • MN (minor) • MJ (major) • CR (critical)
	ACTION	RPT, NRPT	ACTION. Enter one of the following actions: • RPT (reportable) • NRPT (no reportable)
PEC		NTLX63AA, NTLX82AA, NTLX82BA, NTLX82EA	PRODUCT ENGINEERING CODE. This field indicates the product engineering code (PEC) of the circuit pack. Select an entry as follows: • NTLX63AA for CEM circuit packs ***Note:*** The NTLX63AA CEM is not compatible with SP15. • NTLX82AA or NTLX82BA for enhanced CEM circuit packs • MG 4000 nodes require NTLX82EA.

MNCKTPAK (continued)

(Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
RELEASE		01-99 or 01-ZZ	RELEASE. This field indicates the release of the circuit pack. The default is 01. Select an entry as follows: • For a Nortel product, valid values include 01 to 99. • For a non-Nortel Networks (third-party vendor) product, valid values include 01 to ZZ.
LOAD		up to 8 alphanumeric characters	This field indicates the default software load for the circuit pack. The default load name entry must be added to table PMLOADS first; otherwise, messages “Can not find load file xxxxx" and “Please datafill load file in table PMLOADS first" display.

CPKTYPE = OC3

ATTENTION

In the case of an SPM, a circuit pack is datafilled as a sync source in table SYNCLK. Because this circuit pack is datafilled through table MNCKTPAK, a dependency exists between table SYNCLK and table MNCKTPAK. A circuit pack cannot be deleted from table MNCKTPAK if it is in use by table SYNCLK. If an attempt is made to delete the tuple in table MNCKTPAK, the deletion is blocked and the following message displays: “This circuit pack is specified as clock sync source in SYNCLK.”

If CPKTYPE equals OC3 (optical carrier 3), the datafill is as shown in the following table.

(Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
CPKTYPE		OC3	OPTICAL CARRIER 3. The subfields are UNITNO, OC3GRPID, WKRSPR, and ALARMCTRL.
	UNITNO	0-1	UNIT NUMBER. Enter the OC-3 unit number. There is a maximum of two OC-3s per SPM. Assign unit number 0 to the OC-3 residing on shelf 0, slot 9. Assign unit number 1 to the OC-3 residing on shelf 0, slot 10.
	OC3GRPID	1-28	OC3 GROUP IDENTIFIER. Enter the OC-3 protection group identifier in table MNPRTGRP. ***Note:*** An OC3_GRP protection group must be added to table MNPRTGRP before datafilling the OC-3 circuit pack. If not, the message “Can not find the corresponding OC3_GRP in table MNPRTGRP" displays. The two OC-3s must belong to the same protection group.

MNCKTPAK (continued)

(Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	WRKSPR	WORKING, SPARE	WORKING, SPARE. Enter the OC-3 protection role designation as follows: • WORKING indicates the circuit pack is designated to provide service. • SPARE indicates the circuit pack is designated to standby and take over the service if the WORKING circuit pack fails. ***Note:*** There is a maximum of two OC-3s per SPM. Datafill one OC-3 as WORKING and datafill the other one as SPARE.
	ALRMCTRL	See subfields	ALARM CONTROL INFORMATION. The field is a vector of up to 4 entries. Each entry in the vector controls a particular alarm for the OC-3 circuit pack. To accept the default values, enter $. For each entry, the subfields are ALARM and ATTR.
	ALARM	SYSB, MANB, ISTB, PROTFAIL	ALARM TYPE. Enter one of the following alarm types: • SYSB (system busy) The alarm generates when the OC-3 is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) The alarm generates when the OC-3 is in manual busy state. The default alarm severity is MJ. The default action is RPT. • ISTB (in-service trouble) The alarm generates when the OC-3 is in service and is experience non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • PROTFAIL (protection failure) The alarm generates when protection switching fails. The default alarm severity is NA. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTE. The subfields are SEVERITY and ACTION.

(Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, CR, MJ	SEVERITY. Enter one of the following alarm severities: • NA (no alarm severity) • MN (minor) • CR (critical) • MJ (major)
	ACTION	RPT, NRPT	ACTION. Enter one of the following actions: • RPT (reportable) • NRPT (no reportable)
PEC		NTLX71AA, NTLX71BA	PRODUCT ENGINEERING CODE. This field indicates the product engineering code (PEC) of the circuit pack. Select an entry as follows: • NTLX71AA for OC-3 circuit pack • NTLX71BA for OC-3 circuit packs bearing the PEC code suffix “BA.”
RELEASE		01-99 or 01-ZZ	RELEASE. This field indicates the release of the circuit pack. The default is 01. Select an entry as follows: • For a Nortel product, valid values include 01 to 99. • For a non-Nortel (third-party vendor) product, valid values include 01 to ZZ.
LOAD		up to 8 alphanumeric characters	This field indicates the default software load for the circuit pack. The default load name entry must be added to table PMLOADS first; otherwise, messages “Can not find load file <xxxxxx>" and “Please datafill load file in table PMLOADS first" display.

MNCKTPAK (continued)

CPKTYPE = DSP

If CPKTYPE equals DSP (digital signal processor), the datafill is as shown in the following table.

(Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
CPKTYPE		DSP	DIGITAL SIGNAL PROCESSOR. The subfields are UNITNO, DSPGRPID, and RSRINFO.
	UNITNO	0-27	UNIT NUMBER. Enter the DSP unit number. The default is 0.
	DSPGRPID	1-28	DSP GROUP IDENTIFIER. Enter the corresponding DSP_GRP protection group in table MNPRTGRP. The DSP_GRP protection group must be added to table MNPRTGRP before datafilling the DSP circuit pack; otherwise, message “Can not find the corresponding DSP_GRP in table MNPRTGRP" displays. Typically, the DSP circuit packs on the SPM are partitioned into different protection groups. Within each protection group, some are designated as WORKING to provide service, and others are designated as SPARE to standby. The default is 1.
	RSRINFO	See subfields	RSRINFO indicates the type of the resource and the number of the resource to be provided by the DSP circuit pack. Circuit packs can be configured as spares or working devices. Each working entry consists of a vector of up to six multiples of subfields RSRTYPE and NUM.
	WRKSPR	SPARE or WORKING	DSP RESOURCE CONFIGURATION. This field is refined based on whether the DSP is designated as SPARE or WORKING. The default value is WORKING. If the entry is WORKING, datafill refinements RSRTYPE and NUM.

(Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	RSRTYPE	COT, DTMF, TONESYN, ABBIT, MF, UKTONE, GERTONE, FRATONE, HOLTONE, BELTONE, BRATONE, ITATONE, SPATONE	RESOURCE TYPE. This field specifies the SPM service resources that require threshold control. Valid resources are • COT (continuity test resource) • DTMF (dual tone multifrequency receiver resource) • TONESYN (tone synthesizer resource) • ABBIT (A- and B-bit signaling resource) ***Note:*** See “Supplementary information" for more detail about changing or deleting a tuple. • MF (multifrequency signaling resource) • UKTONE (UK tone synthesizer resource) • GERTONE (German tone synthesizer resource) • FRATONE (French tone synthesizer resource) • HOLTONE (Holland tone synthesizer resource) • BELTONE (Belgian tone synthesizer resource) • BRATONE (Brazillian tone synthesizer resource) • ITATONE (Italian tone synthesizer resource) • SPATONE (Spanish tone synthesizer resource) ***Note:*** Only one type of tone synthesizer resource is to be datafilled on all RMs on a given SPM; that is, only one type per node is allowable.

MNCKTPAK (continued)

(Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	NUM	0 to 736(0 to 28 for ABBIT)	NUMBER OF RESOURCES. Enter the total number of resources datafilled on the DSP circuit pack. ***Note:*** If field RSRTYPE is datafilled with ABBIT, the range for field NUM is 0 to 28.
	ALRMCTRL	See subfields	ALARM CONTROL INFORMATION. To accept the system defaults, enter $. The field is a vector of up to 4 entries. Each entry in the vector controls a particular alarm for the DSP circuit pack. For each entry, the subfields are ALARM and ATTR.
	ALARM	SYSB, MANB, ISTB, PROTFAIL	ALARM NAME. Enter one of the following alarms: • SYSB (system busy) The alarm generates when the DSP is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) The alarm generates when the DSP is in manual busy state. The default alarm severity is MJ. The default action is RPT. • ISTB (in-service trouble) The alarm generates when the DSP is in service and is experience non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • PROTFAIL (protection failure) The alarm generates when protection switching fails. The default alarm severity is NA. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTE. The subfields are SEVERITY and ACTION.

(Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This subfield defines the relative importance of an alarm. Valid values are • NA (no alarm severity) • CR (critical) • MJ (major) • MN (minor)
	ACTION	RPT, NRPT	ACTION. Enter one of the following actions: • RPT (reportable) • NRPT (no reportable)
PEC		NTLX65AA, NTLX65BA	PRODUCT ENGINEERING CODE. This field indicates the product engineering code (PEC) of the circuit pack. Select an entry as follows: • NTLX65AA for DSP circuit pack (the default) • NTLX65BA for DSP circuit packs bearing the PEC code suffix “BA.”
RELEASE		01-99, 01-ZZ	RELEASE. This field indicates the release of the circuit pack. The default is 01. Select an entry as follows: • For a Nortel product, valid values include 01 to 99. • For a non-Nortel (third-party vendor) product, valid values include 01 to ZZ.
LOAD		up to 8 alphanumeric characters	This field indicates the default software load for the circuit pack. The default load name entry must be added to table PMLOADS first; otherwise, messages “Can not find load file <xxxxxx>" and “Please datafill load file in table PMLOADS first" display.

MNCKTPAK (continued)

CPKTYPE = VSP

If CPKTYPE equals VSP (voice services processor), the datafill is as shown in the following table.

(Sheet 1 of 5)

Field	Subfield or refinement	Entry	Explanation and action
CPKTYPE		VSP	VOICE SERVICES PROCESSOR. The subfields are UNITNO, VSPGRPID, and RSRINFO.
	UNITNO	0-27	UNIT NUMBER. Enter the VSP unit number. The default is 0.
	VSPGRPID	1-28	VSP_GRP IDENTIFICATION. This field indicates the identification of the corresponding VSP_GRP protection group in table MNPRTGRP. The VSP_GRP protection group must be added to table MNPRTGRP before datafilling the VSP circuit packs. If not, the message “Can not find the corresponding VSP_GRP in table MNPRTGRP" displays. Typically, the VSP circuit packs on a SPM are partitioned into different protection groups. Within each protection group, some are designated as WORKING to provide service and others are designated as SPARE to standby. The default is 1.
	RSRINFO	See subfields	RSRINFO indicates the type of the resource and the number of the resource to be provided by the VSP circuit pack. Circuit packs can be configured as spares or working devices. Each working entry consists of a vector of up to six multiples of subfields RSRTYPE and NUM.
	WRKSPR	SPARE or WORKING	VSP RESOURCE CONFIGURATION. This field is refined based on whether the VSP is designated as SPARE or WORKING. The default value is WORKING. If the entry is WORKING, datafill refinements RSRTYPE and NUM.

(Sheet 2 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	RSRTYPE	COT, DTMF, ECAN, TONESYN, ABBIT, MF, UKTONE, GERTONE, FRATONE, HOLTONE, BELTONE, BRATONE, ITATONE, SPATONE	RESOURCE TYPE. This field specifies the SPM service resources that require threshold control. Valid resources are • COT (continuity test resource) • DTMF (dual tone multifrequency receiver resource) • ECAN (echo cancellation resource) • TONESYN (tone synthesizer resource) • ABBIT (A- and B-bit signaling resource) ***Note:*** See “Supplementary information" for more detail about changing or deleting a tuple. • MF (multifrequency signaling resource) • UKTONE (UK tone synthesizer resource) • GERTONE (German tone synthesizer resource) • FRATONE (French tone synthesizer resource) • HOLTONE (Holland tone synthesizer resource) • BELTONE (Belgian tone synthesizer resource) • BRATONE (Brazillian tone synthesizer resource) • ITATONE (Italian tone synthesizer resource) • SPATONE (Spanish tone synthesizer resource) ***Note:*** Only one type of tone synthesizer resource is to be datafilled on all RMs on a given SPM; that is, only one type per node is allowable.

MNCKTPAK (continued)

(Sheet 3 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	NUM	0-736	NUMBER OF RESOURCES. Edit checks during datafill allow a value of 0 to 736. However, various circuit packs may impose their own lower limits. For example, PEC codes NTLX66AA and NTLX66BA allow a maximum of 260 echo cancellation resources, and PEC codes NTLX85AA and NTLX86AA allow a maximum of 336 echo cancellation resources. The actual maximum number of resources depends on the mix of applications configured.
	ALRMCTRL	See subfields	ALARM CONTROL INFORMATION. To accept the system defaults, enter $. The field is a vector of up to 4 entries. Each entry in the vector controls a particular alarm for the VSP circuit pack. For each entry, the subfields are ALARM and ATTR.
	ALARM	SYSB, MANB, ISTB, PROTFAIL	ALARM TYPE. Enter one of the following alarm types: • SYSB (system busy) The alarm generates when the VSP is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) The alarm generates when the VSP is in manual busy state. The default alarm severity is MJ. The default action is RPT. • ISTB (in-service trouble) The alarm generates when the VSP is in service and is experience non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • PROTFAIL (protection failure) The alarm generates when protection switching fails. The default alarm severity is NA. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTE. The subfields are SEVERITY and ACTION.

(Sheet 4 of 5)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, CR, MJ	SEVERITY. Enter one of the following alarm severities: • NA (no alarm severity) • MN (minor) • CR (critical) • MJ (major)
	ACTION	RPT, NRPT	ACTION. Enter one of the following actions: • RPT (reportable, the default value) • NRPT (no reportable)
PEC		NTLX66AA, NTLX66BA, NTLX85AA, NTLX86AA	PRODUCT ENGINEERING CODE. This field indicates the PEC of the circuit pack. Select an entry as follows: • NTLX66AA for VSP circuit packs manufactured by Nortel Networks; a string of 8 characters for non-NORTEL (third-party vendor) VSP circuit packs • NTLX66BA for VSP circuit packs bearing the PEC code suffix “BA.” • NTLX85AA or NTLX86AA for third party VSP circuit packs. ***Note:*** The NTLX85AA and NTLX86AA VSP RMs are OEM products sometimes referred to as echo canceller resource modules, or ECRMs.

MNCKTPAK (continued)

(Sheet 5 of 5)

Field	Subfield or refinement	Entry	Explanation and action
RELEASE		01-99 or 01-ZZ	RELEASE. This field indicates the release of the circuit pack. The default is 01. Select an entry as follows: • For a Nortel product, valid values include 01 to 99. • For a non-Nortel (third-party vendor) product, valid values include 01 to ZZ.
LOAD		up to 8 alphanumeric characters	This field indicates the default software load for the circuit pack. The default load name entry must be added to table PMLOADS first; otherwise, messages “Can not find load file <xxxxxx>" and “Please datafill load file in table PMLOADS first" display.

CPKTYPE = ATM

ATTENTION
ATM is not applicable to all markets.

If CPKTYPE equals ATM (asynchronous transfer mode), the datafill is as shown in the following table.

(Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
CPKTYPE		ATM	ASYNCHRONOUS TRANSFER MODE. The subfields are UNITNO, ATMGRPID, WRKSPR, and ALARMCNTRL.
	UNITNO	0-1	UNIT NUMBER. Enter the ATM unit number. The default is 0.
	ATMGRPID	1-28	ATM GROUP IDENTIFIER.
	WRKSPR	SPARE or WORKING	ATM RESOURCE CONFIGURATION. This field is refined based on whether the ATM is designated as SPARE or WORKING.
	ALRMCTRL	See subfields	ALARM CONTROL INFORMATION. To accept the system defaults, enter $. The field is a vector of up to 4 entries. Each entry in the vector controls a particular alarm for the ATM circuit pack. For each entry, the subfields are ALARM and ATTR.

MNCKTPAK (continued)

(Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	ALARM	SYSB, MANB, ISTB, PROTFAIL	ALARM NAME. Enter one of the following alarms: • SYSB (system busy) The alarm generates when the ATM is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) The alarm generates when the ATM is in manual busy state. The default alarm severity is MJ. The default action is RPT. • ISTB (in-service trouble) The alarm generates when the ATM is in service and is experience non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • PROTFAIL (protection failure) The alarm generates when protection switching fails. The default alarm severity is NA. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTE. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This subfield defines the relative importance of an alarm. Valid values are • NA (no alarm severity) • CR (critical) • MJ (major) • MN (minor)
	ACTION	RPT, NRPT	ACTION. Enter one of the following actions: • RPT (reportable) • NRPT (no reportable)

(Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
PEC		NTLX73AA, NTLX73BA	PRODUCT ENGINEERING CODE. This field indicates the product engineering code (PEC) of the circuit pack. Select an entry as follows: • NTLX73AA for ATM circuit pack • NTLX73BA for ATM circuit packs bearing the PEC code suffix “BA.”
RELEASE		01-99, 01-ZZ	RELEASE. This field indicates the release of the circuit pack. The default is 01. Select an entry as follows: • For a Nortel product, valid values include 01 to 99. • For a non-Nortel (third-party vendor) product, valid values include 01 to ZZ.
LOAD		up to 8 alphanumeric characters	This field indicates the default software load for the circuit pack. The default load name entry must be added to table PMLOADS first; otherwise, messages “Can not find load file <xxxxxx>" and “Please datafill load file in table PMLOADS first" display.

CPKTYPE = ALM

ATTENTION
ALM is not applicable to all markets.

If CPKTYPE equals ALM (alarm), the datafill is as shown in the following table.

MNCKTPAK (continued)

(Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
CPKTYPE		ALM	ALARM. The subfields are UNITNO, ALMRMGRPID, WRKSPR, and ALARMCNTRL.
	UNITNO	0-1	UNIT NUMBER. Enter the ALM unit number. The default is 0.
	ALMRMGRPID	1-28	ALM GROUP IDENTIFIER.
	WRKSPR	SPARE or WORKING	ALM RESOURCE CONFIGURATION. This field is refined based on whether the ALM is designated as SPARE or WORKING.
	ALRMCTRL	See subfields	ALARM CONTROL INFORMATION. To accept the system defaults, enter $. The field is a vector of up to 4 entries. Each entry in the vector controls a particular alarm for the ALM circuit pack. For each entry, the subfields are ALARM and ATTR.
	ALARM	SYSB, MANB, ISTB, PROTFAIL	ALARM NAME. Enter one of the following alarms: • SYSB (system busy) The alarm generates when the ALM is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) The alarm generates when the ALM is in manual busy state. The default alarm severity is MJ. The default action is RPT. • ISTB (in-service trouble) The alarm generates when the ALM is in service and is experience non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • PROTFAIL (protection failure) The alarm generates when protection switching fails. The default alarm severity is NA. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTE. The subfields are SEVERITY and ACTION.

(Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This subfield defines the relative importance of an alarm. Valid values are • NA (no alarm severity) • CR (critical) • MJ (major) • MN (minor)
	ACTION	RPT, NRPT	ACTION. Enter one of the following actions: • RPT (reportable) • NRPT (no reportable)
PEC		NTLX83AA	PRODUCT ENGINEERING CODE. This field indicates the product engineering code (PEC) of the circuit pack. Select an entry as follows: • NTLX83AA for ALM circuit pack
RELEASE		01-99, 01-ZZ	RELEASE. This field indicates the release of the circuit pack. The default is 01. Select an entry as follows: • For a Nortel product, valid values include 01 to 99. • For a non-Nortel (third-party vendor) product, valid values include 01 to ZZ.
LOAD		NILLOAD	The ALM circuit pack does not require a software load. Datafill “NILLOAD” for the load name.

MNCKTPAK (continued)

CPKTYPE = DLC

If CPKTYPE equals DLC (data link controller), the datafill is as shown in the following table.

(Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
CPKTYPE		DLC	DATA LINK CONTROLLER. The subfields are UNITNO, DLCGRPID, WKRSPR, and ALARMCTRL.
	UNITNO	0-27	UNIT NUMBER. Enter the DLC unit number. The default is 0.
	DLCGRPID	1-28	DLC GROUP IDENTIFIER. Enter the DLC protection group identifier in table MNPRTGRP. Add the DLC_GRP protection group to table MNPRTGRP before datafilling the DLC circuit pack; otherwise, the message "Can not find the corresponding DLC_GRP in table MNPRTGRP" displays.
	WRKSPR	WORKING, SPARE	WORKING, SPARE. Enter the protection role designation as follows: • WORKING indicates the circuit pack is designated to provide service. • SPARE indicates the circuit pack is designated to standby and take over the service if the WORKING circuit pack fails. ***Note:*** There is a maximum of two DLCs for each SPM. Datafill one DLC as WORKING and datafill the other one as SPARE.
	ALRMCTRL	See subfields	ALARM CONTROL INFORMATION. The field is a vector of up to 4 entries. Each entry in the vector controls a particular alarm for the DLC circuit pack. To accept the default values, enter $. For each entry, the subfields are ALARM and ATTR.

MNCKTPAK (continued)

(Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	ALARM	SYSB, MANB, ISTB, PROTFAIL	ALARM TYPE. Enter one of the following alarm types: • SYSB (system busy) The alarm generates when the DLC is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) The alarm generates when the DLC is in manual busy state. The default alarm severity is MJ. The default action is RPT. • ISTB (in-service trouble) The alarm generates when the DLC is in service and is experience non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • PROTFAIL (protection failure) The alarm generates when protection switching fails. The default alarm severity is NA. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTE. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, CR, MJ	SEVERITY. Enter one of the following alarm severities: • NA (no alarm severity) • MN (minor) • CR (critical) • MJ (major)
	ACTION	RPT, NRPT	ACTION. Enter one of the following actions: • RPT (reportable) • NRPT (no reportable)
PEC		NTLX72AA	PRODUCT ENGINEERING CODE. This field indicates the product engineering code (PEC) of the circuit pack. Select the entry as follows: • NTLX72AA for DLC circuit pack

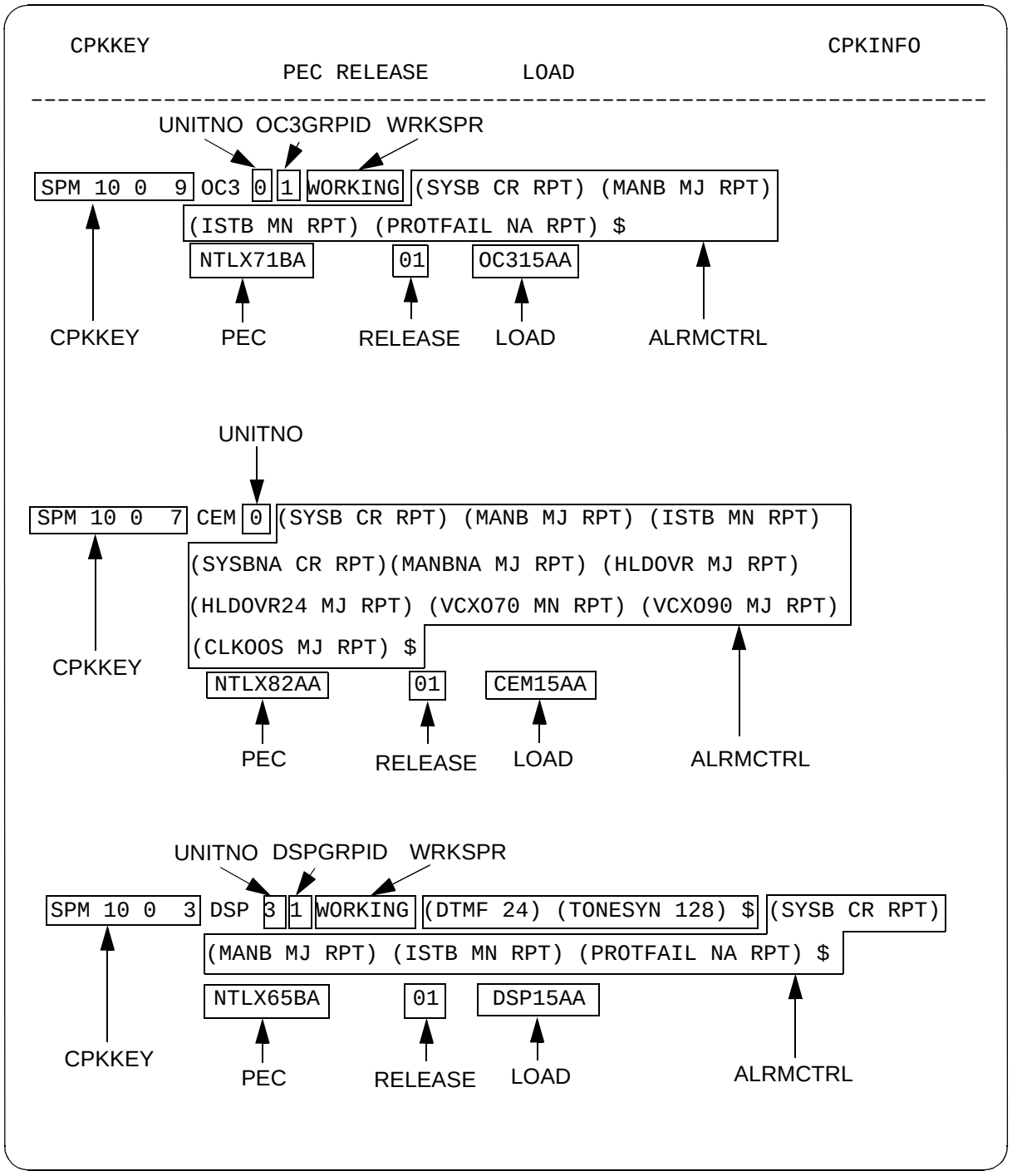
MNCKTPAK (continued)

(Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
RELEASE		01-99 or 01-ZZ	RELEASE. This field indicates the release of the circuit pack. The default is 01. Select an entry as follows: • For a Nortel product, valid values include 01 to 99. • For a non-Nortel (third-party vendor) product, valid values include 01 to ZZ.
LOAD		up to 8 alphanumeric characters	This field indicates the default software load for the circuit pack. The default load name entry must be added to table PMLOADS first; otherwise, messages “Can not find load file <xxxxxx>" and “Please datafill load file in table PMLOADS first" display.

Datafill example

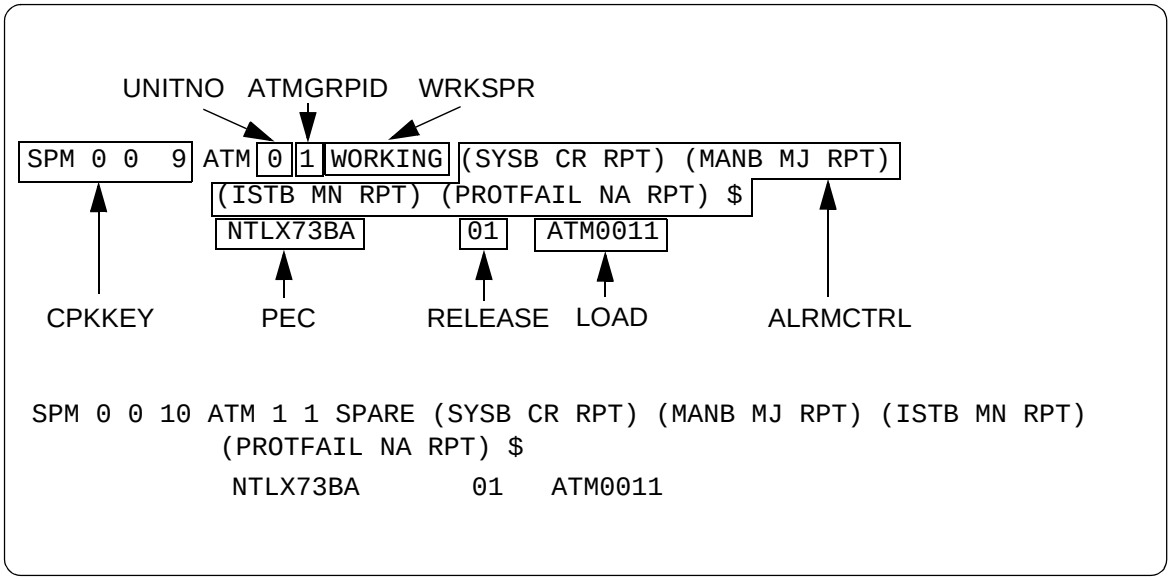
The following shows sample datafill for table MNCKTPAK.


CPKKEY
CPKINFO
PEC RELEASE LOAD
UNITNO OC3GRPID WRKSPR
SPM 10 0 9 OC3 0 1 WORKING (SYSB CR RPT) (MANB MJ RPT)
(ISTB MN RPT) (PROTFAIL NA RPT) $
NTLX71BA 01 OC315AA
CPKKEY
PEC
RELEASE
LOAD
ALRMCTRL
UNITNO
SPM 10 0 7 CEM 0 (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
(SYSBNA CR RPT)(MANBNA MJ RPT) (HLDOVR MJ RPT)
(HLDOVR24 MJ RPT) (VCXO70 MN RPT) (VCXO90 MJ RPT)
(CLKOOS MJ RPT) $
CPKKEY
NTLX82AA 01 CEM15AA
PEC
RELEASE
LOAD
ALRMCTRL
UNITNO DSPGRPID WRKSPR
SPM 10 0 3 DSP 3 1 WORKING (DTMF 24) (TONESYN 128) $ (SYSB CR RPT)
(MANB MJ RPT) (ISTB MN RPT) (PROTFAIL NA RPT) $
NTLX65BA 01 DSP15AA
CPKKEY
PEC
RELEASE
LOAD
ALRMCTRL

MNCKTPAK (continued)

The following figure shows sample datafill for table MNCKTPAK using PECs introduced in MSH12 (NTLX73BA).

Note: ATM is not applicable to all markets.




```
SPM 0 0 10 ATM 1 1 SPARE (SYSB CR RPT) (MANB MJ RPT) (ISTB MN RPT)
           (PROTFAIL NA RPT) $
            NTLX73BA       01   ATM0011
```

MAP display example for DLC card in table MNCKTPAK

```
SPM 9 1 7 DLC 0 1 WORKING $ NTLX72AA 01 DLC0015
```

The following figure shows sample datafill for table MNCKTPAK for BRDG_ONLY interworking (IW) SPMs, introduced in SN06.

```
CPKKEY                                                        CPKINFO
                        PEC  RELEASE       LOAD
-------------------------------------------------------------------------------
       SPM 14 1  3 VSP 0 1 WORKING (ECAN 336 ) $ (SYSB CR RPT)
                   (MANB MJ RPT) (ISTB MN RPT) (PROTFAIL CR RPT)
                   (PATCHFAIL MJ RPT) $
                   NTLX85AA       01    COH0019
```

Table history

SN06 (DMS)

Voice Services Processor (VSP) cards may now be provisioned on BRDG_ONLY interworking (IW) SPMs.

SP17 (CSP17)

Added the alarm (ALM) card to the list of valid circuit packs.

MMP16

Documentation feature 59026237 makes use of existing datafill that had not been previously documented.

SP15 (CSP15)

Added a note that the NTLX63AA CEM is not compatible with SP15.

Added NTLX82BA to the range of valid PECs based on features 59018984 and 59019804.

Added notes and attention boxes indicating ATM is not applicable to all markets.

Removed paragraph that indicated the MG 4000 was provisioned through the Succession Network Manager and added NTLX82EA to the list of PECs.

SNH01

Changed datafill examples. Removed references to STA for SR 10366713.

SP14 (CSP13/14)

Added precaution to CPKTYPE = OC3 warning of the interdependency of tables MNCKTPAK and SYNCLK when OC3 is datafilled as a sync source.

Added international tone synthesizer resources to CPKTYPE = DSP and CPKTYPE = VSP per SR 10342332.

MSH12

Added NTLX73BA to the range of valid PECs and provided datafill example.

SP12 (CSP12)

SR 10343869 changed the VSP datafill information in table MNCKTPAK.

Added NTLX65BA, NTLX66BA, NTLX71BA, NTLX72AA, NTLX82AA, NTLX85AA, and NTLX86AA to the range of valid PEC codes and DLC to the range of valid circuit packs.

MNCKTPAK (continued)

Added “Procedure for removing a tuple from MNCKTPAK” and substantially rewrote the “Procedure for modifying a tuple in table MNCKTPAK.” These changes are based on SR NR00582, SR 10301661, and design document AD8507.ab03.

SP11 (CSP11)

Added ATM to the range of valid circuit packs and NTLX73AA to the range of valid PEC codes.

SP10 (CSP10)

Added “Modifying provisioned data for RMs" information to “Supplementary information."

SPM01 (CSP09)

Table MNCKTPAK was created.

Supplementary information

The impact of a request to modify a tuple is described in the following paragraphs.

Procedure for modifying a tuple in table MNCKTPAK

Sparing actions between multiple RMs may have occurred since the original data download from the computing module (CM) to the common equipment module (CEM). Also, the services being provided by the RM may or may not be the same as the provisioned services for that RM. Therefore, to change provisioning data for an RM, perform the following steps.

1. Busy (BSY) the RM.
2. Return to service (RTS) the RM.
3. Busy (BSY) the RM that protects the services of the first RM.
4. Return to service (RTS) the RM.

These steps synchronize the provisioned and actual data.

The RM whose datafill is to be changed belongs to a particular protection group. The SPMRESMAN command displays all RMs that are in the same protection group as the RM to be modified. The procedure that follows uses the SPMRESMAN command to provide you with enhanced visibility into the activity status and protection information for the RMs in a protection group.

Note 1: “Provisioned data" is the set of required resources in table MNCKTPAK. This is also referred to by resource management as the “desired configuration" of the RM.

Note 2: "Configured data" is the set of resources that the RM is actually providing. This is also referred to by resource management as the "actual configuration" of the RM. When an RM takes over for another because of a protection switch, it acquires the configured data of the RM it protects. Thus, configured data and provisioned data for a particular RM may differ because of protection switch actions.

Note 3: "Inactive" is the state of the RM when it is not providing service. The RM can be in service when it is inactive.

Note 4: "Active" is the state of the RM when it is providing service. An RM only provides service when it is active and in service.

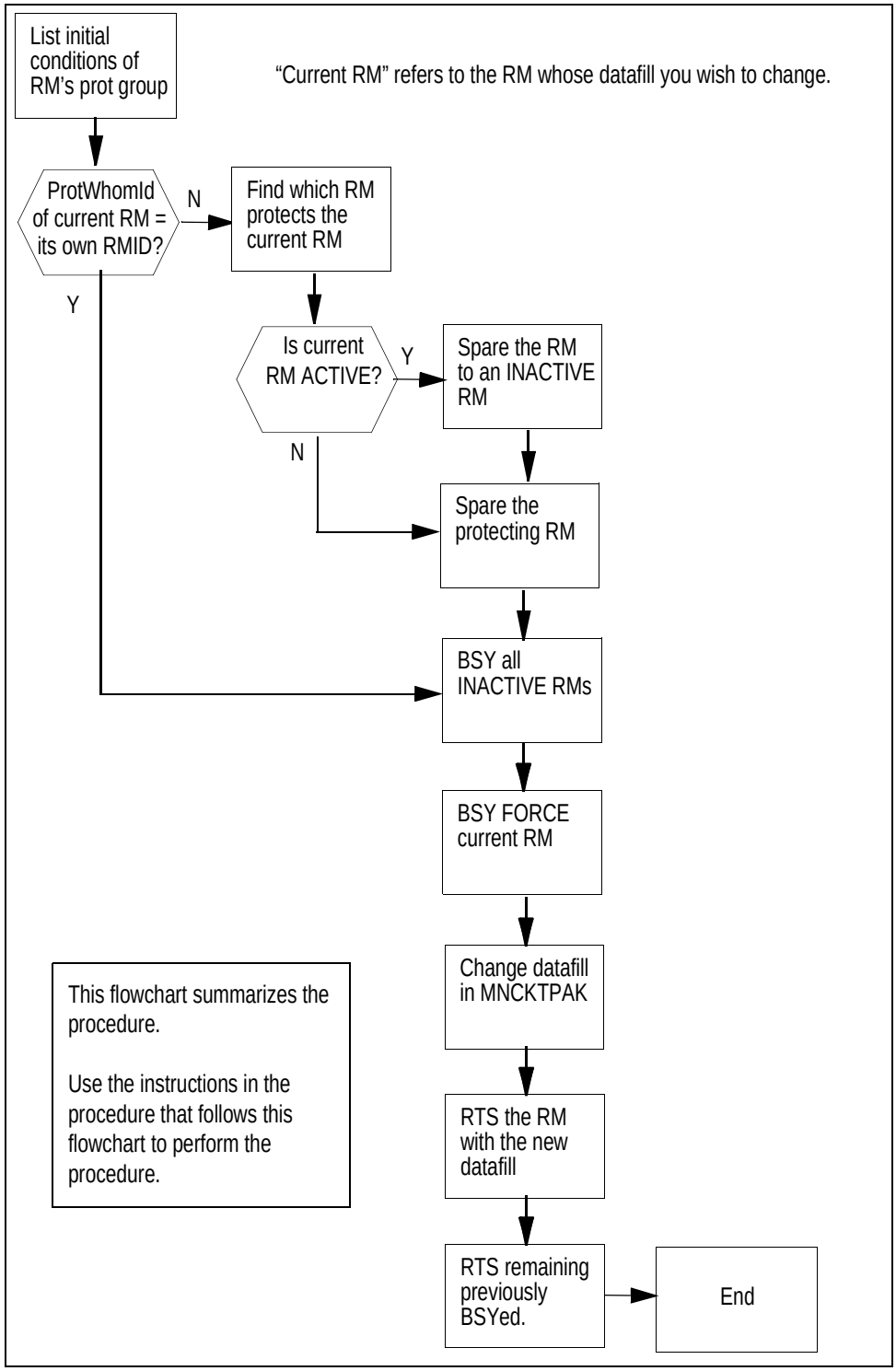
Note 5: The "RMID"(resource module ID) is a number that is formed by the combination of the shelf number and the slot numbers. RMID = (shelf number x 14) + slot number.

Note 6: "ProtWhomID" is a second RMID associated with a specific RM. This number identifies the RM whose services are being protected by this specific RM.

The following flowchart is only a summary of the procedure datafill modification procedure. To perform the procedure, use the instructions in the step-action procedure that follows the flowchart.

MNCKTPAK (continued)

Summary of modifying datafill



Procedure to modify datafill in table MNCKTPAK

At the MAP terminal:

1 Ensure you have access to both the CM and the CEM.

2 Determine the initial conditions of the RMs in the protection group of the RM whose datafill you need to modify.

```
CI> spmresman spm <spm#> [DSP|VSP|DLC] <rm#>
```

where

spm#
is the SPM number of the SPM housing the RM whose datafill is to be changed

rm#
is the number of the RM whose datafill is to be changed

Note: The SPMRESMAN command is available on loads SP12, SP11, or SP10 only if patch DCW25 has been applied. If patch DCW25 has not been applied, you must apply it, then begin this procedure again.

Example of an initial SPMRESMAN command and results

```
>spmresman spm 5 dsp 1
SPM 5
 ProtGroup: 2

         RMID  Activity  ProtWhomID  ProtGrp  Safe to Change?
-------------------------------------------------------------
DSP  0    23    ACTIVE          24        2               NO
DSP  1    24    ACTIVE          25        2               NO
DSP  2    25  INACTIVE          23        2               NO
DSP  3    26    ACTIVE          26        2               NO
DSP  4    27    ACTIVE          27        2               NO
```

For the RM whose datafill needs to be changed, note the values of the RMID, activity state, and ProtWhomID.

If	Do
ProtWhomID is the same as the RM's own RMID, regardless of its activity state	step 6
ProtWhomID is not the same as the RM's own RMID, regardless of its activity state	step 3

3 Determine which RM currently has its ProtWhomID set to the RMID of the RM whose datafill is to be changed.

Example
Assume you want to change the datafill for DSP 1 in the SPMRESMAN output illustrated in step 2. DSP 1 has an RMID of 24. Look for RMID=24 in the ProtWhomID column; you see that DSP 0 has this value. This means DSP 0 is protecting DSP 1.

MNCKTPAK (continued)

4 Using the SPMRESMAN results from step 2, note the activity status of the RM whose datafill you need to change.

If the activity status is ACTIVE, then spare the RM to an INACTIVE RM.

Example
As before, assume you want to change the datafill for DSP 1. Note that its activity status is ACTIVE in the output example in step 2. DSP 2 is INACTIVE, so spare DSP 1 to DSP 2. The following command sequence accomplishes this.

```
mapci; mtc; pm; post spm 5
-->select dsp 1
-->prot
-->manual 1 2
-->y
```

Note: Do not type this example verbatim; remember to substitute appropriate values for your system.

SPMRESMAN command updated results

```
>spmresman spm 5 dsp 1
SPM 5
ProtGroup: 2

        RMID  Activity  ProtWhomID  ProtGrp  Safe to Change?
-------------------------------------------------------------
DSP  0    23    ACTIVE          24        2              NO
DSP  1    24  INACTIVE          23        2              NO
DSP  2    25    ACTIVE          25        2              NO
DSP  3    26    ACTIVE          26        2              NO
DSP  4    27    ACTIVE          27        2              NO
```

Observe that DSP 1, the one whose Datafill you wish to change, is now INACTIVE.

5 Spare the RM (found in step 3) that is protecting the RM whose datafill you want to change. Spare it to the INACTIVE RM from step 4.

Example
Based on the SPMRESMAN output in the preceding step, perform a SPARE operation of DSP 0 to DSP1 (since DSP 0 is currently protecting DSP1, and DSP 1 is INACTIVE). The follow command sequence illustrates this action.

```
mapci; mtc; pm; post spm5; select dsp 0;
-->listres
-->prot
-->manual 0 1
-->y
```

Issue the SPMRESMAN command again. In the sample output that follows, note that DSP 0 is inactive and protecting itself (the RMID and ProtWhomID field are the same), and DSP 1 is active and protecting itself.

SPMRESMAN command updated results

```
>spmresman spm 5 dsp 1
SPM 5
ProtGroup: 2

         RMID  Activity  ProtWhomID  ProtGrp  Safe to Change?
-------------------------------------------------------------
DSP  0    23  INACTIVE          23        2              NO
DSP  1    24    ACTIVE          24        2              NO
DSP  2    25    ACTIVE          25        2              NO
DSP  3    26    ACTIVE          26        2              NO
DSP  4    27    ACTIVE          27        2              NO
```

6 BSY all inactive RMs by entering the following for each one:

CI> mapci;mtc;pm;post spm <#>;select [DSP|VSP|DLC] <#>;bsy force

Example
In the SPMRESMAN output in the preceding step, there is one inactive RM, DSP 0. So you would enter the command

CI> mapci;mtc;pm;post spm 5;select DSP 0; bsy force

SPMRESMAN command results

```
>spmresman spm 5 dsp 1
SPM 5
ProtGroup: 2

         RMID  Activity  ProtWhomID  ProtGrp  Safe to Change?
-------------------------------------------------------------
DSP  0    23  INACTIVE          23        2             YES
DSP  1    24    ACTIVE          24        2              NO
DSP  2    25    ACTIVE          25        2              NO
DSP  3    26    ACTIVE          26        2              NO
DSP  4    27    ACTIVE          27        2              NO
```

In the example printout, note that DSP 0 is inactive and the “safe to change” field is YES.

7 BSY FORCE the RM whose datafill is to be modified by entering the following:

CI> mapci;mtc;pm;post spm <#>;select [DSP|VSP|DSP] <#>;bsy force

SPMRESMAN command results

```
>spmresman spm 5 dsp 1
SPM 5
ProtGroup: 2

        RMID  Activity  ProtWhomID  ProtGrp  Safe to Change?
-------------------------------------------------------------
DSP  0    23  INACTIVE          23        2              YES
DSP  1    24    ACTIVE          24        2              YES
DSP  2    25    ACTIVE          25        2               NO
DSP  3    26    ACTIVE          26        2               NO
DSP  4    27    ACTIVE          27        2               NO
```

Note that the “safe to change” field for the RM whose datafill you wish to change, DSP 1 in the example, now is YES.

8 Change the resource datafill for the RM in table MNCKTPAK.

CI> table mncktpak

TABLE: MNCKTPAK

>rwok on

WRITE ACCESS ENABLED FOR RESTRICTED DATA

>pos spm <#> <shelf#> <slot#>

> change

Continue to provide the new datafill as prompted by the system.

9 RTS the RM whose datafill you modified in the preceding step.

CI> mapci;mtc;pm;post spm <#>;select [DSP|VSP|DLC] <#>;bsy rts

10 RTS the remaining inactive RMs that you busied in step 6 by entering the following command:

CI> mapci;mtc;pm;post spm <#>;select [DSP|VSP|DLC] <#>;bsy rts

The modification to the provisioned data is complete.

Removing a tuple from table MNCKTPAK

Use the following procedure to remove a data tuple from table MNCKTPAK.

Procedure for removing a tuple from table MNCKTPAK

At the MAP display

1 Perform steps 1-7 of the preceding procedure, “Procedure to modify datafill in table MNCKTPAK.”

2 Take offline the RM whose datafill you wish to delete.

3 Delete the tuple for the RM.

4 Perform steps 10 and thereafter in the preceding procedure, “Procedure to modify datafill in table MNCKTPAK.”

Modify an AB-bit resource count

An AB-bit resource is assigned to each DS-1 carrier containing a PTS trunk. When the count of AB-bit resources in the DSP tuple being modified is decreased, a check is made to determine if the new number of AB-bit resources in the SPM where the DSP being modified is located corresponds to the number of DS-1 carriers with PTS trunks. The change is rejected if the total count per SPM falls below the number of DS1 carriers with PTS trunks. The following message displays in such a case:

```
Failed to change count of ABBIT resources for this
DSP. This new count of AB bit resources for its SPM
is less than the number of AB bit resources in use by
PTS trunks configured in table TRKMEM for this SPM.
```

Modify an MF/DTMF resource count

For MF resources, if there are any MF trunks provisioned in table TRKMEM, table MNCKTPAK must contain provisioning for at least one MF resource. When the count for MF resources in the tuple being modified decreases, the system checks to determine if any MF resources remain on the given SPM. The system rejects the change if it does not find at least one MF resource for the SPM while MF trunks are provisioned in table TRKMEM. The following message displays in such a case:

```
ERROR: Cannot delete all remaining MF resources while
in use. You must first delete the SPM PTS trunks in
table TRKMEM whose associated IPULSTYP = MF in table
TRKSGRP.
```

The same is true for DTMF resources. The following message displays if DTMF resources are not available:

```
ERROR: Cannot delete all remaining DTMF resources
while in use. You must first delete the SPM PTS trunks
in table TRKMEM whose associated IPULSTYP = DT in
table TRKSGRP.
```

Delete a tuple that contains AB-bit resources

The count for AB-bit resources on the DSP is deleted from the total AB-bit resources count for the SPM where the DSP is located. The system compares the new count for AB-bit resources with the number of DS-1 carriers with PTS trunks. If the counts do not correspond, the system rejects the change and displays the following message:

```
Failed to delete this DSP.
```

```
The new count of AB bit resources for its SPM is less
than the number of AB bit resources in use by PTS
trunks configured in table TRKMEM for this SPM
```

Delete a tuple containing MF/DTMF resources

The count for MF resources on a given SPM is deleted from the total MF resource count on the SPM. The system compares the new count for MF resources with the number of MF resources on the SPM. If the new count for MF resources = 0 and table TRKMEM contains provisioning for MF trunks, the system rejects the change and displays the following message:

```
ERROR: Cannot delete all remaining MF resources while
in use. You must first delete the SPM PTS trunks in
table TRKMEM whose associated IPULSTYP = MF in table
TRKSGRP.
```

The same check is made for DTMF resources. If all DTMF resources are deleted, the system displays the following message:

```
ERROR: Cannot delete all remaining DTMF resources
while in use. You must first delete the SPM PTS trunks
in table TRKMEM whose associated IPULSTYP = DT in
table TRKSGRP.
```

MNHSCARR

Table name

Management Network High Speed Carrier (MNHSCARR)

Functional description

The MNHSCARR table is one of six tables used to configure a Spectrum Peripheral Module (SPM). The P-side of the OC-3 circuit pack carries a maximum of 175 carriers for OC-3. The P-side of the STM-1 circuit pack carries a maximum of 131 carriers for STM-1. Each tuple in this table identifies a carrier or subcarrier terminating on the SPM.

Datafill sequence and implications

Datafill tables in the following order:

1. PMLOADS

   Note: Table PMLOADS specifies the location of a particular load file. Datafill PMLOADS only once. There is no need to datafill PMLOADS for each SPM added to the system unless a new load file entry has to be added to table PMLOADS.

2. ENCDINV
3. MNPRTGRP
4. MNNODE
5. MNSHELF
6. MNCKTPAK
7. MNLINK
8. MNHSCARR
9. TRKMEM

   Note: There is no need to datafill table TRKMEM unless you want to datafill trunks on the carrier.

When datafilling carriers for an OC-3 resource module (RM), perform the following:

1. Datafill the OC-3 section termination carrier.
2. Datafill the STS-3 line termination carrier.
3. Datafill the STS-1 path termination carrier.

MNHSCARR (continued)

4. Datafill the DS-3 or VT1.5 path termination carrier.
5. Datafill the DS-1 path termination carrier.

When datafilling carriers for an asynchronous transfer mode (ATM) RM, perform the following:

1. Datafill the OC-3 section termination carrier.
2. Datafill the STS-3 line termination carrier.
3. Datafill the STS3cp concatenated path termination carrier.

When datafilling carriers for an STM-1 resource module (RM), perform the following:

1. Datafill the STM1R carriers. The parent is the STM circuit pack in table MNCKTPAK.
2. Datafill the STM1M carriers. The parent carrier is STM1R.
3. Datafill the VC4P carriers. The parent carrier is STM1M.
4. Datafill the VC12P carriers. The parent carrier is VC4P.
5. Datafill the E1P carriers. The parent carrier is VC12P.

Note 1: If you try to add a carrier before adding C-side host links for the SPM to table MNLINK, the terminal displays the following message:

```
Please define host links in table MNLINK first
```

Note 2: If you try to add an OC-3 (OC3S) carrier before adding the OC-3 circuit pack for the SPM to table MNCKTPAK, the terminal displays the following message:

```
Can not find the host OC-3 pack
```

Note 3: If you try to add an STM-1 (STM1R) carrier before adding the STM circuit pack for the SPM to table MNCKTPAK, the terminal displays the following message:

```
Can not find the host STM-1 circuit [?] pack
```

Note 4: If you try to add an STS-3 (STS3L) carrier before adding the STS3L_GRP protection group for the SPM to table MNPRTGRP, the terminal displays the following message:

```
Can not find the corresponding STS3L_GRP
```

Note 5: If you try to add an STM-1 (STM1M) carrier before adding the CARR_GRP protection group for the SPM to table MNPRTGRP, the terminal displays the following message:

```
Can not find the corresponding CARR_GRP
```

Note 6: If you try to add a subcarrier before adding the parent carrier to table MNHSCARR, the terminal displays the following message:

```
Can not find the parent <carrier_type> carrier
```

Table size

OC-3: 0 to 11 648 tuples

STM-1: 0 to 8384 tuples

For STM-1, the table size calculation is as follows:

- maximum number of STM-1 carriers per SPM = 131 (A)
- maximum number of SPMs per DMS switch = 64 (B)
- maximum number of STM-1 carriers per DMS switch = 8384 (A x B)

The maximum table size allowed by OAM-DB (the physical store manager for table MNHSCARR) is 16 000 tuples.

The size of the store required by each physical tuple governs the memory required by each tuple. At present, an estimate of the memory required by each physical tuple is 0.5 kbytes. This estimate does not include any memory required to store the logical and data tuples.

Field descriptions

The following table describes field names, subfield names, and valid data ranges for table MNHSCARR.

Field	Subfield	Entry	Explanation and action
CARRKEY		See subfield	Carrier key. This field consists of subfield CARRNAME. This is the key field to table MNHSCARR.
	CARRNAME	Maximum 38 characters	Carrier name. Enter the name assigned to the carrier.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
CCTNO		1 to 180	Circuit number. Enter the carrier circuit number assigned to the carrier. ***Note:*** Each carrier on the SPM is assigned a unique circuit number that is used by table TRKMEM to datafill SPM trunks. Circuit number (continued) ***Note:*** Only the CCTNO of DS1P or VT15P carriers with a byte synchronous DS-1 payload (BYSYNC _DS1) can be used in table TRKMEM.
CARRINFO		See subfield	Carrier information. This field consists of subfield CARRTYPE and its refinements.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	CARRTYPE	OC3S, STS3L, STS3cP, STS1P, DS3P, VT15P, DS1P, DS1L, STM1R, STM1M, VC4P, VC12P, E1P	Carrier type. Enter the carrier type and datafill the refinements according to the following list: • See "CARRTYPE= OC3S" for OC-3 section termination datafill. • See "CARRINFO = STS3L" for STS-3 line termination datafill. • See "CARRTYPE = STS3cP" for STS-3 line termination datafill. • See "CARRTYPE = STS1P" for STS-1 path termination datafill.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	CARRTYPE (continued)		Carrier type (continued) • See “CARRTYPE = DS3P” for DS-3 path termination datafill. • See “CARRTYPE = VT15P” for V1.5 path termination datafill. • See “CARRTYPE = DS1P” for DS-1 path termination datafill. • See “CARRTYPE = DS1L" for DSIL path carrier datafill. • See “CARRTYPE = STM1R” for STM-1R section termination datafill. • See “CARRTYPE = STM1M” for STM-1M section termination datafill. • See “CARRTYPE = VC4P” for VC4 path termination datafill. • See “CARRTYPE = VC12P” for VC12 path termination datafill. • See “CARRTYPE = E1P” for E1 path termination datafill.

CARRTYPE = OC3S

If the value of subfield CARRTYPE is OC3S, datafill the following subfields PHYLINK, OC3PP, OC3PM, and OC3FAIL as described in the following table.

Field	Subfield or refinement	Entry	Explanation and action
	PHYLINK	See refinements	PHYSICAL LINK. This is the location of the OC-3 circuit pack on the optical fiber/link termination. This field consists of refinements NODETYPE, NODEID, SHELFID, and SLOTNUM.
	NODETYPE	SPM	NODE TYPE. Enter the type of node, which is SPM.
	NODEID	0-63	NODE IDENTIFIER. Enter the identifier of the node.
	SHELFID	0	SHELF IDENTIFIER. Enter the identifier for the shelf that contains the OC-3 circuit pack. The default value is 0.
	SLOTNUM	9 or 10	SLOT IDENTIFIER. Enter the slot number of the OC-3 circuit pack. The default value is 9.
	OC3PP	See refinements	OC-3 CARRIER PHYSICAL MEDIUM LAYER PARAMETER ATTRIBUTES. The field is a vector of up to 3 entries. Each entry in the vector describes an optical parameter. To accept system default values, enter $ for the field. For each entry, the subfields are PARM and ATTR. Refine the datafill as indicated in the following descriptions.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	PARM	LBC, OPT, OPR	PARAMETER NAME. Valid values are • LBC (normalized laser bias current in percentage) • OPT (normalized optical power transmitted in percentage) • OPR (normalized optical power received in percentage)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The refinements are ALRMLIM, CLRLIM, and ALRMSEV.
	ALRMLIM	0-200	ALARM LIMIT. The alarm generation thresholds are described as follows: • When LBC goes above ALRMLIM, an alarm generates. The default value is 150. • When OPT goes below the ALRLIM, an alarm generates. The default value is 85. • When OPR goes below the ALRLIM, an alarm generates. The default value is 85.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	CLRLIM	0-200	ALARM CLEARANCE LIMIT. The alarm clearance thresholds are described as follows: • When LBC goes below the CLRLIM, the alarm clears. The default value is 125. • When OPT goes above the CLRLIM, the alarm clears. The default value is 95. • When OPT goes above the CLRLIM, the alarm clears. The default value is 95.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY. This is the severity of the alarm when it generates. Valid values are • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm, the default value)
	OC3PM	See refinements	PERFORMANCE MEASUREMENTS. This field indicates the performance measurement attributes for an OC-3 section carrier. The field is a vector of up to 4 entries. Each entry in the vector describes an OC-3 section performance measurement parameter. To accept system default values, enter $ for the field. For each entry, the subfields are PARM and ATTR.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	PARM	SEFS, CV, ES, SES	PARAMETER NAME. This field indicates the performance measurement parameter name. Select the entry as follows: • SEFS (severely errored framing second) • CV (code violation) • ES (errored second) • SES (severely errored second) Default values are shown in parentheses beside the following parameter names. • SEFS (17, 7) • CV (4430, 1732) • ES (864, 346) • SES (4, 2)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are DAYLIM, MIN15LIM, and ALRMSEV.
	DAYLIM	0 to 4294967295	DAY LIMIT. This subfield indicates the threshold for the current day interval. A threshold crossing alarm generates if the DAYLIM is crossed.
	MIN15LIM	0 to 32767	15-MINUTE LIMIT. This subfield indicates the threshold for the current 15-minute interval. A threshold crossing alarm generates if the MIN15LIM is crossed.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	OC3FAIL	See refinements	DEFECT OR FAILURE ATTRIBUTES FOR OC-3 SECTION CARRIER. The field is a vector of up to 2 entries. Each entry in the vector describes an OC-3 section defect or failure. To accept system default values, enter $ for the field. For each entry, the subfields are FAILURE and ATTR.
	FAILURE	LOS, LOF	DEFECT OR FAILURE NAME. Select entry as follows: • LOS (loss of signal) The default alarm severity is CR. The default action is RPT. • LOF (loss of frame) The default alarm severity is CR. The default action is RPT.
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This subfield indicates the severity of the alarm when the defect is declared. Valid values are • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm, the default value)
	ACTION	RPT, NRPT	ACTION. This field indicates the action to take when the defect is declared. Valid values are • NRPT (no report or alarm) ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA. • RPT (report, the default value)

CARRTYPE = STS3L

If the value of subfield CARRTYPE is STS3L, datafill the following subfields PCRRNAME, SFBERLIM, SDBERLIM, CARRCLAS, STS3GRID, GENFLT, STS3PM, and STS3FAIL as described in the following table.

Field	Subfield or refinement	Entry	Explanation and action
	PCRRNAME	Up to 38 alphanumeric characters	PARENT CARRIER NAME. Enter the OC-3S parent carrier name.
	SFBERLIM	3-5 (see Note in "Explanation and action")	SIGNAL FAILURE BIT-ERROR-RATIO THRESHOLD. Signal failure is declared when the threshold is crossed. Interpret the field as 1 x 10E-SFBERLIM. For example, the value 3 corresponds to 1 x 10E-3 and the value 5 corresponds to 1 x 10E-5. The default value is 4. ***Note:*** If the carrier is hosted off the OC3 RM of a MG4000 SPM, then SFBERLIM has a fixed value of 3.
	SDBERLIM	5-9 (see Note in "Explanation and action")	SIGNAL DEGRADATION BIT-ERROR-RATIO THRESHOLD. Signal degradation is declared when the threshold is crossed. Interpret the field as 1 x 10E-SDBERLIM. For example, the value 5 corresponds to 1 x 10E-5 and the value 9 corresponds to 1 x 10E-9. The default value is 7. ***Note:*** If the carrier is hosted off the OC3 RM of a MG4000 SPM, then SDBERLIM has a fixed value of 5.
	CARRCLAS	HSCARR	CARRIER CLASS. Enter HSCARR (high-speed carrier).
	STS3GRID	1-28	STS-3 GROUP IDENTIFICATION. Enter the group identification of the STS-3 line protection group. (STS3L_GRP is in table MNPRTGRP.) The default value is 1.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	GENFLT	See refinements	GENERAL FAULT ATTRIBUTES. This subfield indicates the general fault attributes for the STS-3 line carrier. The field is a vector of up to 2 entries. Each entry in the vector describes an STS-3 line fault. To accept system default values, enter $ for the field. For each entry, the subfields are FAULT and ATTR.
	FAULT	SFBERX, SDBERX	FAULT NAME. Valid values are • SFBERX indicates a signal failure bit-error-ratio threshold was crossed. The threshold value is specified by field SFBERLIM. • SDBERX indicates a signal degradation bit-error-ratio threshold was crossed. The threshold value is specified by field SDBERLIM.
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	ALARM SEVERITY. Values are • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	ACTION	RPT, NRPT	ACTION. This subfield indicates the action to be taken on fault detection. Values are • NRPT (no report) • RPT (report, the default value)
	STS3PM	See refinements	STS-3 PERFORMANCE MEASUREMENT. This field indicates the performance measurement attributes for the STS-3 line carrier. The field is a vector of up to 4 entries. Each entry in the vector describes an STS-3 line performance measurement parameter. To accept system default values, enter $ for the field. Subfields are PARM and ATTR.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	PARM	CV, ES, SES, UAS	PARAMETER NAME. This field indicates the performance measurement parameter name. Select the entry as follows: • CV (code violation) • ES (errored second) • SES (severely errored second) • UAS (unavailable second) Default values are shown in parentheses beside the following parameter names. • CV (4430, 1732) • ES (864, 346) • SES (4, 2) • UAS (10, 10)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are DAYLIM, MIN15LIM, and ALRMSEV.
	DAYLIM	0-4294967295	DAY LIMIT. This subfield indicates the threshold for the current day interval. A threshold crossing alarm generates if the DAYLIM is crossed.
	MIN15LIM	0-32767	15-MINUTE LIMIT. This subfield indicates the threshold for the current 15-minute interval. A threshold crossing alarm generates if the MIN15LIM is crossed.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY. This subfield indicates the severity of the threshold crossing alarm when it generates. Valid severities are as follows: • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	STS3FAIL	See refinements	FAILURE ATTRIBUTES. This field indicates defects or failure attributes for STS-3 line carrier.The field is a vector of up to 2 entries. Each entry in the vector describes a STS-3 line defect or failure. To accept system default values, enter $ for the field. For each entry, the subfields are FAILURE and ATTR.
	FAILURE	AIS, RFI, SIMPLEX	FAILURE NAME. This field indicates the defect or failure name. The values are • AIS (alarm indication signal) The default severity is MN. The default action is NRPT. • RFI (remote failure indication) The default severity is MN. The default action is NRPT. • SIMPLEX (protection switching unavailable) The default severity is CR. The default action is RPT.
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, JU, CR	ALARM SEVERITY. The valid values are • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT, RPT	ACTION. Action to be taken on fault detection. • NRPT (no report or alarm, the default value) ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA. • RPT (report)
	STS3OPTION	see subfield OPTION_ SEL	STS3L Options. This field has subfield OPTION_SEL. 5 multiples of OPTION_SEL.

Field	Subfield or refinement	Entry	Explanation and action
	OPTION_ SEL	see subfields: • TIMING	Option selector. Enter TIMING then enter the relevant data for subfield TIMING.
	TIMING	Y,N	Timing indicator. This field determines whether or not the carrier is used as a clock source for the SPM. Enter Y to use the carrier as a clock source for the SPM. Enter N (the default value) if the carrier is not to be used as a clock source for the SPM. **Note 1:** The TIMING field is currently used only for ATM carriers on an MG4000 SPM. For other carriers the field is ignored. This field is intended for use in future SPM load releases. **Note 2:** It is recommended that STM1M carriers with an ATM payload are used as a timing source.

CARRTYPE = STS3cP

If the value of subfield CARRTYPE is STS3cP, datafill the following subfields, PCRRNAME, STS1POS, STS3PALD, STS1PTRC, STS1PM, and STS1FAIL as described in the following table.

Note: AN STS3cP carrier can be hosted only off the STS3L carrier which is hosting off the WORKING ATM circuit pack. To check whether the STS3L carrier is hosting off a WORKING ATM circuit pack, backtrack to the parent ATM carrier by way of the PCARRNAME of the STS3L carrier. Once the ATM carrier is identified, look up the circuit pack tuple, identified by PHYLINK, in table MNCKTPAK. If the ATM circuit pack is datafilled

MNHSCARR (continued)

as WORKING, then the STS3L carrier is hosting off a WORKING ATM circuit pack; otherwise, it is not.

Field	Subfield or refinement	Entry	Explanation and action
	PCRRNAME	Up to 38 alphanumeric characters	PARENT CARRIER NAME ***Note:*** An STS-1 is hosted by an STS3L carrier, which is resident on a working OC-3 circuit pack.
	STS1POS	1-3	STS-1 PAYLOAD POSITION. This field indicates the position of the STS-1 in the payload. The default value is 1.
	STS3PALD	UNEQ, ATM	STS-3cP PAYLOAD TYPE. This field indicates the type of payload the STS-3cP is carrying. The default is ATM. Valid values are as follows: • UNEQ (payload is unequipped) • ATM (ATM payload, the default value)
	STS1PTRC	Up to 62 alphanumeric characters	STS-1 PATH TRACE MESSAGE
	STS1PM	See refinements	STS-1 PERFORMANCE MEASURE ATTRIBUTES. This field indicates the performance measurement attributes for the STS-1 path carrier. The field is a vector of up to 8 entries. Each entry in the vector describes an STS-1 path performance measurement parameter. To accept the system default value, enter $. The subfields are PARM and ATTR.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	PARM	CV, ES, SES, UAS, CVFE, ESFE, SESFE, UASFE	PARAMETER NAME. This field indicates the performance measurement parameter name. Valid values are • CV (code violation) • ES (errored second) • SES (severely errored second) • UAS (unavailable second) • CVFE (code violation, far end) • ESFE (errored second, far end) • SESFE (severely errored second, far end) • UASFE (unavailable second, far end) Default values are shown in parentheses beside their names. • CV (125, 15) • ES (100, 12) • SES (7, 3) • UAS (10, 10) • CVFE (125, 15) • ESFE (100, 12) • SESFE (7, 3) • UASFE (10, 10)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields to be refined are DAYLIM, MIN15LIM, and ALRMSEV.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	DAYLIM	0-4294967295	DAY LIMIT. This field indicates the threshold for the current day interval. An alarm generates when the DAYLIM is crossed.
	MIN15LIM	0-32767	15-MINUTE ALARM. This field indicates the threshold for the current 15-minute interval. An alarm generates when the MIN15LIM is crossed.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY. This field indicates the severity of the threshold crossing alarm when it generates. Valid values are • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	STS1FAIL	See refinements	STS-1 FAILURE ATTRIBUTES. This field indicates the defects or failure attributes for the STS-1 path carrier. The field is a vector of up to 4 entries. Each entry in the vector describes an STS-1 path defect or failure. To accept system default values, enter $ for the field. The subfields are FAILURE and ATTR.
	FAILURE	LOP, AIS, RFI, PLM	FAILURE. This field indicates the defect or failure name. Valid values are • LOP (loss of pointer) • AIS (alarm indication signal) • RFI (remote failure indication) • PLM (payload label mismatch)

Field	Subfield or refinement	Entry	Explanation and action
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This field indicates the severity of the alarm when the defect is declared. Valid values are • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT or RPT	ACTION. This field indicates the action to be taken on fault detection. Valid values are • NRPT (no report or alarm, the default value) ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA. • RPT (reportable)

CARRTYPE = STS1P

If the value of subfield CARRTYPE is STS1P, datafill the following subfields PCRRNAME, STS1POS, STS1PALD, STS1PTRC, STS1PM, and STS1FAIL as described in the following table.

Note: AN STS1P carrier can be hosted only off the STS3L carrier which is hosting off the WORKING OC-3 circuit pack. To check whether the STS3L carrier is hosting off a WORKING OC-3 circuit pack, backtrack to the parent OC-3S carrier by way of the PCARRNAME of the STS3L carrier. Once the OC-3S carrier is identified, look up the circuit pack tuple, identified by PHYLINK, in table MNCKTPAK. If the OC-3 circuit pack is

MNHSCARR (continued)

datafilled as WORKING, then the STS3L carrier is hosting off a WORKING OC-3 circuit pack; otherwise, it is not.

Field	Subfield or refinement	Entry	Explanation and action
	PCRRNAME	Up to 38 alphanumeric characters	PARENT CARRIER NAME ***Note:*** An STS-1 is hosted by an STS3L carrier, which is resident on a working OC-3 circuit pack.
	STS1POS	1-3	STS-1 PAYLOAD POSITION. This field indicates the position of the STS-1 in the payload. The default value is 1.
	STS1PALD	UNEQ, VT, ASYNC_DS3	STS-1 PAYLOAD TYPE. This field indicates the type of payload the STS-1 is carrying. The default is VT. Valid values are as follows: • UNEQ (payload is unequipped) • VT (VT-structured payload, the default value) • ASYNC_DS3 (asynchronous DS3)
	STS1PTRC	Up to 62 alphanumeric characters	STS-1 PATH TRACE MESSAGE
	STS1PM	See refinements	STS-1 PERFORMANCE MEASURE ATTRIBUTES. This field indicates the performance measurement attributes for the STS-1 path carrier. The field is a vector of up to 8 entries. Each entry in the vector describes an STS-1 path performance measurement parameter. To accept the system default value, enter $. The subfields are PARM and ATTR.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	PARM	CV, ES, SES, UAS, CVFE, ESFE, SESFE, UASFE	PARAMETER NAME. This field indicates the performance measurement parameter name. Valid values are • CV (code violation) • ES (errored second) • SES (severely errored second) • UAS (unavailable second) • CVFE (code violation, far end) • ESFE (errored second, far end) • SESFE (severely errored second, far end) • UASFE (unavailable second, far end) Default values are shown in parentheses beside their names. • CV (125, 15) • ES (100, 12) • SES (7, 3) • UAS (10, 10) • CVFE (125, 15) • ESFE (100, 12) • SESFE (7, 3) • UASFE (10, 10)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields to be refined are DAYLIM, MIN15LIM, and ALRMSEV.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	DAYLIM	0-4294967295	DAY LIMIT. This field indicates the threshold for the current day interval. An alarm generates when the DAYLIM is crossed.
	MIN15LIM	0-32767	15-MINUTE ALARM. This field indicates the threshold for the current 15-minute interval. An alarm generates when the MIN15LIM is crossed.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY. This field indicates the severity of the threshold crossing alarm when it generates. Valid values are • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	STS1FAIL	See refinements	STS-1 FAILURE ATTRIBUTES. This field indicates the defects or failure attributes for the STS-1 path carrier. The field is a vector of up to 4 entries. Each entry in the vector describes an STS-1 path defect or failure. To accept system default values, enter $ for the field. The subfields are FAILURE and ATTR.
	FAILURE	LOP, AIS, RFI, PLM	FAILURE. This field indicates the defect or failure name. Valid values are • LOP (loss of pointer) • AIS (alarm indication signal) • RFI (remote failure indication) • PLM (payload label mismatch)

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This field indicates the severity of the alarm when the defect is declared. Valid values are • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT or RPT	ACTION. This field indicates the action to be taken on fault detection. Valid values are • NRPT (no report or alarm, the default value) ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA. • RPT (reportable)

MNHSCARR (continued)

CARRTYPE = DS3P

If the value of subfield CARRTYPE is DS3P, datafill the following subfields PCRRNAME, DS3APP, and DS3FAIL as described in the following table.

Field	Subfield or refinement	Entry	Explanation and action
	PCRRNAME	Up to 38 alphanumeric characters	PARENT CARRIER NAME. Enter the parent carrier name. ***Note:*** A DS3P carrier can only host off a STS1P carrier with asynchronous DS3 (ASYNC_DS3) payload.
	DS3APP	See refinements	APPLICATION CARRIED BY THE DS-3 PATH. Its subfield is APPTYPE.
	APPTYPE	M23	APPLICATION TYPE. The only valid value is M23, which is the M23 application. Refine the M23 application.
	M23DS3PM	See refinements	PERFORMANCE MEASUREMENTS FOR DS3 PATH CARRIER CARRYING M23 APPLICATION. The subfields are PARM and ATTR.
	PARM	CV, ES, SES, UAS	PARMETER NAME. This field indicates the performance measurement parameter name. Valid values are • CV (code violation) • ES (errored second) • SES (severely errored second) • UAS (unavailable second)

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
			Default values are shown in parentheses beside their names, as follows: • CV (3820, 382) • ES (250, 25) • SES (40, 4) • UAS (10, 10)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are DAYLIM, MIN15LIM, and ALRMSEV.
	DAYLIM	0 to 4294967295	DAY LIMIT. An alarm generates when the DAYLIM is crossed.
	MIN15LIM	0 to 32767	15-MINUTE ALARM. An alarm generates when the MIN15LIM is crossed.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY. These alarms indicate the severity of the threshold crossing alarm when it generates. • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	DS3FAIL	See refinements	DS-3 FAILURE ATTRIBUTES. This field indicates the defects or failure attributes for DS-3 path carrier. The field is a vector of up to 3 entries. Each entry in the vector describes a DS-3 defect or failure. To accept system default values, enter $ for the field. The subfields are FAILURE and ATTR.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	FAILURE	AIS, LOF, RAI	FAILURE NAME. Valid values are as follows: • AIS (alarm indication signal) The default alarm severity is MN. The default action is NRPT. • LOF (loss of frame) The default alarm severity is MJ. The default action is RPT. • RAI (remote alarm indication) The default alarm severity is MN. The default action is NRPT.
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This field indicates the severity of the alarm when the defect is declared. Valid values are • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT or RPT	ACTION. Action to be taken on fault detection. The valid values are • NRPT (no report or alarm) ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA. • RPT (reportable)

CARRTYPE = VT15P

If the value of subfield CARRTYPE is VT15P, datafill the following subfields PCRRNAME, VTGRPID, VTID, VT15PALD, VT15PM, and VT15FAIL as described in the following table.

Note: A VT15P carrier can host only off an STS1P carrier with VT-structured payload.

Field	Subfield or refinement	Entry	Explanation and action
	PCARRNAME	Up to 38 alphanumeric characters	PARENT CARRIER NAME. Enter the parent carrier name.
	VTGRPID	1-7	VT GROUP IDENTIFICATION. Enter the group identification. The default is 1.
	VTID	1-4	VT1.5 IDENTIFICATION. Enter the VT1.5 identification within the VT group. The default is 1.
	VT15PALD	UNEQ, ASYNC_DS1, BYSYNC_DS1	VT1.5 PAYLOAD TYPE. Enter the STS-1 payload type as follows: • UNEQ (unequipped) • ASYNC_DS1 (asynchronous DS-1 payload) • BYSYNC_DS1 (byte-synchronous DS-1 payload, the default value)

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	VT15PM	See refinements	VT1.5 PERFORMANCE MEASURE ATTRIBUTES. This field indicates the performance measurement attributes for the VT path carrier. The field is a vector of up to 4 entries. Each entry in the vector describes a VT path performance measurement parameter. To accept the system default values, enter $ for the field. For each entry, the subfields are PARM and ATTR.
	PARM	CV, ES, SES, UAS	PARAMETER. This field indicates the performance measurement parameter name. The valid values are • CV (code violation) • ES (errored second) • SES (severely errored second) • UAS (unavailable second) The default values are shown in parentheses beside the following parameter names: • CV (132960, 13296) • ES (648, 65) • SES (100, 10) • UAS (10, 10)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are DAYLIM, MIN15LIM, and ALRMSEV.
	DAYLIM	0 to 4294967295	DAY LIMIT. An alarm generates when the DAYLIM is crossed.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	MIN15LIM	0 to 32767	15-MINUTE ALARM. The threshold crossing alarm generates when the MIN15LIM is crossed.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	VT15FAIL	See refinements	VT1.5 FAILURE ATTRIBUTES. This field indicates the defects or failure attributes for a VT path carrier. The field is a vector of up to 4 entries. Each entry in the vector describes a VT path defect or failure. To accept system default values, enter $ for the field. For each entry, the subfields are FAILURE and ATTR.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	FAILURE	LOP, AIS, RFI, PLM	FAILURE OR DEFECT NAME. Valid values are • LOP (loss of pointer) The default alarm severity is MN. The default action is RPT. • AIS (alarm indication signal) The default alarm severity is MN. The default action is NRPT. • RFI (remote failure indication) The default alarm severity is MN. The default action is NRPT. • PLM (payload label mismatch) The default alarm severity is MN. The default action is RPT.
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN,MJ, CR	SEVERITY. Enter the alarm severity, The defaults to MN. • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm)
	ACTION	RPT, NRPT	ACTION. Action to be taken on fault detection. • NRPT (no report or alarm) ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA. • RPT (reportable)

CARRTYPE = DS1P

If the value of subfield CARRTYPE is DS1P, datafill the following subfields PCRRNAME, DS1POS, FRAMEFMT, and DS1FAIL as described in the following table.

Note: A DS1P carrier can host only off a DS3P carrier or a VT15P carrier with asynchronous DS1 (ASYNC_DS1) payload.

Field	Subfield or refinement	Entry	Explanation and action
	PCRRNAME	1 to 38 alphanumeric characters	PARENT CARRIER NAME. Enter the parent carrier name up to 38 alphanumeric characters.
	DS1ZCS	OFF/ON	ZERO CODE SUPPRESSION. This field indicates if the zero code suppression is enabled or disabled for DS1p carrier. Its values depend on the Frame format option. For Frame format SF, the values are: ON - Zero code suppression is enabled. OFF - Zero code suppression is disabled.For Frame format ESF, only OFF value is supported.
	DS1POS	See refinements	DS1 POSITION. This field indicates the position of the DS1P carrier in the payload. Its one subfield is PCARRTYP.
	PCARRTYP	DS3P or VT15P	PARENT CARRIER TYPE. Valid values are • DS3P (DS-3 path carrier). Refine DS3P by entering PALDPOS, which is the DS1P carrier in the DS-3 payload. Valid values are 1-28. • VT15P (VT1.5 path carrier with asynchronous DS-1 payload) T_SPMCRT_DS1PT_VT15PT_PALD_POS

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	PALDPOS	1 to 28	PAYLOAD POSITION. Enter the position of the DS1P carrier in the DS3 payload.
	FRAMEFMT		Multiple Frame Format entries
	FRAMEFMT	ESF or SF	FRAME FORMAT. This field indicates the frame format used by the DS1P carrier. Valid values are • ESF (extended superframe) • SF (superframe) Enter refinements for ESF and SF as described here.
	ESFDS1PM	See refinements	EXTENDED SUPERFRAME DS-1 PERFORMANCE MEASUREMENT. This field indicates the performance measurement attributes for DS1 path carrier employing ESF format. The field is a vector of up to 5 entries. Each entry in the vector describes an ESF DS-1 path performance measurement parameter. To accept system default values, enter $ for the field. For each entry, there are two subfields: PARM and ATTR.
	PARM	CV, ES, SES, CSS, UAS	PARAMETER NAME. This field indicates the performance measurement parameter name. Valid values include • CV (code violation) • ES (errored second) • SES (severely errored second) • CSS (controlled slip second) • UAS (unavailable second)

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
			The default values for are shown in parentheses beside the following parameter names: • CV (132960, 13296) • ES (648, 65) • SES (100, 10) • CSS (4, 1) • UAS (10, 10)
	ATTR	See refinements	PARAMETER ATTRIBUTES. Valid values are DAYLIM, MIN15LIM, and ALRMSEV.
	DAYLIM	0 to 4294967295	DAY LIMIT. An alarm generates when the DAYLIM is crossed. The default value is 7.
	MIN15LIM	0 to 32767	15-MINUTE ALARM. An alarm generates when the MIN15LIM is crossed. The default value is 3.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	SFDS1PM	See refinements	SUPERFRAME DS-1 PERFORMANCE MEASUREMENT. This field indicates the performance measurement attributes for DS1 path carrier employing SF format. The field is a vector of up to 5 entries. Each entry in the vector describes an SF DS-1 path performance measurement parameter. To accept system default values, enter $ for the field. For each entry, there are two subfields: PARM and ATTR.
	PARM	CV, ES, SES, CSS, UAS	PARAMETER NAME. This field indicates the performance measurement parameter name. Valid values include • CV (code violation) • ES (errored second) • SES (severely errored second) • CSS (controlled slip second) • UAS (unavailable second) The default values are shown in parentheses beside the following parameter names: • CV (132960, 13296) • ES (648, 65) • SES (100, 10) • CSS (4, 1) • UAS (10, 10)
	ATTR	See refinements	PARAMETER ATTRIBUTES. Valid values are DAYLIM, MIN15LIM, and ALRMSEV.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	DAYLIM	0 to 4294967295	DAY LIMIT. An alarm generates when the DAYLIM is crossed.
	MIN15LIM	0 to 32767	15-MINUTE ALARM. An alarm generates when the MIN15LIM is crossed.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	DS1FAIL	See refinements	DS-1 FAILURE ATTRIBUTES. This field indicates the defects or failure attributes for the DS-1 path carrier. The field is a vector of up to 3 entries. Each entry in the vector describes a DS-1 defect or failure. To accept system default values, enter $ for the field. For each entry, there are two subfields: FAILURE and ATTR.
	FAILURE	AIS, LOF, RAI	FAILURE NAME. Valid values include • AIS (alarm indication signal) The default alarm severity is MN. The default action is NRPT. • LOF (loss of frame) The default alarm severity is MN. The default action is RPT. • RAI (remote alarm indication) The default alarm severity is MN. The default action is NRPT.

MNHSCARR (continued)

Field	Subfield or refinement	Entry	Explanation and action
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	SEVERITY • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT, RPT	ACTION. Action to be taken on fault detection. • NRPT (no report or alarm) ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA. • RPT (report)

CARRTYPE = DS1L

Carrier type DS1L only applies to Succession Network products with an MSH layer. The following table shows datafill specific to carrier type DS1L.

(Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	PHYLINK	See refinements	PHYSICAL LINK. This is the location of the DS-1 circuit pack on the DS1L carrier. This field consists of refinements NODETYPE, NODEID, SHELFID, SLOTNUM, and PORTNUM.
	NODETYPE	DS1L	NODE TYPE. Enter DS1L as the type of node.

(Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	NODEID	0-63	NODE IDENTIFIER. Enter the identifier of the node.
	SHELFID	0, 1	SHELF IDENTIFIER. Enter the identifier for the shelf that contains the DS-1 circuit pack.
	SLOTNUM	1-28	SLOT NUMBER. Enter the slot number of the DS-1 circuit pack. ***Note:*** Carrier type DS1L only accepts numbers • 3 (for slots 2-4) on shelf 1 • 9 (for slots 8-10) on shelf 1 • 11 (for slots 10-12) on shelf 0
	PORTNUM	1-28	PORT NUMBER. Enter the port number of the DS-1 circuit pack.
	ATTR	See refinements	PARAMETER ATTRIBUTES. The refinements are FRMFMT, LNCODING, SFBERLIM, and SDBERLIM.
	FRMFMT	SF or ESF	FRAME FORMAT. This subfield indicates the frame format bit that the DS-1 carrier uses. Enter one of the following values: • SF (superframe) • ESF (extended superframe)
	LNCODING	AMI, B8ZS, ZCS	LINE ENCODING. Enter one of the following values: • AMI (alternate mark inversion) • B8ZX (binary N zero substitution) • ZCS (zero code suppression)

MNHSCARR (continued)

(Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	SFBERLIM	Multiple with 3-5	SIGNAL FAILURE. Enter SFBERLIM and a value from 3 to 5.
	SDBERLIM	Multiple with 5-9	SIGNAL DEGRADATION. Enter SDBERLIM and a value from 5 to 9.
	DS1PM	See refinements	DS-1 PERFORMANCE MONITORING ATTRIBUTES. This subfield indicates the performance monitoring attributes for the DS-1 path carrier. This subfield is a vector of up to 6 entries. Each entry in the vector describes a DS-1 line performance monitoring parameter. The subfields are PARM and ATTR.
	PARM	CV, ES, SES, CSS, UAS, AISS	PARAMETER NAME. This field indicates the performance monitoring parameter name. Select the entry as follows: • CV (code violation) • ES (errored second) • SES (severely errored second) • CSS (control slip second) • AISS (alarm indication signal second) • UAS (unavailable second)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are DAYLIM, MIN15LIM, and ALRMSEV.

(Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	DAYLIM	0 to 4294967295	DAY LIMIT. This subfield indicates the threshold for the current day interval. A threshold crossing alarm generates if the DAYLIM is crossed.
	MIN15LIM	0 to 32767	15-MINUTE LIMIT. This subfield indicates the threshold for the current 15-minute interval. A threshold crossing alarm generates if the MIN15LIM is crossed.
	ALRMSEV	NA, MN, MJ, CR	ALARM SEVERITY. Enter one of the following values to indicate the level of severity for the alarm: • NA (no alarm) • MN (minor alarm, the default value) • MJ (major alarm) • CR (critical alarm)
	DS1FAIL	See refinements	DEFECT OR FAILURE ATTRIBUTES FOR DS1L SECTION CARRIER. The field is a vector of up to 2 entries. Each entry in the vector describes an DS1L defect or failure. To accept system default values, enter $ for the field. For each entry, the subfields are FAILURE and ATTR.

MNHSCARR (continued)

(Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	FAILURE	LOS, LOF, AIS, RAI, SFBER, SDBER	DEFECT OR FAILURE NAME. Select entry as follows: • LOS (loss of signal) The default alarm severity is CR. The default action is RPT. • LOF (loss of frame) The default alarm severity is CR. The default action is RPT. • AIS (alarm indication signal). The default alarm severity is MN. The default action is NRPT. • RAI (remote alarm indication) The default alarm severity is MN. The default action is NRPT. • SFBER (signal failure) • SDBER (signal degradation)
	ATTR	See refinements	PARAMETER ATTRIBUTES. The subfields are SEVERITY and ACTION.

(Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This subfield indicates the severity of the alarm when the defect is declared. Valid values are • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm, the default value)
	ACTION	RPT, NRPT	ACTION. This field indicates the action to take when the defect is declared. Valid values are • NRPT (no report or alarm) ***Note:*** Do not set ACTION to NRPT unless SEVERITY equals NA. • RPT (report, the default value)

CARRTYPE = STM1R

If the value of subfield CARRTYPE is STM1R, datafill the subfields PHYLINK, STM1RPM, and STM1RFAIL as described in the following table.

Field	Subfield	Entry	Explanation and action
	PHYLINK	see subfields	Physical link. This is the location of the STM-1 circuit pack on which the STM1R carrier is defined. This field has subfields NODETYPE, NODEID, SHELFID, and SLOTNUM.
	NODETYPE	PM_TYPE	Node type. Enter PM_TYPE.
	NODEID	0 to 85	Node identifier. Enter the identifier of the node.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	SHELFID	0	Shelf identifier. Enter 0 to identify the shelf that contains the STM-1 circuit pack.
	SLOTNUM	1 to 14	Slot number. Enter 9 or 10 to identify the slot number of the STM-1 circuit pack. The default value is 9.
	STM1RPM	see subfields	STM1R performance measurements. This field has subfields PARM and ATTR. To accept the system default values, enter $.
	PARM	BBE, ES, SES, UAS	Performance parameter name. Enter values as follows: • BBE = background block errors. Default values are: 15-minute threshold 17280, day threshold 34560, alarm severity MN. • ES = errored second. Default values are: 15-minute threshold 13, day threshold 40, alarm severity MN. • SES = severely errored second. Default values are: 15-minute threshold 7, day threshold 14, alarm severity MN. • UAS = unavailable seconds. Default values are: 15-minute threshold 10, day threshold 10, alarm severity MN.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	ATTR	see subfields	Performance parameter attributes. This field has subfields DAYLIM, MIN15LIM, and ALRMSEV, which specify the thresholds above which the system generates a threshold-crossing alarm. Subfield PARM (above) defines the default values.
	DAYLIM	0 to 4294967295	Day limit. This is the threshold for the current day interval.
	MIN15LIM	0 to 32767	15-minute limit. This is the threshold for the current 15-minute interval.
	ALRMSEV	NA, MN, MJ, CR	Alarm severity. This is the severity of the alarm when it generates. Valid values are: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	STM1RFAIL	see subfields	Defect or failure attributes for the STM1R section carrier. This field has subfields, FAILURE and ATTR. To accept the system default values, enter $.
	FAILURE	LOS, LOF	Defect or failure name. Enter the failure name as follows: • LOS = loss of signal. The default alarm severity is CR. The default action is RPT. • LOF = loss of frame. The default alarm severity is CR. The default action is RPT.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	ATTR	see subfields	Parameter attributes. This field has subfields SEVERITY and ACTION. Subfield FAILURE (above) defines the default values.
	SEVERITY	NA, MN, MJ, CR	Alarm severity. This field indicates the severity of the threshold-crossing alarm when it is generated. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value)
	ACTION	RPT, NRPT	Action. This field indicates the action to take when the defect is detected. Enter action values as follows: • RPT = report; the default value) • NRPT = no report or alarm ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA.
	OPTIONS		8 entries of options.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	OPTION_ SEL	LBC,OPR, OPT	Option selector. Enter values as follows: • LBC = normalized laser bias current in percentage • OPR = normalized optical power received in percentage • OPT = normalized optical power transmitted in percentage Then enter data for subfields ALRMLIM, CLRLIM, and ALRMSEV.
	ALRMLIM	0 to 200	Alarm limit. Enter the required value to control the alarm generation threshold as follows: • When LBC goes above ALRMLIM, an alarm generates. The default value is 150. • When OPR goes below ALRMLIM, an alarm generates. The default value is 85. • When OPT goes below ALRMLIM, an alarm generates. The default value is 85.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	CLRLIM	0 to 200	Alarm clearance limit. Enter the required value to control the alarm clearance threshold as follows: • When LBC goes below CLRLIM, the alarm clears. The default value is 125. • When OPR goes above CLRLIM, the alarm clears. The default value is 95. • When OPT goes above CLRLIM, the alarm clears. The default value is 95.
	ALRMSEV	NA, MN, MJ, CR	Alarm severity. Enter the required value to define the severity of the alarms generated as follows: • NA = no alarm • MN = minor alarm (the default value) • MJ = major alarm • CR = critical alarm

CARRTYPE = STM1M

If the value of subfield CARRTYPE is STM1M, datafill the subfields PCRRNAME, STM1MPALD, EXCBERLIM, SDBERLIM, CARRCLASS, STM1MGRID, STM1MPM, STM1MFAIL and STM1MOPTION as described in the following table.

Field	Subfield	Entry	Explanation and action
	PCRRNAME	maximum 38 characters	Parent carrier name. Enter the value of the STM1R carrier CARRNAME field.
	STM1MPALD	VC4P	STM1-M payload. This is the payload type contained within the STM1M carrier. Enter VC4P.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	EXCBERLIM	3 to 5	Excessive error BER threshold. The system declares an EXC failure if this threshold is crossed. The default value is 3.
	SDBERLIM	5 to 9	Signal degrade error BER threshold. The system declares an SD failure if this threshold is crossed. The default value is 5.
	CARRCLASS	HSCARR	Carrier class. Enter HSCARR.
	STM1MGRID	1 to 28	STM1M protection group ID. This field corresponds to the ID of a carrier protection group datafilled in table MNPRTGRP. The default value is 1.
	STM1MPM	see subfields: • PARM • ATTR	STM1M performance measurements. This field has subfields PARM and ATTR. To accept the system default values, enter $.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	PARM	BBE, ES, SES, UAS	Performance parameter name. Enter values as follows: • BBE = background block errors. Default values are: 15-minute threshold 17280, day threshold 34560, alarm severity MN. • ES = errored second. Default values are: 15-minute threshold 13, day threshold 40, alarm severity MN. • SES = severely errored second. Default values are: 15-minute threshold 7, day threshold 14, alarm severity MN. • UAS = unavailable seconds. Default values are: 15-minute threshold 10, day threshold 10, alarm severity MN.
	ATTR	see subfields: • DAYLIM • MIN15LIM • ALRMSEV	Performance parameter attributes. This field has subfields DAYLIM, MIN15LIM, and ALRMSEV, which specify the thresholds above which the system generates a threshold-crossing alarm. Subfield PARM (above) defines the default values.
	DAYLIM	0 to 4294967295	Day limit. This is the threshold for the current day interval.
	MIN15LIM	0 to 32767	15-minute limit. This is the threshold for the current 15-minute interval.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	ALRMSEV	NA, MN, MJ, CR	Alarm severity. This is the severity of the alarm when it generates. Enter values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	STM1MFAIL	see subfields: • FAILURE • ATTR	Defect or failure attributes for the STM1M section carrier. This field has subfields FAILURE and ATTR. To accept the system default values, enter $.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	FAILURE	AIS, APSAM, APSMM, APSCHM, APSIC, APSFEPLF, APSLCK, APSFC, APSMAN, EXC, RFI, SD	Defect or failure name. Enter the failure name as follows: • AIS = alarm indication signal. The default alarm severity is CR. The default action is RPT. • APSAM = Architecture mismatch. Architecture of the far end is different from the near end architecture. • APSMM = Mode mismatch. The mode of the far end is different from near end mode. • APSCHM = Selector Channel Mismatch. The far end and the near end don't agree on the channel to select the payload from. • APSIC = Invalid code. The far end is sending an invalid code over 'K bytes'. • APSFEPLF = Far end protection failure. Indicates an APS switching of the Far End Protection Line Failure. • APSLCK = Lockout. Lockout on indication. • APSFC = Forced. Forced command on indication. • APSMAN = Manual. Manual command on indication.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
			• EXC = excessive errors. This corresponds to the excessive error BER threshold failure described for subfield EXCBERLIM. The default alarm severity is CR. The default action is RPT. • RFI = remote failure indication. The default alarm severity is CR. The default action is RPT. • SD = signal degrade. This corresponds to the signal degrade BER threshold failure described for subfield SDBERLIM. The default alarm severity is CR. The default action is RPT.
	ATTR	see subfields: • SEVERITY • ACTION	Parameter attributes. This field has subfields SEVERITY and ACTION. Subfield FAILURE (above) defines the default values.
	SEVERITY	NA, MN, MJ, CR	Alarm severity. This field indicates the severity of the threshold-crossing alarm when it is generated. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm, the default value

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	ACTION	RPT, NRPT	Action. This field indicates the action to take when the defect is detected. Enter action values as follows: • RPT = report; the default value • NRPT = no report or alarm ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA.
	STM1MOPTION	see subfield OPTION_SEL	STM1M Options. This field has subfield OPTION_SEL. 8 multiples of OPTION_SEL.
	OPTION_SEL	see subfields: • TIMING • ALS	Option selector. Enter TIMING or ALS, then enter the relevant data for subfield TIMING or ALS.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	TIMING	Y,N	Timing indicator. This field determines whether or not the carrier is used as a clock source for the SPM. Enter Y to use the carrier as a clock source for the SPM. Enter N (the default value) if the carrier is not to be used as a clock source for the SPM. **Note 1:** The TIMING field is currently used only for ATM carriers on an MG4000 SPM. For other carriers the field is ignored. This field is intended for use in future SPM load releases. **Note 2:** It is recommended that STM1M carriers with an ATM payload are used as a timing source.
	ALS	Y,N	Automatic Laser Shutdown. This boolean provides the ability for the user to turn on/off this functionality. Enter Y to enable Automatic Laser Shutdown. Enter N to disable Automatic Laser Shutdown. (not supported at SN04 (DMS))

MNHSCARR (continued)

CARRTYPE = VC4P

If the value of subfield CARRTYPE is VC4P, datafill the subfields PCRRNAME, VC4PALD, VC4TXPTRC, VC4RXPTRC, VC4PM, and VC4FAIL as described in the following table.

Field	Subfield	Entry	Explanation and action
	PCRRNAME	maximum 38 characters	Parent carrier name. Enter the value of the STM1M carrier CARRNAME field. ***Note:*** The VC4P carrier can only be hosted off the working STM-1 circuit pack. Therefore the parent STM1M carrier must also be hosted off the working STM-1 circuit pack.
	VC4PALD	ATMC4, UNEQ, VC12P	VC4 payload. This is the payload type contained within the VC4P carrier.Enter the payload type as follows: • ATMC4 = ATM payload (not used) • UNEQ = unequipped • VC12P = VC12 path The default value is VC12P.
	VC4TXPTRC	maximum 15 characters	VC4 transmit path trace. This string is transmitted to the other end of the VC4 path, for validation to ensure path integrity. Enter the required string.
	VC4RXPTRC	maximum 15 characters	VC4 receive path trace. This string is used to validate the trace from the other end of the VC4 path, to ensure path integrity. Enter the required string.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	VC4PM	see subfields	VC4 performance measurements. This field has subfields PARM and ATTR. To accept the system default values, enter $.
	PARM	BBE, ES, SES, UAS	Performance parameter name. Enter values as follows: • BBE = background block errors. Default values are: 15-minute threshold 17280, day threshold 34560, alarm severity MN. • ES = errored second. Default values are: 15-minute threshold 13, day threshold 40, alarm severity MN. • SES = severely errored second. Default values are: 15-minute threshold 7, day threshold 14, alarm severity MN. • UAS = unavailable seconds. Default values are: 15-minute threshold 10, day threshold 10, alarm severity MN.
	ATTR	see subfields	Performance parameter attributes. This field has subfields DAYLIM, MIN15LIM, and ALRMSEV, which specify the thresholds above which the system generates a threshold-crossing alarm. Subfield PARM (above) defines the default values.
	DAYLIM	0 to 4294967295	Day limit. This is the threshold for the current day interval.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	MIN15LIM	0 to 32767	15-minute limit. This is the threshold for the current 15-minute interval.
	ALRMSEV	NA, MN, MJ, CR	Alarm severity. This is the severity of the alarm when it generates. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	VC4FAIL	see subfields	Defect or failure attributes for the VC4 path. This field has subfields FAILURE and ATTR. To accept the system default values, enter $.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	FAILURE	AIS, LOM, LOP, RFI, SLM, TIM, UNEQ	Defect or failure name. Enter the failure name as follows: • AIS = alarm indication signal. The default alarm severity is MN. The default action is RPT. • LOM = loss of multiframe. The default alarm severity is MN. The default action is RPT. • LOP = loss of pointer. The default alarm severity is MN. The default action is RPT. • RFI = remote failure indication. The default alarm severity is MN. The default action is RPT. • SLM = signal label mismatch. The default alarm severity is MN. The default action is RPT. • TIM = trace identifier mismatch. The default alarm severity is MN. The default action is RPT. • UNEQ = unequipped. The default alarm severity is MN. The default action is RPT.
	ATTR	see subfields	Parameter attributes. This field has subfields SEVERITY and ACTION. Subfield FAILURE (above) defines the default values.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	Alarm severity. This field indicates the severity of the threshold-crossing alarm when it is generated. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	ACTION	RPT, NRPT	Action. This field indicates the action to take when the defect is detected. Enter action values as follows: • RPT = report; the default value • NRPT = no report or alarm ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA.

CARRTYPE = VC12P

If the value of subfield CARRTYPE is VC12P, datafill the subfields PCRRNAME, VC12POS, VC12PALD, VC12TXPTRC, VC12RXPTRC, VC12PM, and VC12FAIL as described in the following table.

Field	Subfield	Entry	Explanation and action
	PCRRNAME	maximum 38 characters	Parent carrier name. Enter the value of the VC4P carrier CARRNAME field.
	VC12POS	see subfield	VC12 position. This is the position within the parent carrier's payload that contains the VC12P carrier. This field has subfield PCARRTYPE.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	PCARRTYP	VC4P	Parent carrier type of the VC12P carrier. Enter VC4P and datafill subfields K, L, and M.
	K	1 to 3	K position.
	L	1 to 7	L position.
	M	1 to 3	M position.
	VC12PALD	UNEQ, VC12P	VC12 payload. This is the payload type contained within the VC12P carrier.Enter the payload type as follows: • ASYNC_E1 = asynchronous E1 path • UNEQ = unequipped
	VC12TXPTRC	maximum 15 characters	VC12 transmit path trace. This string is transmitted to the other end of the VC12 path, for validation to ensure path integrity. Enter the required string.
	VC12RXPTRC	maximum 15 characters	VC12 receive path trace. This string is used to validate the trace from the other end of the VC12 path, to ensure path integrity. Enter the required string.
	VC12PM	see subfields	VC12 performance measurements. This field has subfields PARM and ATTR. To accept the system default values, enter $.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	PARM	BBE, ES, SES, UAS	Performance parameter name. Enter values as follows: • BBE = background block errors. Default values are: 15-minute threshold 4320, day threshold 8640, alarm severity MN. • ES = errored second. Default values are: 15-minute threshold 13, day threshold 40, alarm severity MN. • SES = severely errored second. Default values are: 15-minute threshold 7, day threshold 14, alarm severity MN. • UAS = unavailable seconds. Default values are: 15-minute threshold 10, day threshold 10, alarm severity MN.
	ATTR	see subfields	Performance parameter attributes. This field has subfields DAYLIM, MIN15LIM, and ALRMSEV, which specify the thresholds above which the system generates a threshold-crossing alarm. Subfield PARM (above) defines the default values.
	DAYLIM	0 to 4294967295	Day limit. This is the threshold for the current day interval.
	MIN15LIM	0 to 32767	15-minute limit. This is the threshold for the current 15-minute interval.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	ALRMSEV	NA, MN, MJ, CR	Alarm severity. This is the severity of the alarm when it generates. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	VC12FAIL	see subfields	Defect or failure attributes for the VC12 path. This field has subfields FAILURE and ATTR. To accept the system default values, enter $.
	FAILURE	AIS, LOP, RFI, SLM, TIM, UNEQ	Defect or failure name. Enter the failure name as follows: • AIS = alarm indication signal. The default alarm severity is MN. The default action is RPT. • LOP = loss of pointer. The default alarm severity is MN. The default action is RPT. • RFI = remote failure indication. The default alarm severity is MN. The default action is RPT. • SLM = signal label mismatch. The default alarm severity is MN. The default action is RPT. • TIM = trace identifier mismatch. The default alarm severity is MN. The default action is RPT. • UNEQ = unequipped. The default alarm severity is MN. The default action is RPT.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	ATTR	see subfields	Parameter attributes. This field has subfields SEVERITY and ACTION. Subfield FAILURE (above) defines the default values.
	SEVERITY	NA, MN, MJ, CR	Alarm severity. This field indicates the severity of the threshold-crossing alarm when it is generated. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	ACTION	RPT, NRPT	Action. This field indicates the action to take when the defect is detected. Enter action values as follows: • RPT = report; the default value • NRPT = no report or alarm ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA.

CARRTYPE = E1P

If the value of subfield CARRTYPE is E1P, datafill the subfields PCRRNAME, VOICELAW, CRC4MON, IDLPATTERN, E1PM, and E1FAIL as described in the following table.

Field	Subfield	Entry	Explanation and action
	PCRRNAME	maximum 38 characters	Parent carrier name. Enter the value of the VC12P carrier CARRNAME field.
	VOICELAW	ALAW, MULAW	Voice companding law. Enter ALAW. ***Note:*** The value MULAW is valid but does not change the SPM (which remains set to A-law). m-law will be provided in a later release.
	IDLPATTERN	Q503, G714	IDL bit pattern. This bit pattern is used to maintain synchronization between both ends of a trunk which it carries no voice traffic. Enter the bit pattern as follows: • Q503 = Q.503 bit pattern (01010100) • G714 = G.714 bit pattern (11010101)
	CRC4MON	ON, OFF	CRC4 monitor bit. This bit indicates whether or not CRC4 is supported at the far end.
	E1PM	see subfields	E1 performance measurements. This field has subfields PARM and ATTR. To accept the system default values, enter $.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	PARM	BBE, CRC4, CSS, ES, SES, UAS	Performance parameter name. Enter values as follows: • BBE = background block errors. Default values are: 15-minute threshold 2, day threshold 2, alarm severity MN. • CRC4 = unavailable seconds. Default values are: 15-minute threshold 2, day threshold 2, alarm severity MN. • CSS = unavailable seconds. Default values are: 15-minute threshold 1, day threshold 4, alarm severity MN. • ES = errored second. Default values are: 15-minute threshold 2, day threshold 2, alarm severity MN. • SES = severely errored second. Default values are: 15-minute threshold 1, day threshold 1, alarm severity MN. • UAS = unavailable seconds. Default values are: 15-minute threshold 10, day threshold 10, alarm severity MN.
	ATTR	see subfields	Performance parameter attributes. This field has subfields DAYLIM, MIN15LIM, and ALRMSEV, which specify the thresholds above which the system generates a threshold-crossing alarm. Subfield PARM (above) defines the default values.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	DAYLIM	0 to 4294967295	Day limit. This is the threshold for the current day interval.
	MIN15LIM	0 to 32767	15-minute limit. This is the threshold for the current 15-minute interval.
	ALRMSEV	NA, MN, MJ, CR	Alarm severity. This is the severity of the alarm when it generates. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	E1FAIL	see subfields	Defect or failure attributes for the E1 path. This field has subfields FAILURE and ATTR. To accept the system default values, enter $.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	FAILURE	AIS, BER, CRE, LLCMA, LOF, RAI	Defect or failure name. Enter the failure name as follows: • AIS = alarm indication signal. The default alarm severity is MN. The default action is RPT. • BER = bit error ratio. The default alarm severity is MN. The default action is RPT. • CRE = CRC4 remote error. The default alarm severity is MN. The default action is RPT. • LLCMA = local loss of CRC multiframe alignment. The default alarm severity is MN. The default action is RPT. • LOF = loss of frame. The default alarm severity is MN. The default action is RPT. • RAI = remote alarm indication. The default alarm severity is MN. The default action is RPT.
	ATTR	see subfields	Parameter attributes. This field has subfields SEVERITY and ACTION. Subfield FAILURE (above) defines the default values.

MNHSCARR (continued)

Field	Subfield	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	Alarm severity. This field indicates the severity of the threshold-crossing alarm when it is generated. Enter severity values as follows: • NA = no alarm • MN = minor alarm • MJ = major alarm • CR = critical alarm; the default value
	ACTION	RPT, NRPT	Action. This field indicates the action to take when the defect is detected. Enter action values as follows: • RPT = report; the default value • NRPT = no report or alarm ***Note:*** Do not set ACTION to NRPT unless SEVERITY is set to NA.

MNHSCARR (continued)

Datafill example

The following examples show sample datafill for table MNHSCARR.

```
                    CARRKEY CCNTO
                                    CARRINFO
_____________________________________________________________________________

SPM_0_OC3S_1_WORKING                1
 OC3S SPM 0 0 9 (LBC 150 125 CR) (OPT 85 95 CR) (OPR 85 95 CR) $
 (SEFS 17 7 MN) (CV 4430 1772 MN) (ES 864 346 MN)
 (SES 4 2 MN) $ (LOS CR RPT) (LOF CR RPT) $

SPM_0_OC3S_1_SPARE                  2
 OC3S SPM 0 0 10 (LBC 150 125 CR) (OPT 85 95 CR) (OPR 85 95 CR) $
 (SEFS 17 7 MN) (CV 4430 1772 MN) (ES 864 346 MN)
 (SES 4 2 MN) $ (LOS CR RPT) (LOF CR RPT) $

SPM_0_STS3L_1_WORKING               3
 STS3L SPM_0_OC3S_1_WORKING 4 7 HSCARR 1 (SFBERX MN RPT) (SDBERX MN RPT) $
 (CV 4430 1772 MN) (ES 864 346 MN) (SES 4 2 MN) (UAS 10 10 MN) $
 (AIS MN NRPT) (RFI MN NRPT) $

SPM_0_STS3L_2_SPARE                 4
 STS3L SPM_0_OC3S_1_SPARE 4 7 HSCARR 1 (SFBERX MN RPT) (SDBERX MN RPT) $
 (CV 4430 1772 MN) (ES 864 346 MN) (SES 4 2 MN) (UAS 10 10 MN) $
 (AIS MN NRPT) (RFI MN NRPT) $

SPM_0_STS1_1                        6
 STS1P SPM_0_STS3L_1_WORKING 1 VT SPM_0_STS1_1_PATH
 (CV 125 15 MN) (ES 100 12 MN) (SES 7 3 MN) (UAS 10 10 MN)
 (CVFE 125 15 MN) (ESFE 100 12 MN) (SESFE 7 3 MN)
 (UASFE 10 10 MN) $ (LOP MN NRPT) (AIS MN NRPT) (RFI MN NRPT)
 (PLM MN RPT) $

SPM_0_STS1_2                        7
 STS1P SPM_0_STS3L_1_WORKING 2 ASYNC_DS3 SPM_0_STS1_2_PATH
 (CV 125 15 MN) (ES 100 12 MN) (SES 7 3 MN) (UAS 10 10 MN)
 (CVFE 125 15 MN) (ESFE 100 12 MN) (SESFE 7 3 MN)
 (UASFE 10 10 MN) $ (LOP MN NRPT) (AIS MN NRPT) (RFI MN NRPT)
 (PLM MN RPT) $

SPM_0_STS1_3                        8
 STS1P SPM_0_STS3L_1_WORKING 3 UNEQ SPM_0_STS1_3_PATH
 (CV 125 15 MN) (ES 100 12 MN) (SES 7 3 MN) (UAS 10 10 MN)
 (CVFE 125 15 MN) (ESFE 100 12 MN) (SESFE 7 3 MN)
 (UASFE 10 10 MN) $ (LOP MN NRPT) (AIS MN NRPT) (RFI MN NRPT)
 (PLM MN RPT) $

SPM_0_STS1_2_DS3                    9
 DS3P SPM_0_STS1_2 M23 (CV 3820 382 MN) (ES 250 25 MN)
 (SES 40 4 MN) (UAS 10 10 MN) $ (AIS MN NRPT) (LOF MJ RPT)
 (RAI MN NRPT) $

SPM_0_STS1_1_VT_1_1                 10
```

```
                    CARRKEY CCTNO
                                    CARRINFO
_____________________________________________________________________

SPM_10_STM1R_1_WORKING                  1
  STM1R SPM 10 0 9
 (BBE 34560 17280 MN) (ES 40 13 MN) (SES 14 7 MN)
 (UAS 10 10 MN) $ (LOS CR RPT) (LOF CR RPT) $

SPM_10_STM1R_1_SPARE                    2
  STM1R SPM 10 0 10 (BBE 34560 17280 MN) (ES 40 13 MN) (SES 14 7 MN)
 (UAS 10 10 MN) $ (LOS CR RPT) (LOF CR RPT) $

SPM_10_STM1M_1_WORKING                  3
  STM1M SPM_10_STM1R_1_WORKING VC4P 4 7 HSCARR 1
 (BBE 34560 17280 MN) (ES 40 13 MN) (SES 14 7 MN) (UAS 10 10 MN) $
 (RFI CR RPT) (AIS CR RPT) (EXC CR RPT) (SD CR RPT) (APSAM MN RPT)
 (APSMM MN RPT) (APSCHMM MN RPT) (APSIC MN RPT) (APSFEPLF MN RPT)
 (APSLCK MN RPT) (APSFC MN RPT) (APSMAN MN RPT)$ (TIMING Y) (ALS Y)$

SPM_10_STM1M_SPARE 173                  4
 STM1M SPM_10_STM1R_1_SPARE VC4P 3 5 HSCARR 1
 (BBE 34560 17280 MN) (ES 40 13 MN) (SES 14 7 MN) (UAS 10 10 MN) $
 (RFI CR RPT) (AIS CR RPT) (EXC CR RPT) (SD CR RPT) (APSAM MN RPT)
 (APSMM MN RPT) (APSCHMM MN RPT) (APSIC MN RPT) (APSFEPLF MN RPT)
 (APSLCK MN RPT) (APSFC MN RPT) (APSMAN MN RPT)$ (TIMING Y) (ALS Y)$

SPM_10_VC4P                             5
 VC4P SPM_10_STM1M_1_WORKING VC12P SPM_10_VC4P_TR SPM10_VC4P_RC
 (BBE 34560 17280 MN) (ES 40 13 MN) (SES 14 7 MN) (UAS 10 10 MN) $
 (RFI MN RPT) (LOP MN RPT) (TIM MN RPT) (LOM MN RPT)
 (SLM MN RPT) (AIS MN RPT) (UNEQ MN RPT) $

SPM_10_VC12P_1                          6
 VC12P SPM_10_VC4P VC4P 1 ASYNC_E1 S_10_VC12_1_TR S_10_VC12_1_RC
 (BBE 8640 4320 MN) (ES 40 13 MN) (SES 14 7 MN) (UAS 10 10 MN) $
 (RFI MN RPT) (LOP CR RPT) (TIM CR NRPT) (SLM CR RPT) (AIS CR RPT) (UNEQ CR RPT) $

SPM_10_VC12P_4                          7
  VC12P SPM_10_VC4P VC4P 4 UNEQ S_10_VC12_4_TR S_10_VC12_4_RC
 (BBE 8640 4320 MN) (ES 40 13 MN) (SES 14 7 MN) (UAS 10 10 MN) $
 (RFI MN RPT) (LOP CR RPT) (TIM CR NRPT) (SLM CR RPT) (AIS CR RPT) (UNEQ CR RPT) $

SPM_10_E1_1                             8
 E1P SPM_10_VC12P_1 ALAW G714 ON (BBE 2 2 MN) (ES 2 2 MN) (SES 1 1 MN)
 (UAS 10 10 MN) (CSS 4 1 MN) (CRC4 2 2 MN) $
 (LOF MN RPT) (RAI MN RPT) AIS MN RPT)
 (LLCMA MN RPT) (CRE MN RPT) BER MN RPT) $
```

MNHSCARR (continued)

The following figure shows sample datafill for carrier type DS1L.

```
SPM_30_LSA_1_03_04_DS1L_126

 DS1L SPM 30 1 3 4 (FRMFMT ESF) (LNCODING AMI (SFBERLIM 4) (SDBERLIM 7) $

  (CV 132960 13296 MN) (ES 648 65 MN) (SES 100 10 MN)

  (CSS 4 1 MN) (AISS 10 10 MN) (UAS 10 10 MN) $ (LOS MN RPT) (AIS MN NRPT)

  (LOF MN RPT) (RAI MN NRPT) (SFBER MN RPT) (SDBER MN PRT) $
```

Supplementary information

This section explains the error messages that can occur if you enter data incorrectly in table MNHSCARR.

Error messages specific to the SPM DS-1 Assignment SOC Control feature

Limits are set through the SOC options SPMS0016 and SPMS0017, if the user requires more carriers for this office, contact NORTEL NETWORKS to increase the limit in the event of the following message:

```
ADDITION DENIED: Adding this carrier would exceed the maximum
number of SPM carriers for this office
```

Upon calculating the number of carriers, a transient problem has resulted in failure to determine the number of carriers:

```
ERROR: Failed to determine the current number of SPM carriers
```

Table history

SN07 (DMS)

CR Q00587360-02 clarifies that, for CARRTYPE = STS3L, when the carrier is hosted off the OC3 RM of a MG4000 SPM:

- SFBERLIM (signal failure bit error rate threshold) has a fixed value of 3
- SDBERLIM (signal degradation bit error rate threshold) has a fixed value of 5

NA017

CSR Q00272460 adds the warning messages to the table that signify that the SOC functionality provides the hard usage control for provisioned SPM DS1P carriers assigned with either ISUP/PTS trunks or PRI trunks. Refer to new section “Supplementary information”.

SN04 (DMS)

The following changes were made for feature 59033790:

- CARRTYPE = STM1M
  - 8 APS failures added to field STM1MFAIL/FAILURE
  - Field STM1MOPTION added with its subfields: TIMING and ALS
- Datafill example updated with new datafill information
- CARRTYPE = DS1L added as per SPM version of MNHSCARR

MMP12

Feature 59008275 adds the carrier types STM1R, STM1, VC4P, VC12P, and E1P to table MMNHSCARR.

SPM01 (CSP09)

Table MNHSCARR was created.

MNIP

Table name

Management Network Internet Protocol

Functional description

This table is used to hold the Subnet masks, IP addresses, and the Gateway IP addresses for the SMG4 Variant SPMs. The IP address fields as per CEM for the variant are provisioned.

Datafill sequence and meaning

Since IP addresses will be needed for node registration, table MNIP must be datafilled before table MNNODE.

Table size

Table MNIP can support up to 86 tuples

Datafill

The following table lists datafill for table MNIP.

Field descriptions (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
MNIPKEY		0 to 85	Key field. Enter the SPM number.
SUBNET0		IP address with four numbers from 0 to 255	Enter the number of the subnet for CEM 0. Separate each number in the address with a single space. For example, 47 2 11 109 is equivalent to an IP address of 47.2.11.109.
CEM0IP		IP address with four numbers from 0 to 255	Enter the number of the IP address for CEM 0. Separate each number in the address with a single space. For example, 47 2 11 109 is equivalent to an IP address of 47.2.11.109.
GATEWAY0		IP address with four numbers from 0 to 255	Enter the number of the Gateway IP address for CEM 0. Separate each number in the address with a single space. For example, 47 2 11 109 is equivalent to an IP address of 47.2.11.109.

Field descriptions (Sheet 2 of 2)

Field	Subfield	Entry	Explanation and action
SUBNET1		IP address with four numbers from 0 to 255	Enter the number of the subnet for CEM 1. Separate each number in the address with a single space. For example, 47 2 11 109 is equivalent to an IP address of 47.2.11.109.
CEM1IP		IP address with four numbers from 0 to 255	Enter the number of the IP address for CEM 1. Separate each number in the address with a single space. For example, 47 2 11 109 is equivalent to an IP address of 47.2.11.109.
GATEWAY1		IP address with four numbers from 0 to 255	Enter the number of the Gateway IP address for CEM 1. Separate each number in the address with a single space. For example, 47 2 11 109 is equivalent to an IP address of 47.2.11.109.

Datafill example

The following figure shows sample datafill for table MNIP.

MAP display example for table MNIP

```
MNIPKEY  SUBNET0  CEM0IP  GATEWAY0  SUBNET1  CEM1IP  GATEWAY1
------------------------------------------------------------

SPM 40 255 255 255 0 10 102 8 148 $ 255 255 255 0 10 102 8 149 $
```

Table History

This table was introduced in CSP14.

MNIPPARM

Table name

spectruM Node Internet Protocol PARaMeters (MNIPPARM)

Functional description

Table MNIPPARM contains parameters applicable to the Interworking (IW) Spectrum Peripheral Module (SPM) IP. This table has no logical dependencies on other tables and each tuple is applicable to all SPMs of the specified type. That is, all parameters in the tuple for IWSPM apply to every IW SPM configured as a BRIDGE ONLY SPM in the office.

A default IWSPM tuple is provided. That default tuple may be modified or deleted. The defaults for each IWSPM field is shown on following pages.

Datafill sequence and meaning

Table MNIPPARM has no logical dependencies on other tables. However, the values filled in MNIPPARM have no meaning unless an IWSPM is datafilled and operational in the office.

Table size

For SN06, the maximum number of tuples in the table is one. That is, one tuple for all IW SPMs. The table gives tuples allocated for future use:

Abbreviated table name	Minimum tuples	Maximum tuples	Information on memory
MNIPPARM	0	5	Memory is automatically allocated for 5 tuples.

Datafill

The table that follows lists fields for table MNIPPARM.

Field	Subfield	Entry	Explanation and action
MNKEY		IWSPM, IPDPT, MG4K	This is the tuple key, no default value provided.
DFCODEC		G711ALAW, G711ULAW	DEFAULT_CODEC. This specifies the default codec to be used in call processing. The default offered is G711ULAW.

MNIPPARM (continued)

Field	Subfield	Entry	Explanation and action
PRFCODEC		NONE, G729	PREFERRED_CODEC. This specifies the preferred codec to be used in call processing. The default offered is NONE.
PKTRATE		10, 20	PACKETIZATION_RATE. This specifies the packetization rate in milliseconds to be used for voice packets. The default offered is 10.
INGRESS		-6 TO 6	This specifies the gain to be applied to the ingress side of the call. The default offered is 0.
EGRESS		-6 TO 6	This specifies the gain to be applied to the egress side of the call. The default offered is 0.
JITMIN		0 TO 300	This specifies the minimum jitter setting in milliseconds. The default is 0. As of SN06 JITMIN must be less than JITTARG. However JITTARG and JITMIN may be datafilled as 0.
JITMAX		0 TO 300	This specifies the maximum jitter setting in milliseconds. The default offered is 100. As of SN06 only values from 5 to 100 are supported.
JITTARG		0 TO 300	This specifies the target jitter setting in milliseconds. The default offered is 0. As of SN06 JITTARG must be less than or equal to half of JITMAX
ECAN	ECHOLOSS, ECHOTAIL	ENABLE, DISABLE	STATUS. This specifies if Echo Cancellation is active or inactive. The default offered is DISABLE. The following subfields are given when ENABLE is specified.
	ECHOLOSS	0, 3, 6	ECHO_RETURN_LOSS. This subfield specifies the loss on the echo return signal.

MNIPPARM (continued)

Field	Subfield	Entry	Explanation and action
	ECHOTAIL	16, 24, 32, 64, 96, 128	ECHO_TAIL_LENGTH. This subfield specifies the echo tail length in milliseconds. Only 128 is currently supported for SN06.
VOICE		OFF, CONSERV, AGGRESS	VOICE_DETECTION. This specifies the level of voice detection. The default is OFF.
CMFNOISE		ENABLE, DISABLE	This specifies if comfort noise is provided. The default is DISABLE.
T38		ENABLE, DISABLE	T38. This specifies if T38 fax is supported. The default is DISABLE.
RFC2833		ENABLE, DISABLE	This specifies if RFC2833 is supported. The default is DISABLE.
RTCP	INTERVAL	N,Y	This specifies if RTCP is active. When Y is specified, the interval is prompted for. The default offered is N.
	INTERVAL	1 TO 60	This subfield specifies the RTCP interval when field RTCP is set to Y.

MNIPPARM (continued)

Field	Subfield	Entry	Explanation and action
TONESET	None	NORTHAMERICA, SPAIN, UK, FRANCE, PORTUGAL, BELGIUM, GERMANY, NETHERLANDS, SWEDEN, AUSTRIA, ITALY, SWITZERLAND, AUSTRALIA, BRAZIL, IRELAND, MEXICO, ISRAEL, ROMANIA, TURKEY, CZECH, CHINA, TAIWAN, KOREA, JAPAN, PANAMA, ARGENTINA, GREECE, POLAND, NEWZEALAND, SINGAPORE, VENEZUELA, CHILE, HONGKONG, MALAYSIA, PHILIPPINES, THAILAND, INDIA	This specifies the unique toneset to be utilized based on the resident country. The default is NORTHAMERICA.
LOGINT	None	1 TO 120	This specifies the log interval. The default offered is 5.
CRCERROR	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for CRC error logs. The default offered is 20, 10.
USIZEPKT	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the undersize packet logs. The default offered is 20, 10.

MNIPPARM (continued)

Field	Subfield	Entry	Explanation and action
OSIZEPKT	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the oversized packet logs. The default offered is 20, 10.
FRAGMENT	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the fragments logs. The default offered is 20, 10.
JABBER	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the jabber logs. The default offered is 20, 10.
DROPEVNT	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the drop event logs. The default offered is 20, 10.
BRDCAST	RISE, FALL	0 T0 100	MNPARM_THRESHOLD. This specifies the settings for the broadcast logs. The default offered is 20, 10.
JITTER	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the jitter logs. The default offered is 20, 10.
LATENCY	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the latency logs. The default offered is 20, 10.
VPKTLOST	RISE, FALL	0 TO 100	MNPARM_THRESHOLD. This specifies the settings for the voice packets lost logs. The default offered is 20, 10.

MNIPPARM (continued)

Field	Subfield	Entry	Explanation and action
MINLOG	None	0 TO 1000000	LOG_REPORT_MIN_VOLUME. This specifies the minimum packet volume for log reporting. The default offered is 1000.
OMPARMS	RTPLOSTE, JTREXC, LATEXC	1 TO 100, 1 TO 3000, 1 TO 3000	OMPARMS. This specifies operational measurement parameters. RTPLOSTE specifies the threshold value of RTP packets lost for pegging a particular OM. JTREXC specifies the threshold jitter value for pegging a particular OM. LATEXC specifies the threshold latency value for pegging a particular OM.

Datafill example

The examples show sample datafill for table MNIPPARM:

Example 1.

```
MNKEY  DFCODEC PRFCODEC PKTRATE INGRESS EGRESS JITMIN JITMAX JITTARG
         ECAN   VOICE CMFNOISE     T38 RFC2833 RTCP      TONESET LOGINT
CRCERROR USIZEPKT OSIZEPKT FRAGMENT  JABBER DROPEVNT BRDCAST  JITTER LATENCY
VPKTLOST  MINLOG         OMPARMS
------------------------------------------------------------------------
IWSPM G711ULAW     NONE      10       0      0    0    100     0
     DISABLE      OFF  DISABLE DISABLE DISABLE   N  NORTHAMERICA      5
  20  10   20  10   20  10   20  10  20  10   20  10  20  10  20  10  20  10
  20  10    1000  50  1000  1000
```

Example 2.

```
MNKEY  DFCODEC PRFCODEC PKTRATE INGRESS EGRESS JITMIN JITMAX JITTARG
         ECAN   VOICE CMFNOISE     T38 RFC2833 RTCP      TONESET LOGINT
CRCERROR USIZEPKT OSIZEPKT FRAGMENT  JABBER DROPEVNT BRDCAST  JITTER LATENCY
VPKTLOST  MINLOG         OMPARMS
------------------------------------------------------------------------
IWSPM G711ULAW     NONE      10       0      0    0    100     0
 ENABLE 6  128     OFF  DISABLE DISABLE DISABLE Y 15 NORTHAMERICA      5
  20  10   20  10   20  10   20  10  20  10   20  10  20  10  20  10  20  10
  20  10    1000  50  1000  1000
```

Table history

SN06 (DMS)

This table was created for feature number 89007551.

Additional information

This section lists the default values for table MNIPPARM.

IWSPM tuple defaults

You can modify the IWSPM tuple if required. If you are modifying a field value, you should have a good understanding of the effect of the change.

It is possible to delete the IWSPM tuple. In the scenario where an IWSPM tuple is not datafilled, that is the tuple was deleted, the SPMs use the default values for the parameters.

If the IWSPM tuple is modified after an one-night-process (ONP) to SN06 and you later want to go back to SN05 the tuple must be restored to its defaults or removed first. Removing the tuple from MNIPPARM has the same effect as switching back to the default values. In other words, IW-SPM-IP peripherals are reset to the MNIPPARM defaults shown in the table below.

Default values for the IWSPM tuple

Field Name	Default Value
DFCODEC	G711ULAW
PRFCODEC	NONE
PKTRATE	10
INGRESS	0
EGRESS	0
JITMIN	0
JITMAX	100
JITTARG	0
ECAN	DISABLE
VOICE	OFF
CMFNOISE	DISABLE
T38	DISABLE

MNIPPARM (end)

Default values for the IWSPM tuple

Field Name	Default Value
RFC2833	DISABLE
RTCP	N
TONESET	NORTHAMERICA
LOGINT	5
CRCERROR	20 10
USIZEPKT	20 10
OSIZEPKT	20 10
FRAGMENT	20 10
JABBER	20 10
DROPEVNT	20 10
BRDCAST	20 10
JITTER	20 10
LATENCY	20 10
VPKTLOST	20 10
MINLOG	1000
OMPARMS	50 1000 1000

MNLINK

Table name

Management Network Link (MNLINK)

Functional description

Table MNLINK (Management Network Link) is one of six tables used to configure the DMS-Spectrum Peripheral Module (SPM). The data maintained in this table includes the link identifier and end-points of the link. Each tuple in the table identifies the C-side host link set for an SPM. The term *host link* refers to the DS-512 fiber links between the common equipment module (CEM) and the enhanced network (ENET) card.

Datafill sequence and implications

Datafill new link information in table MNLINK before putting new ENET cards or SPM modules on line. Before making changes to table MNLINK, set the ENET cards, which are connected to the SPM node specified in field NODEID, to the offline (OFFL) state.

After the links are datafilled in table MNLINK, use command TRNSL at the CEM level of the MAP terminal to view the ENET link assignments. Refer to the *DMS-Spectrum Peripheral Module Commands Reference Manual* (297-1771-819) for additional information about command TRNSL. Refer to the appropriate DMS-100 or DMS-250 *Commands Reference Manual* for information on ENET commands.

Datafill tables in the following order:

1. table PMLOADS

   Note: Table PMLOADS specifies the location of a particular load file. Datafill PMLOADS only once. There is no need to datafill PMLOADS for each SPM added to the system, unless a new load file entry must be added to table PMLOADS.

2. table MNPRTGRP
3. table MNNODE
4. table MNSHELF
5. table MNCKTPAK
6. table ENCDINV
7. table MNLINK
8. table MNHSCARR

If the ENET XPT card terminating SPM host links has not been added to table ENCDINV, the following message displays:

```
Addition verification failed at ENET end,...
```

If CEM circuit packs of the SPM has not been added to table MNCKTPAK, the following message displays:

```
Cannot find the circuit pack
```

Table size

0 to 64 tuples

Field descriptions

The following table describes field names, subfield names, and valid data ranges for table MNLINK.

(Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LKSETKEY		See subfields	LINKSET KEY. This field consists of subfields NODETYPE and NODEID. This is the key field to table MNLINK.
	NODETYPE	SPM	NODE TYPE. Enter SPM.
	NODEID	0 to 63	NODE IDENTIFIER. Enter the SPM node identifier. The default value is 0 (zero).
CSLNKSET		See subfields	C-SIDE HOST LINK SET. This is a vector consisting of 4 entries. Each entry defines a paired connection between one of the two SPM CEMs and the ENET. The subfields are LKPAIRID, ENSHELF, ENSLOT, and ENLINK. ***Note:*** There are four optical fiber cables for each CEM. Enter four entries for each CSLINKSET vector. See the following table.

MNLINK (continued)

(Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	LKPAIRID	1 to 4	LINK PAIR IDENTITY. Enter the identity of the host link pair at the SPM end. The default value is 1.
	ENSHELF	0 to 3	ENET SHELF. Enter the ENET shelf where the link pair terminates. The default value is 0 (zero).
	ENSLOT	9 to 32	ENET SLOT. Enter the ENET crosspoint (XPT) card slot where the link terminates. The default value is 32.
	ENLINK	0 to 18	ENET LINK. Enter the ENET port (link) on the XPT card where the link terminates. The default value is 0 (zero).

Datafill example

Each CEM module has four fiber-optic cable pairs. Each pair must be entered as a vector in field CSLNKSET. The following is an example of a link split over two shelves.

(Sheet 1 of 2)

CEM 0		**ENET PLANE 0**		
CEM unit	**CEM link ID**	**ENET shelf**	**ENET slot**	**ENET link**
0	1	0	14	0
0	2	0	14	1
0	3	1	15	2
0	4	1	15	3
CEM 1		ENET PLANE 1		
CEM unit	CEM link ID	ENET shelf	ENET slot	ENET link
1	1	0	14	0

(Sheet 2 of 2)

CEM 0		ENET PLANE 0		
CEM unit	**CEM link ID**	**ENET shelf**	**ENET slot**	**ENET link**
1	2	0	14	1
1	3	1	15	2
1	4	1	15	3

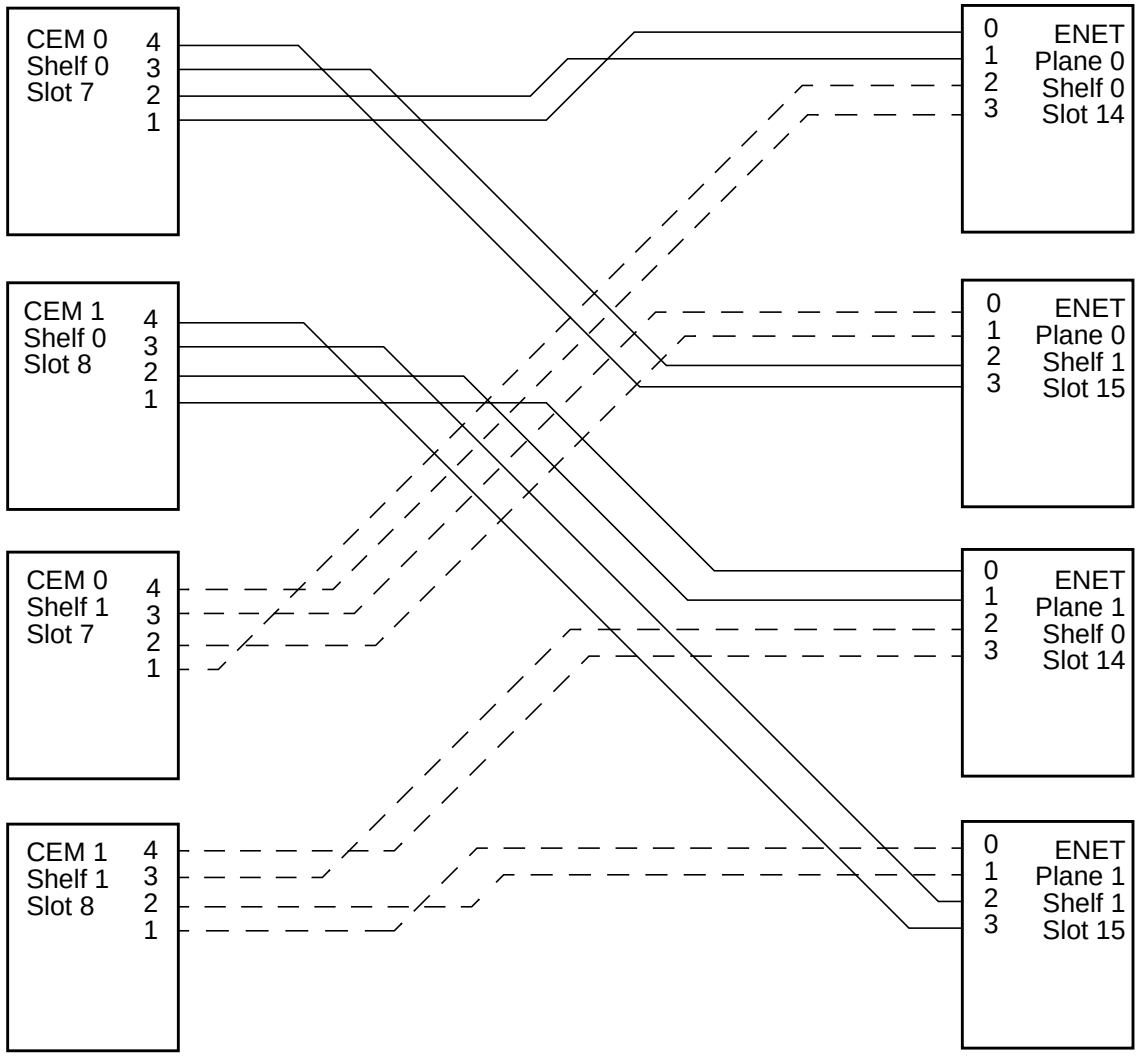
An example of the connection of SPM host links to the ENET plane is shown in the following table.

Shelf ID	Slot	CEM unit	Host link ID	ENET plane
0	7	0	1	0
0	7	0	2	0
0	7	0	3	0
0	7	0	4	0
0	8	1	1	1
0	8	1	2	1
0	8	1	4	1
0	8	1	3	1

The following figure shows the relationship of the DS-512 links between the CEM in the SPM and the NT9X40 cards in the ENET.

MNLINK (continued)

DS-512 link configuration



Note: All lines are DS-512 links. Dash lines are used for contrast.

The following shows sample datafill for table MNLINK.

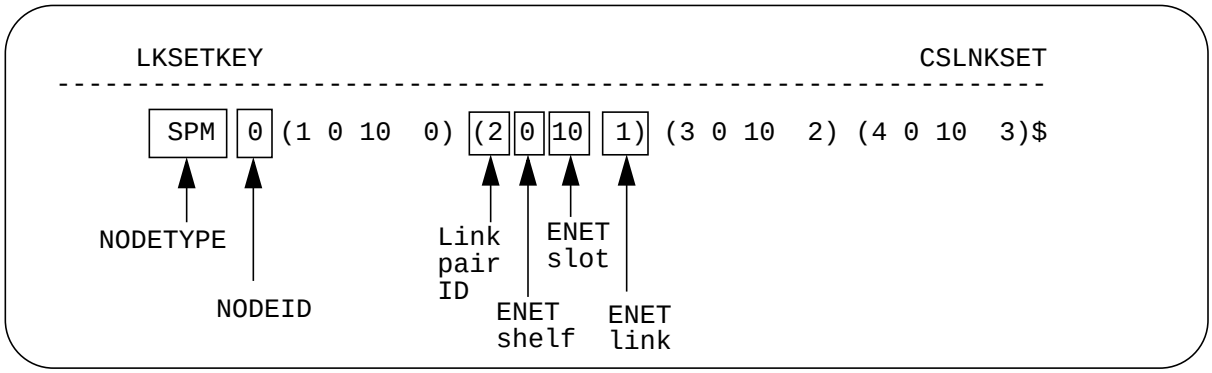


Table history

SNH01

Added DS-512 link configuration figure. Changed datafill example.

SPM01 (CSP09)

Table MNLINK was created.

MNMGPIP

Table name

Management Network Media Gateway Processor Internet Protocol (MNMGPIP)

Functional description

Table MNMGPIP is a configuration table for an Spectrum Peripheral Module (SPM) in an Interworking (IW) SPM Internet Protocol (IP) (IW SPM IP) configuration. This table defines the Internet Protocol related parameters for a Media Gateway Processor (MGP) Resource Module (RM). The IP parameters stored in the table are as follows:

- Gigabit ethernet module (GEM) management IP address
- Subnet mask
- Broadcast IP address
- Gateway IP address
- GEM Bearer IP address
- Auto-negotiation activation

Datafill sequence and meaning

Enter datafill into table MNCKTPAK before table MNMGPIP.

Table size

The maximum number of tuples in the table is 960.

Datafill

The table that follows lists datafill for table MNMGPIP.

Field descriptions (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
MGPKEY		See subfields.	Media Gateway Processor Key. The subfields are NODETYP, SPM_NO, SHELF_NO, and SLOT_NO.
	NODETYP	SPM	Node type. Enter SPM.
	SPM_NO	0-63	SPM number. Enter the SPM node identifier.
	SHELF_NO	0 or 1	Shelf number. Enter the number of the shelf that the MGP RM is in.

MNMGPIP (continued)

Field descriptions (Sheet 2 of 2)

Field	Subfield	Entry	Explanation and action
	SLOT_NO	1-14	Slot number. Enter the number of the slot that the MGP RM is in. Enter 3 or 4.
GEMMGMIP		000.000.000.000 to 255.255.255.255	GEM management IP address. Enter the IP address of the GEM management.
SUBNMASK		000.000.000.000 to 255.255.255.255	Subnet mask. Enter the IP address of the subnet mask.
BCASTIP		000.000.000.000 to 255.255.255.255	Broadcast IP address. Enter the IP address of the broadcast address. The default value is 000.000.000.000.
GWIP		000.000.000.000 to 255.255.255.255	Gateway IP address. Enter the IP address of the network gateway. The default value is 000.000.000.000.
GEMBARIP		000.000.000.000 to 255.255.255.255	GEM bearer IP address. Enter the IP address for the GEM bearer.
AUTONEG		Y or N	Datafills the auto-negotiation capability on the gigabit ethernet port of a GEM resource module. Enter Y for Yes or N for No.

Datafill example

The table below shows sample datafill for table MNMGPIP.

MGPKEY	GEMMGMIP	SUBNMASK	BCASTIP	GWIP	GEMBARIP	AUTONEG
SPM 0 0 9	172 16 121 2	255 255 255 0	172 16 121 255	172 16 121 1	172 16 121 4	Y
SPM 0 0 10	172 16 121 3	255 255 255 0	172 16 121 255	172 16 121 1	172 16 121 4	N
SPM 1 0 9	172 16 121 5	255 255 255 0	172 16 121 255	172 16 121 1	172 16 121 7	Y
SPM 1 0 10	172 16 121 6	255 255 255 0	172 16 121 255	172 16 121 1	172 16 121 7	Y

Table history

SN06 (DMS)

This table was updated for feature number 89007551.

SNH01

Table MNMGPIP was created by feature 59021870.

Additional information

This section provides information on dump and restore procedures for table MNMGPIP.

Dump and Restore

During dump and restore, where tables are from before SN06, the default value of Y is assigned to the new field AUTONEG.

MNNODE

Table name

Management Network Node (MNNODE)

Functional description

Table MNNODE is one of six tables used to configure a DMS-Spectrum Peripheral Module (SPM) node. The data maintained in this table includes:

- The node identifier and the node location
- The class and variant of the SPM
- The clock reference details for the SPM
- The resource information that the SPM can provide
- The alarm information for SPM failure modes
- The name of the EXEC for the call processing (CallP)

Datafill sequence and implications

Datafill tables in the following order:

1. table PMLOADS

   Note: Table PMLOADS specifies the location of a particular load file. Datafill PMLOADS only once. There is no need to datafill PMLOADS for each SPM added to the system unless a new load file entry has to be added to table PMLOADS.

2. table MNPRTGRP
3. table MNIP
4. table MNNODE
5. table MNSHELF
6. table MNCKTPAK
7. table MNLINK
8. table MNHSCARR

In a DMS-250 switch load, there is no change to the existing datafill sequence. Table MNNODE does not depend on any other tables being datafilled.

MNNODE (continued)

Tables must be datafilled in the following sequence if the SPMECIDX option is added to BRDG_ONLY IW class SPMs:

- SPMECAN
- MNNODE

Table size

The table size for table MNNODE is as follows:

Table size

Table	Minimum tuples	Maximum tuples	Information on memory
MNNODE	0	86	The memory is allocated dynamically when the tuple is added from the OAM database pool.

Field descriptions

The following table describes field names, subfield names, and valid data ranges for table MNNODE.

Datafill for table MNNODE (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
NODEKEY		See subfields	Node key, the subfields are NODETYPE and NODEID.
	NODETYPE	Text	NODE TYPE, for example SPM.
	NODEID	Number, 0 to 85	NODE IDENTIFIER. Enter the node identifier. The default value is 0.

Datafill for table MNNODE (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
ALIAS		1 to 12 alphanumeric characters	ALIAS. Enter an alias for the node.
CLASS		SMG4, DMSCP, IW	This field serves as the data selector (or refinement tag) for an SPM's datafill. Enter the class associated with each SPM's datafill to indicate its intended functionality. For example, for DMSCP (DMS call processing). Assign SPMs deployed as DMS call processing peripherals to this class. For all software releases before SP12, the ONP automatically converts SPMs to this class. See the following for further datafill: "Field descriptions when CLASS=DMSCP" "Field descriptions when CLASS=SMG4" "Field descriptions when CLASS=IW"

Conditional datafill when CLASS=DMSCP

The table that follows lists conditional datafill when you enter DMSCP in field CLASS.

Field descriptions when CLASS=DMSCP (Sheet 1 of 8)

Field	Subfield or refinement	Entry	Explanation and action
FLOOR		0 to 99	FLOOR. Enter the floor where the node is located.
CLKMODE		SYNC	CLOCK MODE. Enter SYNC. SYNC (synchronization mode) is the only valid entry for field CLKMODE.

MNNODE (continued)

Field descriptions when CLASS=DMSCP (Sheet 2 of 8)

Field	Subfield or refinement	Entry	Explanation and action
CLKREF		INTERNAL, EXTERNAL, LINE, or LOOP	CLOCK REFERENCE. A newly added SPM should be datafilled as LINE. Enter a clock synchronization reference from the following list: • INTERNAL (The clock synchronizes to the DMS message switch. This is the default value.) • EXTERNAL (The clock synchronizes to the SRM.) • LINE (The clock synchronizes to the ATM RM.) • LOOP (The clock synchronizes to the local OC-3 network.) ***Note:*** At initial program loading (IPL), field CLKREF is datafilled with the default value INTERNAL. If an SPM is datafilled in table SYNCLK as a sync source, table control prevents a change from INTERNAL to LOOP. An attempt to make such a change from INTERNAL to LOOP results in the following message: “SPM is datafilled in table SYNCLK as a SYNC SOURCE.” When SPM OC-3 line timing is not employed and an SPM node is connected to an OC-3 SONET network, enter LOOP into field CLKREF to ensure correct OC-3 network timing.
LEDTIMER		0 to 1440	LED TIME-OUT PERIOD. Enter the LED timeout period in minutes. If the SPM detects no critical faults during the timeout period, the alarm LEDs turn off in order to extend their life. Enter 0 (zero) if the LEDs are to stay on at all times. The default value is 15.
RSRUTLIM		See subfields	RESOURCE UTILIZATION. This field consists of a vector of up to five entries in subfields RESTYPE and THRESHLD. Each entry sets a low water mark use threshold, as a percent, for a resource type. If the use exceeds the threshold, alarms or logs generate. Enter $ to select default values.

Field descriptions when CLASS=DMSCP (Sheet 3 of 8)

Field	Subfield or refinement	Entry	Explanation and action
	RESTYPE	COT, DTMF, ECAN, TONESYN, MF	RESOURCE TYPE. Enter a resources type from the following list: • COT (continuity test) • DTMF (dual-tone multi-frequency) • ECAN (echo cancellation) • TONESYN (tone synthesizer) • MF (multi-frequency signaling)
	THRESHLD	10 to 100	UTILIZATION THRESHOLD. Enter the low water threshold as a percent of total resource. The default values are 60% for COT, DTMF, ECAN, TONESYN, and MF.
ALRMCTRL		See subfields	ALARM CONTROL INFORMATION. This field consists of a vector of up to ten entries in subfields ALARM and ATTR. Each entry controls a particular alarm. Enter $ to select the system default values.
	ALARM	SYSB, MANB, ISTB, SYSBNA, MANBNA, COTLOW, DTMFLOW, ECANLOW, TONESLOW, MFLOW	ALARM NAME. Enter an alarm name from the following list: • SYSB (system busy) This alarm generates when the node is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) This alarm generates when the node is in manual busy state. The default alarm severity is MJ. The default action is RPT.

MNNODE (continued)

Field descriptions when CLASS=DMSCP (Sheet 4 of 8)

Field	Subfield or refinement	Entry	Explanation and action
			• ISTB (in-service-trouble) This alarm generates when the node is in-service and it is experiencing non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • SYSBNA (system busy and not accessible) This alarm generates when the node is in SYSB state and a network (for example, ENET or MS) error has caused it to be isolated. The default alarm severity is CR. The default action is RPT. • MANBNA (manual busy and not accessible) This alarm generates when the node is in MANB state, and a network (for example, ENET or MS) error has caused it to be isolated. The default alarm severity is MJ. The default action is RPT. • COTLOW (low water mark threshold for COT has been crossed) This alarm generates when use of the COT resource exceeds the threshold previously set, which means that the COT resource is in short supply. The default alarm severity is MN. The default action is RPT. • DTMFLOW (low water mark threshold for DTMF has been crossed) This alarm generates when use of DTMF resources exceeds the threshold previously set, meaning that DTMF resources are in short supply. The default alarm severity is MN. The default action is RPT.

Field descriptions when CLASS=DMSCP (Sheet 5 of 8)

Field	Subfield or refinement	Entry	Explanation and action
			• TONESLOW (low water mark threshold for TONESYN has been crossed). This alarm generates when use of the TONESYN resources exceeds the threshold previously set, meaning that TONESYN resource is in short supply. The default alarm severity is MN. The default action is RPT. • The “configdata all verbose" command displays the list of RMs that were provisioned, as well as other information pertaining to each RM, including the ProtWhomId. This number is found in the line that reads “This RM is currently protecting the services provisioned on RM X". “X" represents the ProtWhomId of that particular RM. Find the RMid whose associated ProtWhomId is the RMid of the RM to have its datafill changed. • MFLOW (low water mark threshold for MF has been crossed). This alarm generates when use of the MF resource exceeds the threshold previously set, meaning that MF resources are in short supply. The default alarm severity is MN. The default action is RPT. • ECANLOW (low water mark threshold for ECAN has been crossed) This alarm generates when use ECAN resources exceeds the threshold previously set, meaning that ECAN resources are in short supply. The default alarm severity is MN. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTES. This field consists of subfields SEVERITY and ACTION.

MNNODE (continued)

Field descriptions when CLASS=DMSCP (Sheet 6 of 8)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	SEVERITY. The severity of the alarm defines its relative importance. Enter a severity from the following list: • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT, RPT	ACTION. This subfield indicates the action to be taken when a fault is detected. Enter an action from the following list: • NRPT (no report generated) • RPT (report generated)
EXECTAB		See subfields	EXECUTABLES TABLE. This field is a vector of up to eight entries (one for each terminal type) in subfields EXEC and TRMTYPE. Each entry defines an executable lineup to be downloaded for a particular terminal type. If a node supports ISUP trunks only (no PTS or PRI trunks), enter $ in the subfields. If a node supports PTS or PRI trunks, datafill subfields EXEC and TRMTYPE.

Field descriptions when CLASS=DMSCP (Sheet 7 of 8)

Field	Subfield or refinement	Entry	Explanation and action
	TRMTYPE	AB250, ABSPX, ABTRK, PRAB, PRAB500, POTS, or KEYSET	TERMINAL TYPE. Enter one of the following values for PTS trunks: • AB250 (PTS trunk configuration specific to the DMS-250 switch) • ABSPX (for PX FX trunks on an SPM that already has provisioned DAL trunks). This value must accompany an EXEC value of PXSPMX. ***Note:*** Only one instance of terminal type ABSPX may exist at a time. • ABTRK (standard PTS trunk configuration) • PRAB (Primary Rate Access B channels). • PRAB500 (Primary Rate Access B channels). This value must accompany an EXEC value of SPM250. ***Note:*** For PRI 100 and PRI 250 trunks to coexist on the same SPM, PRAB should be used for PRI 100 trunks and PRAB500 for PRI 250 trunks. • POTS (for POTS lines). This value must accompany a value of SPMPEX in the EXEC field. • KEYSET (for keyset lines). This value must accompany a value of SPMKEY in the EXEC field. Entries outside the range indicated for this field are invalid. ***Note:*** ISUP (or SS7) trunks do not require datafill in the EXECTAB field of table MNNODE. They are provisioned similar to how they are done with DTCs.

MNNODE (continued)

Field descriptions when CLASS=DMSCP (Sheet 8 of 8)

Field	Subfield or refinement	Entry	Explanation and action
	EXEC	SPM250, SPMEX, SPMFX, FXOSPM, PXDTCX, PXSPMX, SPMPEX, or SPMKEX	EXEC LINEUP NAME. Enter the following values for SPM nodes supporting PTS trunks: • SPM250 • SPMEX. For DT, DP, or MF signalling, all 12 trunk types use ABTRK in the TRMTYPE field. For 100 PRA trunks, SPMEX should be used with a value PRAB in the TRMTYPE field. • SPMFX • FXOSPM • PXDTCX (for PX trunks that use FX signalling on the DTC). This value must accompany a value of AB250 in the TRMTYPE field. • PXSPMX (for PX FX trunks on an SPM that already has provisioned DAL trunks). This value must accompany a value of ABSPX in the TRMTYPE field. • SPMPEX (for POTS lines). This value must accompany a value of POTS in the TRMTYPE field. • SPMKEX (for keyset lines). This value must accompany a value of KEYSET in the TRMTYPE feld. ***Note:*** For any trunk type that can use FX signalling, you must enter SPMFX or FXOSPM. Entries outside the range indicated for this field are invalid.

Conditional datafill when CLASS=SMG4

The table that follows lists conditional datafill when you enter SMG4 in field CLASS.

Field descriptions when CLASS=SMG4 (Sheet 1 of 8)

Field	Subfield or refinement	Entry	Explanation and action
FLOOR		0 to 99	FLOOR. Enter the floor where the node is located.
CLKMODE		SYNC	CLOCK MODE. Enter SYNC. SYNC (synchronization mode) is the only valid entry for field CLKMODE.
CLKREF		INTERNAL, EXTERNAL, LINE or LOOP	CLOCK REFERENCE. Enter a clock synchronization reference from the following list: • INTERNAL (The clock synchronizes to the DMS message switch. This is the default value.) • EXTERNAL (The clock synchronizes to the SRM) • LINE (The clock synchronizes to the ATM RM) • LOOP (The clock synchronizes to the local OC-3 network.) ***Note:*** At initial program loading (IPL), field CLKREF is datafilled with the default value INTERNAL. If an SPM is datafilled in table SYNCLK as a sync source, table control prevents a change from INTERNAL to LOOP. An attempt to make such a change from INTERNAL to LOOP results in the following message: “SPM is datafilled in table SYNCLK as a SYNC SOURCE.” When SPM OC-3 line timing is not employed and an SPM node is connected to an OC-3 SONET network, enter LOOP into field CLKREF to ensure correct OC-3 network timing.
LEDTIMER		0 to 1440	LED TIME-OUT PERIOD. Enter the LED timeout period in minutes. If the SPM detects no critical faults during the timeout period, the alarm LEDs turn off in order to extend their life. Enter 0 (zero) if the LEDs are to stay on at all times. The default value is 15.

MNNODE (continued)

Field descriptions when CLASS=SMG4 (Sheet 2 of 8)

Field	Subfield or refinement	Entry	Explanation and action
RSRUTLIM		See subfields	RESOURCE UTILIZATION. This field consists of a vector of up to five entries in subfields RESTYPE and THRESHLD. Each entry sets a low water mark use threshold, as a percent, for a resource type. If the use exceeds the threshold, alarms or logs generate. Enter $ to select default values.
	RESTYPE	COT, DTMF, ECAN, TONESYN, MF	RESOURCE TYPE. Enter a resources type from the following list: • COT (continuity test) • DTMF (dual-tone multi-frequency) • ECAN (echo cancellation) • TONESYN (tone synthesizer) • MF (multi-frequency signaling)
	THRESHLD	10 to 100	UTILIZATION THRESHOLD. Enter the low water threshold as a percent of total resource. The default values are 60% for COT, DTMF, ECAN, TONESYN, and MF.
ALRMCTRL		See subfields	ALARM CONTROL INFORMATION. This field consists of a vector of up to ten entries in subfields ALARM and ATTR. Each entry controls a particular alarm. Enter $ to select the system default values.
	ALARM	SYSB, MANB, ISTB, SYSBNA, MANBNA, COTLOW, DTMFLOW, ECANLOW, TONESLOW, MFLOW	ALARM NAME. Enter an alarm name from the following list: • SYSB (system busy) This alarm generates when the node is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) This alarm generates when the node is in manual busy state. The default alarm severity is MJ. The default action is RPT.

Field descriptions when CLASS=SMG4 (Sheet 3 of 8)

Field	Subfield or refinement	Entry	Explanation and action
			• ISTB (in-service-trouble) This alarm generates when the node is in-service and it is experiencing non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • SYSBNA (system busy and not accessible) This alarm generates when the node is in SYSB state and a network (for example, ENET or MS) error has caused it to be isolated. The default alarm severity is CR. The default action is RPT. • MANBNA (manual busy and not accessible) This alarm generates when the node is in MANB state, and a network (for example, ENET or MS) error has caused it to be isolated. The default alarm severity is MJ. The default action is RPT. • COTLOW (low water mark threshold for COT has been crossed) This alarm generates when use of the COT resource exceeds the threshold previously set, which means that the COT resource is in short supply. The default alarm severity is MN. The default action is RPT. • DTMFLOW (low water mark threshold for DTMF has been crossed) This alarm generates when use of DTMF resources exceeds the threshold previously set, meaning that DTMF resources are in short supply. The default alarm severity is MN. The default action is RPT.

MNNODE (continued)

Field descriptions when CLASS=SMG4 (Sheet 4 of 8)

Field	Subfield or refinement	Entry	Explanation and action
			• TONESLOW (low water mark threshold for TONESYN has been crossed). This alarm generates when use of the TONESYN resources exceeds the threshold previously set, meaning that TONESYN resource is in short supply. The default alarm severity is MN. The default action is RPT. • The “configdata all verbose" command displays the list of RMs that were provisioned, as well as other information pertaining to each RM, including the ProtWhomId. This number is found in the line that reads “This RM is currently protecting the services provisioned on RM X". “X" represents the ProtWhomId of that particular RM. Find the RMid whose associated ProtWhomId is the RMid of the RM to have its datafill changed. • MFLOW (low water mark threshold for MF has been crossed). This alarm generates when use of the MF resource exceeds the threshold previously set, meaning that MF resources are in short supply. The default alarm severity is MN. The default action is RPT. • ECANLOW (low water mark threshold for ECAN has been crossed) This alarm generates when use ECAN resources exceeds the threshold previously set, meaning that ECAN resources are in short supply. The default alarm severity is MN. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTES. This field consists of subfields SEVERITY and ACTION.

Field descriptions when CLASS=SMG4 (Sheet 5 of 8)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	SEVERITY. The severity of the alarm defines its relative importance. Enter a severity from the following list: • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT, RPT	ACTION. This subfield indicates the action to be taken when a fault is detected. Enter an action from the following list: • NRPT (no report generated) • RPT (report generated)
EXECTAB		See subfields	EXECUTABLES TABLE. This field is a vector of up to eight entries (one for each terminal type) in subfields EXEC and TRMTYPE. Each entry defines an executable lineup to be downloaded for a particular terminal type. If a node supports ISUP trunks only (no PTS or PRI trunks), enter $ in the subfields. If a node supports PTS or PRI trunks, datafill subfields EXEC and TRMTYPE.

MNNODE (continued)

Field descriptions when CLASS=SMG4 (Sheet 6 of 8)

Field	Subfield or refinement	Entry	Explanation and action
	TRMTYPE	AB250, ABSPX, ABTRK, PRAB, PRAB500, POTS, or KEYSET	TERMINAL TYPE. Enter one of the following values for PTS trunks: • AB250 (PTS trunk configuration specific to the DMS-250 switch) • ABSPX (for PX FX trunks on an SPM that already has provisioned DAL trunks). This value must accompany an EXEC value of PXSPMX. ***Note:*** Only one instance of terminal type ABSPX may exist at a time. • ABTRK (standard PTS trunk configuration) • PRAB (Primary Rate Access B channels). • PRAB500 (Primary Rate Access B channels). This value must accompany an EXEC value of SPM250. ***Note:*** For PRI 100 and PRI 250 trunks to coexist on the same SPM, PRAB should be used for PRI 100 trunks and PRAB500 for PRI 250 trunks. • POTS (for POTS lines). This value must accompany a value of SPMPEX in the EXEC field. • KEYSET (for keyset lines). This value must accompany a value of SPMKEY in the EXEC field. Entries outside the range indicated for this field are invalid. ***Note:*** ISUP (or SS7) trunks do not require datafill in the EXECTAB field of table MNNODE. They are provisioned similar to how they are done with DTCs.

Field descriptions when CLASS=SMG4 (Sheet 7 of 8)

Field	Subfield or refinement	Entry	Explanation and action
	EXEC	SPM250, SPMEX, SPMFX, FXOSPM, PXDTCX, PXSPMX, SPMPEX, or SPMKEX	EXEC LINEUP NAME. Enter the following values for SPM nodes supporting PTS trunks: • SPM250 • SPMEX. For DT, DP, or MF signalling, all 12 trunk types use ABTRK in the TRMTYPE field. For 100 PRA trunks, SPMEX should be used with a value PRAB in the TRMTYPE field. • SPMFX • FXOSPM • PXDTCX (for PX trunks that use FX signalling on the DTC). This value must accompany a value of AB250 in the TRMTYPE field. • PXSPMX (for PX FX trunks on an SPM that already has provisioned DAL trunks). This value must accompany a value of ABSPX in the TRMTYPE field. • SPMPEX (for POTS lines). This value must accompany a value of POTS in the TRMTYPE field. • SPMKEX (for keyset lines). This value must accompany a value of KEYSET in the TRMTYPE feld. ***Note:*** For any trunk type that can use FX signalling, you must enter SPMFX or FXOSPM. Entries outside the range indicated for this field are invalid.
DPT		Y or N	Set DPT to Y to represent the SPM as a DPT terminal. The default value is N.
	DPT_NUM_REQ	0 to 2016	This field represents the range value for the DPT SPM.
SLINK_THRESHOLD_DATA		1. (table of 3 {1 to 3}, {0 to 3}) 2. (0 to 3)	This field represents the signalling link threshold data for the SPM.

MNNODE (continued)

Field descriptions when CLASS=SMG4 (Sheet 8 of 8)

Field	Subfield or refinement	Entry	Explanation and action
BOOTP_SUPPRESS		Y or N	Y suppresses the BootP and TFTP messages on the Multi-service Gateway 4000 (MG4000) OAMP network. N is the default value.
REMOTE		Y or N	Y indicates that the particular MG4000 is remotely located. N indicates that the MG4000 node is located at the host office (CS2K office). N is the default value. ***Note 1:*** Changing REMOTE from N to Y raises all existing faults (SIM A/ SIM B/ PCIU/ FAN) of the particular MG4K within 15 minutes. EXT MAP banner is updated (incremented) and SPM619 & EXT102 fault logs are generated. ***Note 2:*** Changing REMOTE from Y to N clears all existing faults (SIM A/ SIM B/ PCIU/ FAN) of the particular remote MG4K within 15 minutes. EXT MAP banner is updated (decremented) and SPM619 & EXT102 clear logs are generated.

Conditional datafill when CLASS=IW

The table that follows lists conditional datafill when you enter IW in field CLASS.

Field descriptions when CLASS=IW (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
FLOOR		0 to 99	FLOOR. Enter the floor where the node is located.
CLKMODE		SYNC	CLOCK MODE. Enter SYNC. SYNC (synchronization mode) is the only valid entry for field CLKMODE.

Field descriptions when CLASS=IW (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
CLKREF		INTERNAL, EXTERNAL, LINE or LOOP	CLOCK REFERENCE. Enter a clock synchronization reference from the following list: • INTERNAL (The clock synchronizes to the DMS message switch. This is the default value.) • EXTERNAL (The clock synchronizes to the SRM) • LINE (The clock synchronizes to the ATM RM) • LOOP (The clock synchronizes to the local OC-3 network.) ***Note:*** At initial program loading (IPL), field CLKREF is datafilled with the default value INTERNAL. If an SPM is datafilled in table SYNCLK as a sync source, table control prevents a change from INTERNAL to LOOP. An attempt to make such a change from INTERNAL to LOOP results in the following message: “SPM is datafilled in table SYNCLK as a SYNC SOURCE.” When SPM OC-3 line timing is not employed and an SPM node is connected to an OC-3 SONET network, enter LOOP into field CLKREF to ensure correct OC-3 network timing.
LEDTIMER		0 to 1440	LED TIME-OUT PERIOD. Enter the LED timeout period in minutes. If the SPM detects no critical faults during the timeout period, the alarm LEDs turn off in order to extend their life. Enter 0 (zero) if the LEDs are to stay on at all times. The default value is 15.
RSRUTLIM		See subfields	RESOURCE UTILIZATION. This field consists of a vector of up to five entries in subfields RESTYPE and THRESHLD. Each entry sets a low water mark use threshold, as a percent, for a resource type. If the use exceeds the threshold, alarms or logs generate. Enter $ to select default values.

MNNODE (continued)

Field descriptions when CLASS=IW (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	RESTYPE	DTMF, ECAN, TONESYN	RESOURCE TYPE. Enter a resources type from the following list: • DTMF (dual-tone multi-frequency) • ECAN (echo cancellation) • TONESYN (tone synthesizer)
	THRESHLD	10 to 100	UTILIZATION THRESHOLD. Enter the low water threshold as a percent of total resource. The default values are 60% for DTMF, ECAN and TONESYN.
ALRMCTRL		See subfields	ALARM CONTROL INFORMATION. This field consists of a vector of up to ten entries in subfields ALARM and ATTR. Each entry controls a particular alarm. Enter $ to select the system default values.
	ALARM	SYSB, MANB, ISTB, SYSBNA, MANBNA, COTLOW, DTMFLOW, ECANLOW, TONESLOW, MFLOW	ALARM NAME. Enter an alarm name from the following list: • SYSB (system busy) This alarm generates when the node is in system busy state. The default alarm severity is CR. The default action is RPT. • MANB (manual busy) This alarm generates when the node is in manual busy state. The default alarm severity is MJ. The default action is RPT.

Field descriptions when CLASS=IW (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
			• ISTB (in-service-trouble) This alarm generates when the node is in-service and it is experiencing non-service-affecting faults. The default alarm severity is MN. The default action is RPT. • SYSBNA (system busy and not accessible) This alarm generates when the node is in SYSB state and a network (for example, ENET or MS) error has caused it to be isolated. The default alarm severity is CR. The default action is RPT. • MANBNA (manual busy and not accessible) This alarm generates when the node is in MANB state, and a network (for example, ENET or MS) error has caused it to be isolated. The default alarm severity is MJ. The default action is RPT. • COTLOW (low water mark threshold for COT has been crossed) This alarm generates when use of the COT resource exceeds the threshold previously set, which means that the COT resource is in short supply. The default alarm severity is MN. The default action is RPT. • DTMFLOW (low water mark threshold for DTMF has been crossed) This alarm generates when use of DTMF resources exceeds the threshold previously set, meaning that DTMF resources are in short supply. The default alarm severity is MN. The default action is RPT.

MNNODE (continued)

Field descriptions when CLASS=IW (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
			• TONESLOW (low water mark threshold for TONESYN has been crossed). This alarm generates when use of the TONESYN resources exceeds the threshold previously set, meaning that TONESYN resource is in short supply. The default alarm severity is MN. The default action is RPT. • The “configdata all verbose" command displays the list of RMs that were provisioned, as well as other information pertaining to each RM, including the ProtWhomId. This number is found in the line that reads “This RM is currently protecting the services provisioned on RM X". “X" represents the ProtWhomId of that particular RM. Find the RMid whose associated ProtWhomId is the RMid of the RM to have its datafill changed. • MFLOW (low water mark threshold for MF has been crossed). This alarm generates when use of the MF resource exceeds the threshold previously set, meaning that MF resources are in short supply. The default alarm severity is MN. The default action is RPT. • ECANLOW (low water mark threshold for ECAN has been crossed) This alarm generates when use ECAN resources exceeds the threshold previously set, meaning that ECAN resources are in short supply. The default alarm severity is MN. The default action is RPT.
	ATTR	See subfields	ALARM ATTRIBUTES. This field consists of subfields SEVERITY and ACTION.

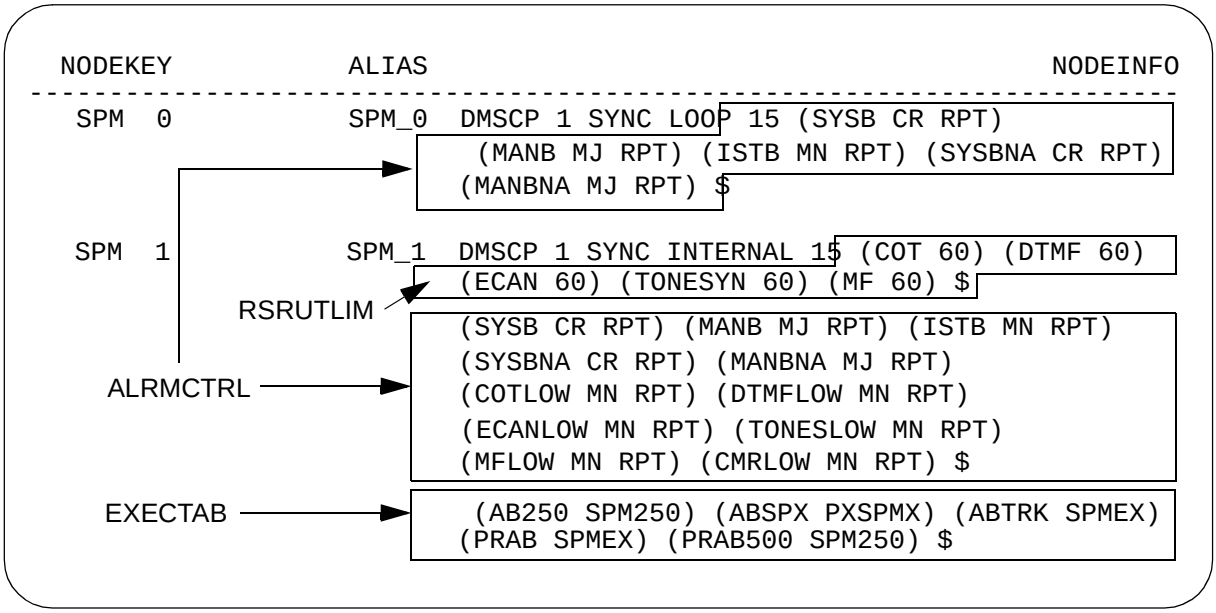
Field descriptions when CLASS=IW (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	SEVERITY	NA, MN, MJ, CR	SEVERITY. The severity of the alarm defines its relative importance. Enter a severity from the following list: • NA (no alarm) • MN (minor alarm) • MJ (major alarm) • CR (critical alarm)
	ACTION	NRPT, RPT	ACTION. This subfield indicates the action to be taken when a fault is detected. Enter an action from the following list: • NRPT (no report generated) • RPT (report generated)
DPT_INFO			DPT_INFO. This field contains a vector of up to two entries.
	CONN	DPT_ONLY, BRDG_ONLY	CONN. Enter a CONN type from the following list: • DPT_ONLY • BRDG_ONLY
OPTIONS			OPTIONS. This field contains a vector with no more one entry.
	OPT_ATTR	SPMECIDX	OPT_ATTR. Enter the option SPMECIDX.
	EC_IDX	0 to 255	EC_IDX. Enter an index to the SPMECAN tuple

Datafill DMSCP example

The following shows sample datafill for table MNNODE for CLASS=DMSCP.

MNNODE (continued)



Datafill SMG4 example

The following shows sample datafill for table MNNODE for CLASS=SMG4.

```
NODEKEY  ALIAS    NODEINFO
-------------------------------------------------------------------------
SPM 4     SPM_4   SMG4 0 SYNC LINE 50 (COT 60) (DTMF 60) (ECAN 60)
                  (TONESYN 60) (MF 60) $(SYSB CR RPT) (MANB MJ RPT)
                  (ISTB MN RPT) (SYSBNA CR RPT) (MANBNA MJ RPT)
                  (COTLOW MN RPT) (DTMFLOW MN RPT) (ECANLOW MN RPT) (TONESLOW
                  MN RPT) (MFLOW MN RPT) (CMRLOW MN RPT) (SMG4CN MN RPT)
                  (PATCHFAIL MJ RPT) (ATMBCN CR RPT) (ST3EHLD MJ RPT)
                  (ST3EHLD24 CR RPT) (SMCHLD MJ RPT) (SMCHLD24 CR RPT)
                  (SPMSRMNTD MN RPT) (LOCUR MJ RPT) (TSRCFAIL CR RPT)
                  $ $ N 0 $ N
```

Datafill IW example

The following shows sample datafill for table MNNODE for CLASS=IW.

```
NODEKEY  ALIAS    NODEINFO
-------------------------------------------------------------------------
SPM 9     SPM_9   IW 1 SYNC LOOP 15 (DTMF 85) (ECAN 85)
                  (TONESYN 85) $ (SYSB CR RPT) (MANB MJ RPT)
                  (ISTB MN RPT) (SYSBNA CR RPT)
                  (MANBNA MJ RPT) (DTMFLOW MN RPT)
                  (ECANLOW MN RPT) (TONESLOW MN RPT)
                  (PATCHFAIL MJ RPT) (ATMBCN CR RPT)
                  (SMCHLD MJ RPT) (SMCHLD24 CR RPT) $ DPT_ONLY
                  $

SPM 14    SPM_14  IW 1 SYNC LOOP 15 (DTMF 60) (ECAN 60)
                  (TONESYN 60) $ (SYSB CR RPT) (MANB MJ RPT)
                  (ISTB MN RPT) (SYSBNA CR RPT)
                  (MANBNA MJ RPT) (DTMFLOW MN RPT)
                  (ECANLOW MN RPT) (TONESLOW MN RPT)
                  (PATCHFAIL MJ RPT) (ATMBCN CR RPT)
                  (SMCHLD MJ RPT) (SMCHLD24 CR RPT) $ BRDG_ONLY
                  (SPMECIDX 6) $
```

Supplementary information

This section gives information on implementing BootP suppression on existing MG4000 nodes.

The BOOTP_SUPPRESS field can be changed for a datafilled MG4000 node if it is in one of the following states with no maintenance in progress (MIP) flag on either of the common equipment modules (CEMs).

- In service (INSV) or in service trouble (ISTB)
- Manual-busy (MANB)
- Offline (OFFL)

In some circumstances, the BOOTP_SUPPRESS field cannot be changed. The error messages and the conditions under which the BOOTP_SUPPRESS field is not accepted are listed below:

Error messages during attempts to change the BOOTP_SUPPRESS field on an MG4000

Error	**Mtc running on unit 0. Try again later.**
Explanation	Unit 0 (CEM 0) of the MG4000 has maintenance in progress (MIP flag raised). BOOTP_SUPPRESSION cannot be changed.
Error	**Mtc running on unit 1. Try again later.**

MNNODE (continued)

Error messages during attempts to change the BOOTP_SUPPRESS field on an MG4000

Explanation	Unit 1 (CEM 1) of the MG4000 has maintenance in progress (MIP flag raised). BOOTP_SUPPRESSION cannot be changed.
Error	**Unit 0 is in SYSB state.**
	Unit should be in either INSV, MANB or OFFL state.
Explanation	Unit 0 (CEM 0) of the MG4000 is in system busy state (SYSB). BOOTP_SUPPRESSION cannot be changed.
Error	**Unit 1 is in SYSB state.**
	Unit should be in either INSV, MANB or OFFL state.
Explanation	Unit 1 (CEM 1) of the MG4000 is in system busy state (SYSB). BOOTP_SUPPRESSION cannot be changed.
Error	**Invalid node.**
Explanation	The table control has failed to retrieve the node details for the MG4000 requested.
Error	**Internal Error.**
Explanation	The table control is unable to read or write to the node details because they are protected data.

Supplementary information for field REMOTE

The field REMOTE can be changed for a datafilled MG4000 node irrespective of the NODE state.

Dump and restore

Over the one night process (ONP), SPMs defined in releases before the MSH12 table change are automatically converted to DMSCP class SPMs. The field by field conversions from existing tuples to new tuples follows.

Conversion of existing tuples to new tuples (Sheet 1 of 2)

Existing tuple field name	New tuple field name	Comment
NODEKEY	NODEKEY	No change
ALIAS	ALIAS	No change
	NODEINFO.CLASS	Set to DMSCP automatically over an ONP.
FLOOR	NODEINFO{DMSCP}.FLOOR	

Conversion of existing tuples to new tuples (Sheet 2 of 2)

Existing tuple field name	New tuple field name	Comment
CLKMODE	NODEINFO{DMSCP}.CLKMODE	
CLKREF	NODEINFO{DMSCP}.CLKREF	
LEDTIMER	NODEINFO{DMSCP}.LEDTIMER	
RSRUTLIM	NODEINFO{DMSCP}.RSRUTLIM	
RSRUTLIM	NODEINFO{DMSCP}.ALRMCTRL	
ALRMCTRL	NODEINFO{DMSCP}.ALRMCTRL	
EXECTAB	NODEINFO{DMSCP}.EXECTAB	

Table history

SN06 (DMS)

The field BOOTP_SUPPRESS was introduced by feature 89009380. This field is defined as a BOOLEAN. If it is set to Y, the XA-Core does not expect the BootP and TFTP messages from the MG4000. If it is set to N, the XA-Core expects the BootP and TFTP messages for its Node maintenance operations.

Added field REMOTE for MG4000 variant SPM in support of activity 89007540.

Added IW class SPMs datafill resource alarm thresholds.

SP15

The following changes were made:

- Added “ABSPX” as a TRMTYPE and “PXSPMX” as a corresponding EXEC value and a note stating the availability of only one instance of the “ABSPX” TRMTYPE value. Added the pair to the Datafill example. This was based on feature 59014406, “PX trunk support on SPM”.
- Added “PRAB500” as a TRMTYPE and a note on when to use “PRAB” and “PRAB500” as TRMTYPE. Added examples of “PRAB” and “PRAB500” datafill to the Datafill example. This was based on feature 59025428, “Support of 100/250 PRI trunks on same SPM for DMS500”.
- Added note that ISUP (SS7) trunks do not require datafill of EXECTAB in MNNODE.

SNH01

Changed datafill examples.

MNNODE (end)

SP14

The following changes were made:

- Added “POTS” as a TRMTYPE value and “SPMPEX” as a corresponding EXEC value. Also added “KEYSET” as a TRMTYPE value and “SPMKEX” as a corresponding EXEC value. Both these additoins were for features 59011720, “NGLA IDT MTCE documentation” and 59012259, “NGLA Static Data.”

- Added restrictions for changing CLKREF datafill when employing SPM OC-3 line timing.

MSH12

Table MNNODE is updated by activity a59007841. Tuple layout in table MNNODE is changed to support multi-service hub (MSH)

SPM12 (CSP12)

Feature A59007841 allows table MNNODE to support the Multi-Service Hub. The feature also added field CLASS to table MNNODE.

SPM01 (CSP09)

Table MNNODE was created.

MNPRIIID

Table name

PRI interface identification (MNPRIIID).

Functional description

Table MNPRIIID is a read/write table that is provisioned through table control. It is used to provision a PRI interface ID against the carrier in table MNHSCARR. This table is used only for SPM nodetype used for all supported trunk types.

This table uses a three-part key (node type, node number and circuit number). To optimize access time, this table internally hashes the key as a single field for look-ups.

Datafill sequence and implications

Table MNHSCARR must be datafilled before table MNPRIIID.

Table size

The table MNPRIIID does not allocate store directly. The OAM&P database allocates store. The minimum size is 0; the maximum size is 5,376 tuples; CC restart type required to increase size is not applicable.

Datafill

The following table lists datafill for table MNPRIIID.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
NODETYPE		SPM	Peripheral type is always SPM.
NODEID		0-63	The SPM number.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
CCTNO		0-181	Physical port number. ***Note:*** The actual range for this field is dependant on the range of the CCTNO field datafilled in table MNHSCARR.
INTID		0-127	PRI interface ID. For PRI, a single D (or Data) channel can control multiple B (or Bearer) channels (DS0s) across multiple DS1 interfaces. The interface ID is used to indicate which DS1 interface the PRI signalling is addressing. The interface ID is part of the channel ID in PRI messaging. The interface ID maps to a unique DS1 span controlled by the D channel. Another part of the interface ID indicates which timeslot or DS0 of the DS1 is in use by the call. For example, the DMS attempts to set up a call on timeslot 5 of DS1 span 3. The information sent to the user is channel 5 INTID 3.

Datafill example

The following example shows sample datafill for table MNPRIIID.

MAP display example for table MNPRIIID

```
Nodetype NODENO CCTNO INTID
-------------------------
SPM       0        0     1
SPM       0        1     1
SPM      63      181   127
```

MNPRIIID (end)

Table history

SP15

Modified the description of the CCTNO field and the INTID field. This was based on SR NY00002.

SP11

Feature AF7786 introduced table MNPRIIID.

MNPRTGRP

Table name

Management Network Protection Group (MNPRTGRP)

Functional description

Table MNPRTGRP is one of six DMS-Spectrum Peripheral Module (SPM) configuration tables. Each tuple in this table identifies a protection group within a switch.

A protection group is a group of objects that form protecting-protected relationships from a functional or service perspective. Members of the protection group can be peripherals, circuit packs, or links. Each group defines the protection relationship between entities. A maximum of 28 protection groups can be defined for each SPM. Typical maintenance data includes group types and related group attributes, such as protection switching mode and direction.

Datafill sequence and implications

External routing must be supported on the DMS switch before SPM nodes can be datafilled. Routing is set to external by using the C7RTR command. For more information on the C7RTR command, refer to the appropriate NTP.

For the IW SPM IP component of the Full Featured Long Distance (FFLD) Voice Trunking over Internet Protocol (VToIP) solution, the correct NTP is the *DMS-100 Family LIU7 External Routing Activation Guide*, 297-8991-030.

Datafill tables in the following order for ISUP trunks:

1. PMLOADS

   Note: Table PMLOADS specifies the location of a particular load file. Datafill PMLOADS only once. There is no need to datafill PMLOADS for each SPM added to the system unless a new load file entry has to be added to table PMLOADS.

2. LOGCLASS

   Note: Feature BV1572 automatically suppresses the generation and reporting of selected trunk logs. To unsuppress a log, datafill the log in table LOGCLASS. Datafill N in field SUPPRESS to ensure log generation and reporting. Refer to the *Data Schema Reference Manual* or the data schema section of the *Translation Guide*, as appropriate, for

MNPRTGRP (continued)

more information about table LOGCLASS. The following 17 logs are affected:

- TRK110 through TRK123
- TRK162
- TRK182
- TRK183

3. MNPRTGRP
4. MNNODE
5. MNSHELF
6. MNCKTPAK
7. MNLINK
8. MNHSCARR
9. CLLI
10. MCLLICDR
11. TRKGRP
12. TRKSGRP
13. TRKMEM
14. ISUPDEST
15. C7TRKMEM

Datafill tables in the following order for PTS trunks:

1. PMLOADS
2. LOGCLASS
3. MNPRTGRP
4. MNNODE
5. MNSHELF
6. MNHSCARR
7. CLLI
8. MCLLICDR
9. TRKGRP

10. TRKSGRP
11. TRKMEM

Table size

0 to 1,792 tuples

Field descriptions

The following table describes field names, subfield names, and valid data ranges for table MNPRTGRP.

(Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY			GROUP KEY. The subfields are NODETYPE, NODEID, GRPTYPE, and GRPID.
	NODETYPE	SPM	NODE TYPE. Enter SPM.
	NODEID	0-63	NODE IDENTIFIER. Enter the SPM node identifier. The default is 0.

MNPRTGRP (continued)

(Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	GRPTYPE	OC3_GRP, DSP_GRP, VSP_GRP, STS3L_GRP, ATM_GRP, DLC_GRP, IEM_GRP, STM_GRP, CARR_GRP	GROUP TYPE. Enter the protection group type as follows: • OC3_GRP (protection group for OC-3 circuit pack) • DSP_GRP (protection group for DSP circuit pack) • VSP_GRP (protection group for VSP circuit pack) • STS3L_GRP (protection group for STS-3 line carrier) • ATM_GRP (protection group for ATM circuit pack) ***Note:*** ATM is not applicable to all markets. • DLC_GRP (protection group for Data Link Controller circuit pack) • IEM_GRP (protection group for IEM RM on the MG4000) ***Note:*** Provisioning and maintenance of the LSA devices is done through the element manager. Do not manually provision this value. • STM_GRP (protection group for the STM-1 circuit pack) • CARR_GRP (protection group for protection switching at a carrier level)

(Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	GRPID	1-28	GROUP IDENTIFIER. Enter the protection group identifier. The default value is 1.
GRPINFO	SELECTOR	STM_GRP, ATM_GRP, VSP_GRP, OC3_GRP, IEM_GRP, DLC_GRP, DSP_GRP, CARR_GRP, STS3L_GRP	GROUP INFORMATION. This protection group information area is refined for each group type: STM_GRP, ATM_GRP, VSP_GRP, OC3_GRP, IEM_GRP, DLC_GRP, DSP_GRP, CARR_GRP, or STS3L_GRP. Refer to the following refinements.

SELECTOR = OC3_GRP, DSP_GRP, VSP_GRP, ATM_GRP, STM_GRP, or IEM_GRP

If the value in field SELECTOR is OC3_GRP, DSP_GRP, VSP_GRP, ATM_GRP, STM_GRP, or IEM_GRP datafill subfields MODE and ALRMCTRL as described in the following table.

(Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	MODE	See refinement	PROTECTION SWITCHING MODE. This field consists of subfield SWCHMODE.
	SWCHMODE	NRVTV	NON-REVERTIVE PROTECTION SWITCHING MODE. Enter NRVTV
	ALRMCTRL	See refinements	ALARM CONTROL. Each entry controls a particular alarm for the protection group. To accept the system default values, enter $. The subfields are ALARM and ATTR.
	ALARM	NOSPARE	ALARM NAME. The valid alarm is NOSPARE (no sparing cabability). The NOSPARE alarm generates when the protection group has lost its sparing capability. This alarm occurs when no spare circuit pack is provisioned for the protection group or inactive circuit packs are out of service.

MNPRTGRP (continued)

(Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ATTR	See subfields	ALARM ATTRIBUTES. The subfields are SEVERITY and ACTION.
	SEVERITY	NA, MN, MJ, CR	SEVERITY. This field indicates the severity of the alarm. Valid severities are • NA (no alarm severity) • MN (minor alarm) • MJ (major alarm, the default value) • CR (critical alarm)
	ACTION	RPT, NRPT	ACTION. This field indicates the action to take when an alarm is detected. Valid entries are • RPT (report the alarm, the default value) • NRPT (do not report the alarm)

SELECTOR = STS3L_GRP

If the value in field SELECTOR is STS3L_GRP, datafill subfields APSCFG, MODE and SWCHDIR as described in the following table.

Field	Subfield or refinement	Entry	Explanation and action
	APSCFG	1PLUS1	AUTOMATIC PROTECTION SWITCHING CONFIGURATION. Enter 1PLUS1.
	MODE	See refinement	PROTECTION SWITCHING MODE. This field consists of subfield SWCHMODE.
	SWCHMODE	NRVTV	NON-REVERTIVE PROTECTION SWITCHING MODE. Enter NRVTV
	SWCHDIR	UNI_DIR	PROTECTION SWITCHING DIRECTION. Enter UNI_DIR (uni-directional) switching.

SELECTOR = CARR_GRP

If the value in field SELECTOR is CARR_GRP, datafill subfields APSCFG, MODE, SWCH_DIR, SIMPLEX_ALM, and SIMPLEX_LOG as described in the following table.

Field	Subfield or refinement	Entry	Explanation and action
	APSCFG	1PLUS1	AUTOMATIC PROTECTION SWITCHING CONFIGURATION. Enter 1PLUS1.
	MODE	See refinement	PROTECTION SWITCHING MODE. This field consists of subfield SWCHMODE.
	SWCHMODE	NRVTV	NON-REVERTIVE PROTECTION SWITCHING MODE. Enter NRVTV
	SWCH_DIR	UNI_DIR	PROTECTION SWITCHING DIRECTION. Enter UNI_DIR (uni-directional) switching.
	SIMPLEX_ALM	N,Y	SIMPLEX ALARM. This boolean value indicates whether the protection group generates simplex alarms. A simplex condition exists when no protection switching is possible. ***Note:*** This facility is not supported for STM-1.
	SIMPLEX_LOG	N,Y	SIMPLEX LOG. This boolean value indicates whether this proection group generates simplex logs. A simplex condition exists when no protection switching is possible. ***Note:*** This facility is not supported for STM-1.

Datafill example

The following shows sample datafill for table MNPRTGRP.

MNPRTGRP (end)

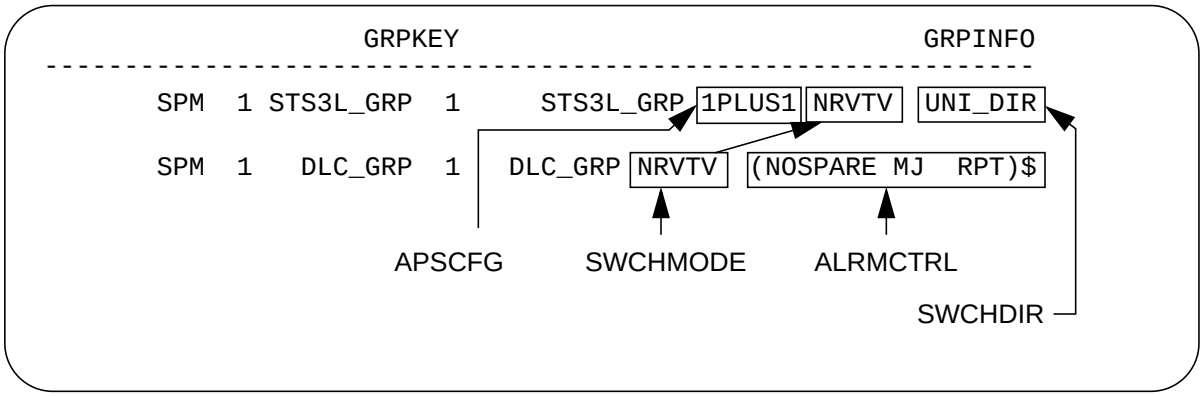


Table history

SP15

Added note indicating ATM is not applicable to all markets.

SNH01

Changed datafill example. Added reference to LIU7 External Routing Activation Guide.

MMP12

Feature 59008275 adds CARR_GRP for STM1M carriers to range of valid protection group types.

SP12 (CSP12)

Feature AF7583 adds DLC_GRP to the range of valid PROTGRPS.

SR 50134464 adds IEM_GRP, STM_GRP, and CARR_GRP to the range of valid PROTGRPS.

SP11 (CSP11)

Feature AF7378 adds ATM_GRP to the range of valid PROTGRPS.

SPM01 (CSP09)

Table MNPRTGRP was created.

MNSHELF

Table name

Management Network Shelf (MNSHELF)

Functional description

This table is one of six DMS-Spectrum Peripheral Module (SPM) configuration tables. An SPM consists of two shelves. Each tuple in this table identifies a shelf on a particular node. The data maintained in this table includes the shelf identifier and physical shelf location.

Datafill sequence and implications

Datafill tables in the following order:

1. table PMLOADS

   Note: Table PMLOADS specifies the location of a particular load file. Datafill PMLOADS only once. There is no need to datafill PMLOADS for each SPM added to the system unless a new load file entry has to be added to table PMLOADS.

2. table MNPRTGRP
3. table MNNODE
4. table MNSHELF
5. table MNCKTPAK
6. table MNLINK
7. table MNHSCARR

If the SPM referenced by field NODETYPE and NODEID of table MNSHELF tuple has not been added to table MNNODE, the following message displays:

```
Failed to find the specified SPM
```

Table size

0 to 128 tuples

MNSHELF (continued)

Field descriptions

The following table describes field names, subfield names, and valid data ranges for table MNSHELF.

(Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
SHLFKEY		See subfields	SHELF KEY. Subfields are NODETYPE, NODEID, and SHELFID.
	NODETYPE	SPM	NODE TYPE. Enter SPM.
	NODEID	0 to 63	NODE IDENTIFIER. Enter the SPM node identifier. The default is 0. ***Note:*** If the SPM identified in NODETYPE and NODEID has not been added to table MNNODE, the message “Failed to find the specified SPM" displays.
	SHELFID	0 or 1	SHELF IDENTIFIER. Enter the shelf identifier. The lower shelf is shelf 0; the upper shelf is shelf 1. The default is 0.
FRTYPE		SPME, SMGE	FRAME TYPE. Enter SPME or SMGE. • SMGE (Successive Media Gateway Equipment) frametype required for SMG4KD (Succession Media Gateway 4000 Distributed Access) class SPM indicated as the intended functionality of the SPM's datafill. • SPME (SPM equipment) frametype required for DMSCP (DMS call processing) and IW (interworking) class. SPM indicated as the intended functionality of the SPM's datafill.
FRNO		0-511	FRAME NUMBER. Enter the frame number.
ROW		A-H, J-N, P-Z, AA-HH, JJ-NN, PP-ZZ	ROW. Enter the row where the frame is located.
FRPOS		0 to 99	FRAME POSITION. Enter the frame position.

(Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
SHPOS		0 to 77	SHELF POSITION. Enter the shelf position in inches. The recommended positions are 6, 21, 43, and 59. ***Note:*** In each SPM frame, there are a maximum of two SPMs—upper and lower SPM. Each SPM has a maximum of two shelves—bottom and upper shelf. The frame mounting positions of each shelf are “6" for lower SPM bottom shelf; “21" for lower SPM upper shelf; “43" for upper SPM lower shelf, and “59" for upper SPM upper shelf. The shelf position is specified in terms of the count of shelf mounting holes from the bottom of the frame.
FRPEC		NTLX91AA, NTLX50AA, NTLX91BA	FRAME PEC. Enter the frame product engineering code (PEC). • NTLX91AA Frame PEC required when installing a new DMSCP class SPM. • NTLX50AA is no longer used for new SPM deployment. It is still valid for SPMs deployed before this software release. • NTLX91BA Frame PEC is required when you install a new IW and SMG4KDA class SPM.
SHPEC		NTLX51AA, NTLX53AA, NTLX51BA	SHELF PEC. Enter the shelf PEC. Valid values are • NTLX51AA (two high-speed slots, double-height shelf, the default). This is the shelf PEC required for DMSCP- class SPMs. • NTLX53AA (two high-speed slots, single-height shelf). This is no longer used. • NTLX51BA (four high-speed slots, double-height shelf. This is the shelf PEC required for IW- and SMG4KDA-class SPMs.

MNSHELF (end)

Datafill example

The following shows sample datafill for table MNSHELF.

```
 SHLFKEY   FRTYPE    FRNO       ROW  FRPOS      SHPOS       FRPEC      SHPEC
-----------------------------------------------------------------------------
 SPM 0 0    SPME       3         A      13          6    NTLX91AA   NTLX51AA
 SPM 0 1    SPME       3         A      13         21    NTLX91AA   NTLX51AA
 SPM 1 0    SPME       2         B      12          6    NTLX91BA   NTLX51BA
 SPM 1 1    SPME       2         B      12         21    NTLX91BA   NTLX51BA
 SPM 2 0    SMGE       4         C      14          6    NTLX91BA   NTLX51BA
 SPM 2 1    SMGE       4         C      14         21    NTLX91BA   NTLX51BA
 SPM 3 0    SPME       5         D      15          6    NTLX91AA   NTLX51BA
 SPM 3 1    SPME       5         D      15         21    NTLX91AA   NTLX51BA
```

Table history

MSH12

Table MNSHELF is updated to include three additional fields.

SPM12 (CSP12)

Feature A59007841

- changed fields FRTYPE, FRPEC, and SHPEC to accommodate the multi-service hub designated by the SPM class when you install a new SPM
- added PEC values NTLX91AA and NTLX91BA to field FRPEC
- added PEC value NTLX51BA to field SHPEC
- added frame type value SMGE to field FRTYPE

SPM01 (CSP09)

Table MNSHELF was created.

MODEMPRO

Table name

Modem Protocol Name Definition Table

Functional description

Table MODEMPRO defines the various names associated with the modem protocols that are used in the table BCDEF. The names defined can have a maximum length of 32 characters.

Datafill sequence and implications

Table BCDEF must be datafilled after table MODEMPRO.

Note: Do not enter default tuples at the time of a load build. However, this is a symbolic range command (SRCOM) table; that is, the following string must be entered in an EXT file:

```
>|SRCOM 'MODEMPRO' ON 'MODEM_PROTOCOL_NAME'
```

Table size

0 to 64 tuples

Datafill

The following table lists datafill for table MODEMPRO.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
VALUE		see subfield	*Value* This field consists of subfield UNINT.
	UNINT	0 to 32 767	*Integer value* Enter the integer value associated with the string.
SYMBOL		alphanumeric (up to 32 characters)	*Symbol* Enter the name of the modem protocol.

Datafill example

The following example shows sample datafill for table MODEMPRO.

MODEMPRO (end)

MAP display example for table MODEMPRO

```
VALUE                                SYMBOL
_____________________________________________________________

2              MODEMPRO
```

MODMAP

Table name

ITOPS Rating Charge Calculator Day Charge Modification Map Table

Functional description

Table MODMAP defines the charge modification set number for each schedule and holiday treatment combination. The charge modification set numbers are used in table MODSET.

Refer to table ATRIMOD for related information.

Datafill sequence and implications

Table SCHNAME must be datafilled before table MODMAP

Table MODSET must be datafilled after table MODMAP.

Table size

0 to 64 tuples

Datafill

The following table lists datafill for table MODMAP.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
SCHNAME		alphanumeric (1 to 16 characters)	*Shedule name* Contains the schedule name datafilled in table SCHNAME.
SAT		0 to 63	*Saturday charge modification set* Contains the Saturday charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.
SUN		0 to 63	*Sunday charge mdification set* Contains the Sunday charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.

MODMAP (continued)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
MON		0 to 63	*Monday charge modification set* Contains the Monday charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.
TUE		0 to 63	*Tuesday charge modificaiton set* Contains the Tuesday charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.
WED		0 to 63	*Wednesday charge modification set* Contains the Wednesday charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.
THU		0 to 63	*Thursday charge modification set* Contains the Thursday charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.
FRI		0 to 63	*Friday charge modificaiton set* Contains the Friday charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.
SPL1		0 to 63	*Special 1 charge modification set* Contains the special 1 charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.
SPL2		0 to 63	*Special 2 charge modification set* Contains the special 2 charge modification set number for this schedule that is datafilled in field MODSET of table MODSET.

Datafill example

The following example shows sample datafill for table MODMAP.

MAP display example for table MODMAP

```
SCHNAME   SAT SUN MON TUE WED THU FRI SPL1 SPL2
_____________________________________________________
 SCHED1     1   1   1   2   1   2   1    3    5
 SCHED2     1   2   2   1   1   1   1    3    5
```

MODSET

Table name

ITOPS Rating Charge Calculator Time Charge Modification Set Table

Functional description

Table MODSET, indexed by the charge modification set number obtained in table MODMAP, lists for each charge modification number the charge modification factor, if any, that applies for each specified time period of the day.

Charge modification factors M1 to M8 are used in the time-day discount and surcharge table RATEMOD to select the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and the rate modification value field, VALUE1 to VALUE8, respectively.

For related information, refer to table ATRIMOD.

Datafill sequence and implications

Table MODMAP must be datafilled before table MODSET.

Table size

0 to 64 tuples

Datafill

The following table lists datafill for table MODSET.

Field descriptions (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MODSET		0 to 63	*Charge modificaiton set number key* Enter the charge modification set number
MOD1		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge modification set factor 1* Enter NM when no charge modification is required for the charge modification time period 1 (defined by field TIME1) or when the charge modification time period 1 is unassigned (TIME1 = 0000). Otherwise, enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 1 (defined by field TIME1).
TIME1		0000 to 2400	*Charge modificaiton set time* Enter the time at the end of the charge modification period 1. Charge modification time period 1 begins after midnight. Enter 0000 when the charge modification time period 1 is unassigned. Enter 2400 when the charge modification time period 1 is the last assigned charge modification time period.

MODSET (continued)

Field descriptions (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MOD2		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge Modificaiton Set Factor 2* Enter NM when no charge modification is required for the charge modification time period 2 (defined by field TIME2) or when the charge modification time period period 2 is unassigned (TIME2 = 0000). Otherwise enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 2 (defined by field TIME2).
TIME2		0000 to 2400	*Charge modification set time 2* Enter the time at the end of the charge modification period 2. Charge modification time period 2 begins after TIME1. Enter 0000 when the charge modification time period 2 is unassigned. Enter 2400 when the charge modification time period 2 is the last assigned charge modification time period.
MOD3		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge modification set factor 3* Enter NM when no charge modification is required for the charge modification time period 3 (defined by field TIME3) or when the charge modification time period period 3 is unassigned (TIME3 = 0000). Otherwise, enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 3 (defined by field TIME3).

Field descriptions (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
TIME3		0000 to 2400	*Charge modification set time 3* Enter the time at the end of the charge modification period 3. Charge modification time period 3 begins after TIME2. Enter 0000 when the charge modification time period 3 is unassigned. Enter 2400 when the charge modification time period 3 is the last assigned charge modification time period.
MOD4		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge modification set factor 4* Enter NM when no charge modification is required for the charge modification time period 4 (defined by field TIME4) or when the charge modification time period period 4 is unassigned (TIME4 = 0000). Otherwise enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 4 (defined by field TIME4).
TIME4		0000 to 2400	*Charge modification set time 4* Enter the time at the end of the charge modification period 4. Charge modification time period 4 begins after TIME3. Enter 0000 when the charge modification time period 4 is unassigned. Enter 2400 when the charge modification time period 4 is the last assigned charge modification time period.

MODSET (continued)

Field descriptions (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MOD5		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge modification factor 5* Enter NM when no charge modification is required for the charge modification time period 5 (defined by field TIME5) or when the charge modification time period period 5 is unassigned (TIME5 = 0000). Otherwise enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 5 (defined by field TIME5).
TIME5		0000 to 2400	*Charge modification set time 5* Enter the time at the end of the charge modification period 5. Charge modification time period 5 begins after TIME4. Enter 0000 when the charge modification time period 5 is unassigned. Enter 2400 when the charge modification time period 5 is the last assigned charge modification time period.
MOD6		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge modification factor 6* Enter NM when no charge modification is required for the charge modification time period 6 (defined by field TIME6) or when the charge modification time period period 6 is unassigned (TIME6 = 0000). Otherwise enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 6 (defined by field TIME6).

Field descriptions (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
TIME6		0000 to 2400	*Charge modifiaciton set time 6* Enter the time at the end of the charge modification period 6. Charge modification time period 6 begins after TIME5. Enter 0000 when the charge modification time period 6 is unassigned. Enter 2400 when the charge modification time period 6 is the last assigned charge modification time period.
MOD7		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge modification factor 7* Enter NM when no charge modification is required for the charge modification time period 7 (defined by field TIME7) or when the charge modification time period period 7 is unassigned (TIME7 = 0000). Otherwise enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8 respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 7 (defined by field TIME7). ,
TIME7		0000 to 2400	*Charge modificaton set time 7* Enter the time at the end of the charge modification period 7. Charge modification time period 7 begins after TIME6. Enter 0000 when the charge modification time period 7 is unassigned. Enter 2400 when the charge modification time period 7 is the last assigned charge modification time period.

MODSET (end)

Field descriptions (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MOD8		NM, M1, M2, M3, M4, M5, M6, M7, M8	*Charge modification factor 8* Enter NM when no charge modification is required for the charge modification time period 8 (defined by field TIME8) or when the charge modification time period period 8 is unassigned (TIME8 = 0000). Otherwise enter M1 to M8 to select in table RATEMOD the applicable rate modification sense field, SENSE1 to SENSE8, respectively, and rate modification value field, VALUE1 to VALUE8, respectively, to be used for the charge modification time period 8 (defined by field TIME8).
TIME8		0000 to 2400	*Charge modification set time 8* Enter the time at the end of the charge modification period 8. Charge modification time period 8 begins after TIME7. Enter 0000 when the charge modification time period 8 is unassigned. Enter 2400 when the charge modification time period 8 is the last assigned charge modification time period.

Datafill example

The following example shows sample datafill for table MODSET.

MAP display example for table MODSET

```
MODSET MOD1 TIME1 MOD1 TIME2 MOD3 TIME3 MOD4 TIME4 MOD5 TIME5
   MOD6 TIME6 MOD7 TIME7 MOD8 TIME8
_____________________________________________________________
1      M4   2400  NM   0000  NM   0000  NM   0000  NM   0000
   NM   0000  NM   0000  NM   0000
```

MPBINV

Table name

Multiparty Bridge Inventory Table

Functional description

Table MPBINV contains all multiparty bridge (MPB) groups configured in the DMS switch. Table MPBINV also contains the line equipment numbers (LEN) of the members of each bridge group. Table MPBINV fields contain the following information:

- multiparty bridge group (a one- to four-digit number)
- member line equipment numbers (one to four LENs for the members of the MPB group)

The following error messages can be output while datafilling table MPBINV:

```
INVALID LINE EQUIPMENT NUMBER.
```

Explanation: Field LENTAB of table MPBINV contains a LEN that does not exist.

```
TUPLE HAS DUPLICATE MEMBERS.
```

Explanation: Field LENTAB of table MPBINV contains two identical entries. All LENs must be distinct.

```
UNABLE TO EXPAND TABLE.
```

Explanation: Insufficient protected store exists for expanding the table.

```
TUPLE MUST HAVE AT LEAST ONE MEMBER.
```

Explanation: Field LENTAB of table MPBINV must have at least one member.

```
ONLY SINGLE PARTY LINES ALLOWED.
```

Explanation: All entries in field LENTAB must have a line class code of either 1FR or 1MR.

Table MPBINV is write protected and cannot be altered directly. When service orders are executed for MPB lines, table MPBINV is updated automatically.

MPBINV (continued)

Datafill sequence and implications

Table LENLINES must be datafilled before table MPBINV.

Table size

Memory is allocated dynamically when entries are added to table MPBINV in blocks of 16 entries. Each entry requires 9 words. Table MPBINV holds up to 3200 tuples. Additionally, a parallel structure in permanent store exists with 1-word entries. One entry is required for each MPB group.

Datafill

The following table lists datafill for table MPBINV.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
GROUP		0 to 3199	*Multiparty bridge group* The DMS switch automatically assigns this number to a new MPB group. If possible, the lowest available number is assigned.
LENTAB		see subfield	*Line equipment number table* This field defines the physical location of the equipment that is connected to a specific telephone line. Up to four LENs can be assigned to an MPB group. Prompting occurs for each member, and a dollar sign can be entered to halt prompting. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section “Common entry field LEN" for a complete description of field LEN and associated subfields. This field consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.

Datafill example

The following example shows sample datafill for table MPBINV.

MAP display example for table MPBINV

```
GROUP              LENTAB
_____________________________________________________________

31                 RCU0   00   0   00   00
```

MPC

Table name

Multiprotocol Controller Table

Functional description

Table MPC contains the values required to implement the multiprotocol controller (MPC) in the DMS switch. Table MPC identifies the MPC card hardware to the DMS central control (CC). Table MPC requires one entry or tuple for each MPC.

Each entry contains the following:

- an index number for the MPC
- the number of the input/output controller (IOC) shelf where the card resides
- the card circuit number
- the product engineering code (PEC)
- the identification (ID) for the preferred download file

The device that contains the download file can appear before tuple entry in table MPC. The device can appear in a list before the first manual download. In these occurrences, a subsequent download or return to service (RTS) normally succeeds and does not list the download file.

Datafill sequence and meaning

Enter data in table IOC before table MPC.

Enter data in table MPC before table MPCLINK. Table MPCLINK provides protocol support and link information for cards configured in table MPC.

Table size

0 to 256 tuples

Datafill

The datafill for table MPC appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
MPCNO		see subfield	*Multiprotocol controller number* This field contains subfield K.
	K	0 to 255	*Multiprotocol controller number key* Enter the number of one multiprotocol controller (MPC). Number the MPC cards as desired. This subfield does not have a default value.
MPCIOC		0 to 19	*Multiprotocol controller input/output controller* Enter the number of the input/output (IOC) shelf on which the MPC card sits. This subfield does not have a default value.
IOCCCT		0, 4, 8, 12, 16, 20, 24, 28, 32	*Input/output circuit number* Enter the slot position on the IOC shelf multiplied by 4, from 0 (zero) to 32. Entries out of this range are not correct. This subfield does not have a default value.

MPC (continued)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
EQ		1X89AA, 1X89BA, 1X89BB FX30AA FX30BA	*Equipment code* Enter the Northern Telecom (NT) product engineering code (PEC): 1X89AA for the MPC card or 1X89BA/BB for the enhanced MPC (EMPC) card. Enter FX30AA if the specified IOC is an IOM. Entries out of this range are not correct. This subfield does not have a default value.
DLDFILE		alphanumeric (8 characters)	*Download file* Enter a file name that begins with MPC. Enter an X for X25ORIG, 0 (zero) for X2580), 4 for X.25, or A for asynchronous protocol software. Enter four alphanumeric characters that designate the Telecom software release cycle and the load designation. An example of a file name is MPCX33AB. Software download files are interchangeable between MPC and EMPC. For IOM MPC, use default name IOM$LOAD. This subfield does not have a default value. ***Note:*** For automatic location identification (ALI), the system enters data in field DLDFILE. The system enters data to specify the asynchronous protocol software download files for the current MPC load. The fourth character of the download filename is the letter A.

Datafill example

Sample datafill for table MPC appears in the following example.

MAP example for table MPC

```
MPCNO MPCIOC IOCCCT     EQ  DLDFILE
_____________________________________________________

    0      0     12 1X89AA MPCX33AB
    1      1     12 1X89AA MPCX33AB
```

Table history

CSP06

The IOM PEC FX30AA/AB was added to EQ field and IOM default information to DLDFILE field in CSP06.

CSP02

The information required to change download file name in field DLDFILE in section “Supplementary information" was added in CSP02.

BCS36

Subfield K was added in BCS36.

BCS35

The range of field MPCIOC was increased to 19 in BCS35.

Additional information

Information on how to enter data in table MPC from a maintenance and administration position (MAP) terminal appears in this section.

When you enter data in table MPC from a MAP position complete the following steps. Complete these steps to identify the MPC (NT1X89AA) and EMPC (NT1X89BA/BB) cards to the CC:

1. List the device directories of the download files to place the files in the user directory. The CC recognizes the download files in the user directory. If the device directories for the download files do not appear, a warning

MPC (end)

message appears. The warning message appears when the system writes the tuple to table MPC.

2. Add the following information in table MPC:
   - the MPC numbers
   - the IOC shelves and circuit positions where the MPC and EMPC cards are configured
   - the NT PECs for the cards
   - the download file names for the MPC and EMPC cards

The following limits apply when you enter data in table MPC from a MAP terminal:

- You can delete tuples in table MPC under the following conditions:
  - — the MPCs that correspond are offline
  - — you delete the associated tuples in table MPCLINK
- You can change field DLDFILE in a tuple of table MPC. To change other fields, delete the tuple and enter the tuple again. The file name in field DLDFILE can change to a file name of the same load. For example, to change file name MPC434R1, download MPC402BX. These files are 1984 X25 protocol versions. You can not download a 1980 X25 protocol version if table MPC contains a 1984 X25 protocol. An example of a 1980 X25 protocol version is MPC003AB. If the system downloads a wrong protocol version, the system generates the following error message:

  ```
  NEW DOWNLOAD FILE INDICATES CHANGE IN BOARD PROTOCOL.   MPC
  MUST BE DELETED AND RE-ADDED TO CHANGE PROTOCOL.  PROCESSING
  ERROR.
  ```

- List the directory of the storage device, that contains the download file, where the CC can recognize the file. List this directory before you enter a tuple. The CC must recognize the file at the time of entry. List the directory to place the file in the user directory. For example, you can perform the command interpreter (CI) command LISTVOL on a disk like D000XPM, to list the download file. If you do not list the download file, entry of data succeeds with a warning that the download can fail. In other occurrences, you can add a tuple to table PMLOADS. Add this tuple to identify the image name and device name for the download file.

MPCFASTA

Table name

Multiprotocol Controller Fast Applications

Functional description

Table MPCFASTA identifies applications that use the multiprotocol controller (MPC) fast utility. The fast utility is a fast input and output interface through the MPC. Each application has a tuple in table MPCFASTA.

The following information appears in table MPCFASTA:

- the application name
- the frequency at which the system sends audit messages
- the units that apply to the frequency number
- the type of link audit failure recovery procedure
- a maximum of 16 MPC numbers, link numbers, and channel numbers (MLCLIST) for the application

The following considerations apply to the applications:

- If the application does not support an audit, set field AUDITFRQ to 0. Entries in field AUDITFRQ in units of 10 s or less are acceptable. For these unit entries, the system generates a warning about the real time impact frequent audits.
- Two MPCs for each application are recommended for reliability. The first release of this utility supports links 2 and 3. If you are using the Off-Board Selective Routing (OFBSR) interface feature, two MLCs (each consisting of one MPC, one link on the MPC, and one channel of the link) must be datafilled.

See table MPC for related information.

Datafill sequence and meaning

Enter data in the tables MPC and MPCLINK before you enter data in table MPCFASTA.

Table size

0-16 tuples

MPCFASTA (continued)

Datafill

Datafill for table MPCFASTA appears in the following table.

Field descriptions (Sheet 1 of 5)

Field	Subfield	Entry	Explanation and action
INDEX		see subfield	Application index. This field contains subfield K.
	K	alphanumeric (1 to 8 characters)	Application name. Enter an application name. This field is the key for table MPCFASTA. This field represents the application identifier (ID) available for multiprotocol controller (MPC) circuits. The MPC is an open interface. The user can enter a new or current application to allow the application to function with the MPC. The MPC is a generic transport device. The documentation of the application provides information on specified applications. If the entry of data in table SERVICES occurs, services DASERV and INTCERV require applications TOPSVR1 and TOPSVR2. The TOPSVR1 and TOPSVR2 cannot run the same service, DASERV or INTCSERV. Enter M or L in tables MPC and MPCLINK. Make one entry in table MPCFASTA for each type of automatic location identification (ALI) system that connects to the tandem. The entry of all the links that serve CCI databases must occur.

MPCFASTA (continued)

Field descriptions (Sheet 2 of 5)

Field	Subfield	Entry	Explanation and action
			Enter one of the following APPLIDs if the application is Remote Call Event Record: • 911RCER1 • 911RCER2 • 911RCER3 • 911RCER4 • 911RCER5 • 911RCER6 Enter OPN911AS if the application is E911 for multiprotocol controller card links with direct access to an ALI controller. This protocol generates a pseudo ANI (pANI) location for wireless calls. Enter ENH911AS to support data transmission from the MPC to an external ALI database for E911 calls terminating to a line or ACD public safety answering point (PSAP). Unlike OPN911AS, this protocol generates both the pANI and the mobile directory number (MDN) number of a wireless caller. Enter WLS911 for E911wireless calls terminating to a line appearance on a digital trunk (LDT) PSAP. Enter ATT911AS for the links that serve the AT&T controllers that connect to the switch. Enter E911SR01 to allow a DMS-100 serving as an E911 tandem to access its primary external selective routing database server (OFBSR). A secondary OFBSR also can be chosen; enter E911SR02 to choose the secondary OFBSR server. The Traffic Operator Position System (TOPS) personal audio response system (PARS) application uses table MPCFASTA in stand-alone and host offices.

MPCFASTA (continued)

Field descriptions (Sheet 3 of 5)

Field	Subfield	Entry	Explanation and action
AUDITYPE		ACTIVE or IDLE	Audit type. Enter the type of audit that runs on the MPC link channel (MLC). Enter ACTIVE for a continuous audit. Enter IDLE to run audits when traffic is not present. The default value is IDLE.
AUDITFRQ		0-255	Audit frequency. Enter the time between audits of idle permanent virtual circuits (PVCs). Enter the time in minutes or seconds. See field UNITS. If the application does not support the audit, enter 0 if the entry of one of the following appears in field INDEX: • 911RCER1 • 911RCER2 • 911RCER3 • 911RCER4 • 911RCER5 • 911RCER6 • E911SR01 • E911SR02 ***Note:*** When field AUDITFRQ is 0, audits do not run on the MLCs.
UNITS		MINUTES or SECONDS	Audit frequency units. Enter the unit of measure that applies to the entry in field AUDITFRQ.

Field descriptions (Sheet 4 of 5)

Field	Subfield	Entry	Explanation and action
RECOVERY		ENHANCED or REGULAR	Recovery. Enter ENHANCED to indicate that the application on link-audit failure requires a reset or initialization at the protocol level when link-audit failure occurs. Enter REGULAR to continue the current process of error recovery. The system does not support audits if field INDEX contains one of the following: • 911RCER1 • 911RCER2 • 911RCER3 • 911RCER4 • 911RCER5 • 911RCER6 • E911SR01 • E911SR02 If field INDEX contains these entries, enter REGULAR. • ATT911AS • OPN911AS • ENH911AS • WLS911
MLCLIST		see subfields	Multiprotocol controller link channel list. This field contains subfields M, L, and C. You can enter a maximum of 16 three-number sets that represent MLC. Separate each subfield with a single space. If you require less than 16 MLCs, end the list with a dollar sign ($). An MLC contains one MPC, one MPC link, and one link channel. For example, 1 2 3 indicates MPC 1, link 2 on MPC 1, and channel 3 on link 2.
	M	0-255	MPC. Enter the number of the MPC.

MPCFASTA (continued)

Field descriptions (Sheet 5 of 5)

Field	Subfield	Entry	Explanation and action
	L	2 or 3	Link. Enter the number of the MPC link.
	C	1-255	Channel. Enter the number the MPC link channel.

Datafill example

Sample datafill for table MPCFASTA appears in the following examples.

MAP example for table MPCFASTA

```
INDEX    AUDITYPE    AUDITFRQ    UNITS     RECOVERY
                                                    MLCLIST
_____________________________________________________________

TOPSVR1    IDLE       1          MINUTES   REGULAR
                                                  (1 2 1)$
```

MAP example for table MPCFASTA

```
 INDEX    AUDITYPE    AUDITFRQ    UNITS     RECOVERY
                                                     MLCLIST
 _____________________________________________________________

E911SR01    IDLE        0        MINUTES    REGULAR
                                                   (4 2 1)(4 3 1)
E911SR02    IDLE        0        MINUTES    REGULAR
                                                   (6 2 1)(6 3 1)
```

Table history

NA015

The APPLIDs E911SR01 and E911SR02 were added to the INDEX field. The E911SR01 ID indicates the primary Off-Board Selective Routing Interface (OFBSR). The E911SR02 ID indicates the secondary OFBSR Interface.

NA012

The E911 Wireless ANI Interface feature added the protocols ENH911AS and WLS911 to field INDEX.

NA006

The APPLIDs 911RCER3, 911RCER4, 911RCER5, and 911RCER6 were added to field INDEX in NA006.

Notes about table SERVICES in field K are changed to reflect changes in table SERVICES by feature AN1844 in functionality Multiple DA System I, OSDA00001.

BCS36

Field AUDITYPE and subfields K, M, L, and C were added in BCS36.

Additional information

Dump and restore information for field AUDITYPE appears in this section.

Dump and restore

For BCS36 and later versions, duplication of the tuples occurs on the restore side.

For BCS35 and earlier versions, all fields except field AUDITYPE are copied to the entries that correspond in the table. Field AUDITYPE defaults to IDLE.

Upgrades from BCS34 or BCS35 to BCS36 and later versions require a manual change in table MPCFASTA. This manual change sets field AUDITYPE to ACTIVE to allow the following applications to continue to run active audits:

- MPCFDS
- MPCFERS
- TOPSIM
- TOPSVR1
- TOPSVR2
- TOPSVSN
- VSNSIM

MPCLINK

Table name

Multiprotocol Controller Link Table

Functional description

Table MPCLINK specifies link and protocol information for cards entered in table MPC. The user can enter correct multiprotocol controller (MPC) link definitions and protocol groups. The user can enter a group of protocol-specified fields in table MPCLINK.

Table MPCLINK supports the application of the 1980 CCITT X.25 layered protocol and asynchronous communications in the MPC. Table MPCLINK supports the application of the previous X25ORIG (BX25) protocol. Protocol support makes sure the establishment and maintenance of links and conversations occurs.

The fields in table MPCLINK identify the MPC data links to the central control (CC). The fields identify the MPC data links like table MPC identifies the MPC hardware to the CC. These fields do not have default values. The user must enter these fields.

The protocol in use determines protocol parameter descriptions. Most parameter fields do not require datafill. Parameter fields require datafill when adjustments occur to the default values assumed on the peripheral modules (PM). These adjustments occur when a download of the PM occurs. These fields contain timing and messaging specifications.

The user can enter a list of parameter entries and values. This list has different lengths. When you enter data in parameters at the MAP (maintenance and administration position) terminal, a prompt appears. This prompt appears until you enter a $. Parameters in which you do not enter data retain the established default values. The parameters receive these default values during download. The user can change most of the fields in a tuple when the affected link is in a busy state.

To view all link parameter values on the MPC card, enter the following command at the MPC level of the MAP. Type

>QLINK linknum

and press the Enter key.

where

linknum
specifies which link number (2 or 3) on the MPC the system queries for parameter values

Note: Command QLINK requires a link that contains entries and an in-service MPC.

The MPC has a limited amount of buffer allocation space. The data packet size determines the number of buffers normally dedicated to an activity on a single circuit. The default number of buffers is two. Requests for additional buffers occur from a general buffer pool. This type of allocation indicates a single channel can use the buffers that remain.

Applications, that output messages, can receive an MPC return code when buffers are not available. An MPC return code causes a CC delay of 10 s before the system sends the block to the MPC again. The system can take a list of parameter entries and values out of active service. The list of parameter entries and values has different lengths.

You must enter data in specified parameters in table MPCLINK. These parameters apply to the X.25 protocols. You must enter data in these parameters to correspond to the circuit subscription configuration for DATAPAC or the host data packet network (DPN).

The following parameters must match the circuit subscription:

- local data network address (DNA)
- number of permanent virtual circuits (PVC)
- number of switched virtual circuits (SVC)
- packet window size

These parameters must correspond exactly to subscription requirements. Users must know the requirements of features that use the MPC. Users must understand the circuit subscriptions or the environment in which the circuit subscriptions operate. Users must configure cards and links in tables MPC and MPCLINK to conform to the requirements of higher-level applications.

Warning: If field PARM = L2WINDOW for all protocols, field SIZE must be the same value at the DTE and DCE ends of the data link. When field PARM = L3WINDOW for all protocols, field SIZE must have the same value at the DTE and DCE ends of the data link. If the field SIZE values are different at

MPCLINK (continued)

the DTE and DCE ends of the data link, call processing errors, malfunctions, and lost revenue can occur.

Datafill sequence and meaning

You must enter data in table MPC before you enter data in table MPCLINK.

Table size

0 to 512 tuples

Datafill

Datafill for table MPCLINK appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield	Entry	Explanation and action
LINKKEY		see subfields	*Link key*. This key field contains subfields MPCNO and LINKNO.
	MPCNO	0 to 255	*Multiprotocol controller number*. This field specifies the current multiprotocol controller (MPC) or enhanced multiprotocol controller (EMPC) card for this entry. Enter the MPC/EMPC number as entered in table MPC. This subfield does not have a default value.
	LINKNO	0 to 3	*Link number*. You can only specify logical links 2 or 3. A data link cable can connect to MPC physical ports 1, 2, or 3. Physical ports 2 and 3 are low speed RS232 ports (19.2K and below). Physical port 1 is a high speed V.35 port (56/64K). If the data link cable connects to port 3, specify link 3. If the data link cable connects to port 2, specify link 2. The RS232 is the default ELECTSPEC. The RS232 is not a datafill requirement. If the data link cable connects to port 1, specify link 3 with an ELECTSPEC of V35. This field does not have a default value.

MPCLINK (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield	Entry	Explanation and action
LINKALM (BCS35-)		Y or N	*Link alarm*. Enter Y to activate the MPCLINK alarm for system busy (SYSB) MPC links. Enter N if you do not want to activate the MPCLINK alarm for system busy (SYSB) MPC links. ***Note:*** If you enter N in field LINKALM, the system does not generate MPC908 (MPC link state transition) logs. For IOM MPC, the system checks the link for changes that are not normal. If the change is not normal, the system generates an MPC908 (MPC link state transition) log. If the change is normal, the system does not generate an MPC908 log. The default value on dump and restore procedures for pre-BCS35 is Y.
PRTCLDAT		see subfield	*Protocol data area*. This field contains subfield PROTOCOL.

MPCLINK (continued)

Field descriptions (Sheet 3 of 3)

Field	Subfield	Entry	Explanation and action
	PROTOCOL	ASYNC X2580 X2584 X25ORIG	*Link protocol data*. The protocol selection must correspond to the download file that table MPC specifies. Enter ASYNC. Enter data in subfield LINKNABL as follows. Enter data in additional refinements. Datafill for additional refinements appears in the next table. Enter X2580 or X2584. Enter data in subfield LINKNABL as follows. Enter data in additional refinements. Datafill for additional refinements appears in the third table in this document. Enter X25ORIG. Enter data in subfield LINKNABL as follows. Datafill for additional refinements appears in the fourth table in this document. This subfield does not have a default value.
	LINKNABL	0 to 32767	*Link enable*. Enter the time-out, in min, before the system system busies (SBSY) and returns to service (RTS) a link that is not fully active. This value must be a multiple of 5. Enter 0 to disable the function. This subfield does not have a default value. ***Note:*** If the entry is not zero, the system activates one link. When the other link reaches the timeout threshold, the system SBSY and RTS the active link and the MPC card. To prevent this condition, enter 0 to disable the function.

PROTOCOL = ASYNC

If the entry in subfield PROTOCOL is ASYNC, enter data in refinements PARMASYN and STRASYNC. The datafill for these refinements appears in the following table.

Field descriptions for conditional datafill (Sheet 1 of 11)

Field	Subfield	Entry	Explanation and action
	PARMASYN	see subfield	*Parameter synonym*. This refinement contains subfield PARM. Enter this refinement with a vector list of a maximum of 19 link configuration parameters.
	PARM	APLDEFN BAUDRATE CHARBITS ECHO FCHARCNT FLOWCTRL IMODE L1IDLY L2IDLY LINEMODE LNKDOWN MODMCTRL NCHARTMO NCHTMOIN OMODE PARITY STOPBITS XPARENT	*Parameter protocol*. This vector field contains 19 parameter options. Some parameters are like the parameters used to configure a link that uses X25ORIG or X2580 protocols. If less than 19 options are a requirement, enter $ to end the list. When you enter data in all parameter options, proceed to field STRASYNC. Field STRASYNC appears later in this table. Enter APLDEFN (application definition) to specify application-specified processing. Enter data in refinement ADEFN. Datafill for refinement ADEFN appears later in this table. Enter BAUDRATE (baud rate) to specify the link baud rate. Enter data in refinement RATE. Datafill for refinement RATE appears later in this table. Enter CHARBITS (character bits) to specify the number of bits that represent each character. Enter data in refinement LEN. Datafill for refinement LEN appears later in this table.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 2 of 11)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter ECHO to specify if the MPC must echo input responses received from the remote. Enter data in refinement ECHO. Datafill for refinement ECHO appears later in this table. Enter FCHARCNT (fill character control) to specify the number of times the system transmits an intermessage fill character. Field FILLCHAR specifies the intermessage fill character that the system transmits. Enter data in refinement FCNT. Datafill for refinement FCNT appears later in this table. ***Note:*** Entry FCHARCNT is only correct when the entry in subfield OMODE is CHR. Enter FLOWCTRL (flow control) to specify the link flow control sequence for incoming traffic. Enter data in refinement FLOW. Datafill for refinement FLOW appears later in this table. Enter IMODE (input mode) to indicate the operation mode for the input link (receive direction). Enter data in refinement MD. Datafill for refinement MD appears later in this table. Enter L1IDLY (level 1 input delay) to specify the maximum layer 1 input delay. This delay occurs when the system passes an input buffer to the layer 2 or layer 3 protocol for additional processing. Enter data in refinement T0. Datafill for refinement T0 appears later in this table.

Field descriptions for conditional datafill (Sheet 3 of 11)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter L2IDLY (level 2 input delay). This entry specifies the maximum layer 2 input delay allowed to handle an input buffer output to the CC for additional processing. Enter data in refinement T1. Datafill for refinement T1 appears later in this table. ***Note:*** The entry in refinement T0 for entry L1IDLY must be less than the entry in refinement T1 for entry L2IDLY. This requirement does not apply when one or both refinements are 0. Enter LINEMODE (line mode) to indicate the line mode for the link. Enter data in refinement MODE. Datafill for refinement MODE appears later in this table. Enter LNKDOWN (link down timer) to specify the amount of time a modem link is idle. The modem link is idle until the system records the modem link down. Enter data in refinement T1. Datafill for refinement T1 appears later in this table. ***Note:*** Entry LNKDOWN is only correct when subfield MODMCTRL is FULLMODM. Enter MODMCTRL (modem control) to specify the type of modem control the link presents. Enter data in refinement MODM. Datafill for refinement MODM appears later in this table. Enter NCHARTMO (intercharacter time-out) to specify the minimum intercharacter time-out for character transmission. Enter data in refinement CHTMO. Datafill for refinement CHTMO appears in this table.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 4 of 11)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter NCHTMOIN (intercharacter time-out incoming) to specify the minimum intercharacter time-out for incoming characters. Enter data in refinement CHTMO. Datafill for refinement CHTMO appears later in this chapter. Enter OMODE to indicate the operation mode for the output link (transmit direction). Enter data in refinement MD. Datafill for refinement MD appears later in this chapter. Enter PARITY (parity) to specify the type of parity used on the link. Enter data in refinement PRTY. Datafill for refinement PRTY appears later in this chapter. Enter STOPBITS (stop bits) to specify the number of stop bits required for data communications. Enter data in refinement BITS. Datafill for refinement BITS appears later in this chapter. Enter XPARENT (transparency) to allow DLE character stuffing to achieve data transparency. Enter data in refinement DLE. Datafill for refinement DLE appears later in this chapter.

Field descriptions for conditional datafill (Sheet 5 of 11)

Field	Subfield	Entry	Explanation and action
	ADEFN	A911 , C911, SMDI, or NONE	*Application definition*. If the entry in field PARM is APLDEFN, enter data in this refinement. The applications that are bound to the asynchronous protocol determines the range of possible inputs to this field. The following values are correct entries if the available features that support the values are installed: • A911 This value requires feature AF2146. This feature is E911 Open Interface to ALI Database for Call Processing. • C911 This value requires feature AF2759. This feature is E911 Direct Access to AT&T ALI Controller. • SMDI This value requires feature AF2471. This feature is SMDI Conversion to Use MPC. The default value is NONE. This value indicates that basic asynchronous processing occurs.
	RATE	B300, B600, B1200, B2400, B4800, B9600, B14400, B19200, B28800	*Baud rate*. If the entry in field PARM is BAUDRATE, enter data in this refinement. Enter the link baud rate. The default value is B1200 (1200 baud). The 1X89 MPC circuit card has a max baud rate of 9600 (B9600). Note: In addition to all previously supported baud rates, the IOM MPC also supports B14400, B19200, and B28800. The recommended minimum value for IOM MPC applications is B9600.
	LEN	BIT5, BIT6, BIT7, BIT8	*Character bits*. If the entry in field PARM is CHARBITS, enter data in this refinement. Enter the number of bits that represent each character. The default value is BIT7 (7 bits).

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 6 of 11)

Field	Subfield	Entry	Explanation and action
	ECHO	ON or OFF	*Echo*. If the entry in field PARM is ECHO, enter data in this refinement. Enter ON if the MPC must echo input responses received from the remote. Enter OFF if you do not want the MPC to echo input responses received from the remote. The default value is OFF.
	FCNT	0 to 1024	*Fill character control*. If the entry in field PARM is FCHARCNT, enter data in this refinement. Enter the number of times the system transmits an intermessage fill character. Subfield FILLCHAR specifies the intermessage fill character. Fill character control is for applications that must synchronize a remote device, like a terminal, to the link. The default value is 0. ***Note:*** Entry FCHARCNT is correct when the entry in subfield OMODE is CHR.
	FLOW	NOFLOW or XONOFF	*Flow control*. If the entry in field PARM is FLOWCTRL, enter data in this refinement. Enter the link flow control sequence to control incoming traffic. Enter NOFLOW to indicate a flow control sequence is not available. Enter XONOFF to indicate the American National Standards Institute (ANSI) IA5 XON/XOFF characters are for flow control. The system implements ANSI IA5 XON/XOFF characters as sequences DC1 and DC3 in the sequence specified.

Field descriptions for conditional datafill (Sheet 7 of 11)

Field	Subfield	Entry	Explanation and action
	MD	BLK or CHR	*Input mode*. If the entry in field PARM is IMODE or OMODE, enter data in this refinement. If the entry in field PARM is IMODE, enter the mode in which the input link (receive direction) operates. If the entry in field PARM is OMODE, enter the mode in which the output link (transmit direction) operates. Enter BLK for block mode or CHR for character mode. The default value is BLK.
	MODE	FULL, HALF, SIN, SOUT	*Line mode*. If the entry in field PARM is LINEMODE, enter data in this refinement. Enter the line mode for the link. Enter FULL for full duplex, HALF for half duplex, SIN for simplex-incoming, or SOUT for simplex-outgoing. The default value is FULL.
	T0	0 or 5 to 255	*Level 1 input delay*. If the entry in field PARM is L1IDLY, enter data in this refinement. Enter the time the maximum layer 1 input delays. Enter the time in increments of 10 ms. The delay occurs when the system passes an input buffer to the layer 2 or layer 3 protocol for additional processing. Entries out of this range are not correct. An entry of 0 causes the system to handle data byte-by-byte between level 1 and level 2. The default value is 100 (1 s). ***Note:*** The entry in refinement T0 for entry L1IDLY must be less than the entry in refinement T1 for entry L2IDLY. This requirement does not apply when one or both refinements are 0.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 8 of 11)

Field	Subfield	Entry	Explanation and action
	T1	0 to 1000	*Link down timer*. If the entry in field PARM is L2IDLY or LNKDOWN, enter data in this refinement. If the entry in field PARM is L2IDLY, enter the maximum layer 2 input delay. Enter this delay in intervals of 10 ms. This delay is the time the system allows to handle an input buffer output to the CC for additional processing. The correct range is 0 or 5 to 1000. If the entry in field PARM is LNKDOWN, enter the amount of time a modem link is idle. The modem link is idle until the system records the modem link down. Enter the time in increments of 10-ms. Entries out of this range are not correct. The default value is 200 (2 s). ***Note:*** The entry in refinement T0 for entry L1IDLY must be less than the entry in refinement T1 for entry L2IDLY. This requirement does not apply when one or both refinements are 0.
	MODM	DIAL FULLMODM NOMODM or PARTIAL	*Modem control*. If the entry field PARM is MODMCTRL, enter data in this refinement. Enter the type of modem control the link presents. If the entry in refinement MODE is HALF or SOUT, enter FULLMODEM. The default value is FULLMODM. If the entry in subfield PROTOCOL is ASYNC, you can enter the value DIAL. If you enter DIAL, the MPC assumes the connection is not dedicated. The MPC allows the application to send commands to the modem to establish a connection.

Field descriptions for conditional datafill (Sheet 9 of 11)

Field	Subfield	Entry	Explanation and action
	CHTMO	0 to 500	*Intercharacter time-out*. If the entry in field PARM is NCHARMO or NCHTMOIN, enter data in this refinement. If the entry in field PARM is NCHARMO, enter the minimum intercharacter time-out, in increments of 10-ms, for character transmission. If the entry in field PARM is NCHTMOIN, enter the minimum intercharacter time-out. Enter this value in increments of 10-ms for incoming characters. The default value is 0. This value indicates a delay is not present between characters on transmission. This value represents block data transfer.
	PRTY	EVEN NONE or ODD	*Parity*. If the entry in field PARM is PARITY, enter data in this refinement. Enter the type of parity used on the link. Enter EVEN for even parity, NONE for a parity that is not present, and ODD for odd parity. The default value is EVEN. The system does not support mark and space parity.
	BITS	S1, S2, S15	*Stop bits*. If the entry in field PARM is STOPBITS, enter data in this refinement. Enter the number of stop bits required for data communications. The default value is S1 (1 bit). The value S15 represents 1.5 bits.
	DLE	NODLE or YES	*Transparency*. If the entry in field PARM is XPARENT, enter data in this refinement. Enter NODLE if DLE character stuffing to achieve data transparency cannot occur. An entry of YES allows DLE character stuffing to achieve data transparency. The default value is NODLE.
	STRASYNC	see subfield	*String asynchronous*. This subfield contains subfield STRID.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 10 of 11)

Field	Subfield	Entry	Explanation and action
	STRID	FILLCHAR IEOM ISOM OEOM OSOM	*String identification*. This subfield is a vector that contains six parameter options. To change a parameter default value, enter the parameter option and the associated value. If less than six options are a requirement, enter $ to end the list. If the entry in field PARM is OMODE and the entry in refinement MD is CHR, enter FILLCHAR (fill character). Enter data in refinement TSTRVAL. Datafill for refinement TSRVAL appears later in this table. Enter IEOM for incoming end of message. Enter data in refinement STRVAL. Datafill for refinement STRVAL appears later in this table. Enter ISOM for incoming start of message. Enter data in refinement STRVAL. Datafill for refinement STRVAL appears later in this table. Enter OEOM for outgoing end of message. Enter data in refinement STRVAL. Datafill for refinement STRVAL appears later in this table. Enter OSOM for outgoing start of message. Enter data in refinement STRVAL. Datafill for refinement STRVAL appears later in this table.

Field descriptions for conditional datafill (Sheet 11 of 11)

Field	Subfield	Entry	Explanation and action
	TSTRVAL	0 to 9 and A to F (0 or 2 characters)	*Test string value*. If the entry in subfield STRID is FILLCHAR, enter data in this refinement. This parameter allows for the specification of an intermessage fill character. This character is for use in some applications to synchronize a remote device to the link. A terminal is an example of a remote device. Enter characters in multiples of two. The system performs range checking. The default value is a no-fill character. A no-fill character is equivalent to the entry of a vector of zero length (nil).
	STRVAL	0 to 9 and A to F (to a maximum of 8 characters)	*String value*. If the entry in subfield STRID is IEOM, ISOM, OEOM, or OSOM, enter data in this refinement. This parameter specifies the end-of-message or start-of-message sequence verified on all incoming or outgoing messages on the link. Enter characters in groups of two. Each two-character block of the entered string represents from one to four hexadecimal characters. The system can find the character sequence that this subfield represents in an incoming message. When this condition occurs, the system removes the characters from the message. If the entry in subfield STRID is IEOM or ISOM, the default value can occur. The default value occurs if an end-of-message or start-of message verification does not occur. The default value occurs if you do not enter characters. If the entry in subfield STRID is OEOM or OSOM, the default value can occur. The default value occurs when you do not add characters to the end of the transmitted message. The default value occurs if you do not enter characters.

MPCLINK (continued)

PROTOCOL = X2580 or X2584

If the entry in subfield PROTOCOL is X2580 or X2584, enter data in refinements CONVNABL, PARMS, and EXINF. Datafill for these refinements appears in the following table.

Field descriptions for conditional datafill (Sheet 1 of 16)

Field	Subfield	Entry	Explanation and action
	CONVNABL	0 to 32767	*Conversation enable*. Enter the number of minutes a conversation is not in progress before correcting action occurs. This value must be a multiple of 5. An entry of 0 indicates a period of time is not specified. This field does not have a default value.
	PARMS	see subfield	*Parameter selector (CCITT x 25 CC protocol)*. This field contains subfield PARM.
	PARM	BAUDRATE, CLKSRCE, ELECSPEC, L2MODULO, L2WINDOW, L3ACK, L3DATA, L3MODULO, L3WINDOW, N2, NODETYPE, NUMPVCS, PVCDBIT, R20, R22, R23, R25, SVCS2WAY, SVCSIN, SVCSOUT, T1_S, T1_10MS, T20, T21, T22, T23	*Parameter selector*. Enter this field with a vector that has a maximum of 37 parameter options. Enter the parameter option and the associated value to change a parameter default value. Enter parameters as a group of the parameter type. You must enter the parameter name and the value. Enter these items one item at a time in any order. If less than 37 options are a requirement, enter $ to end the list. After you enter all parameter options, proceed to field EXINF. Field EXINF appears later in this table. Enter BAUDRATE (baud rate) to specify the baud rate. Enter data in refinement RATE. Datafill for refinement RATE appears later in this table. Enter CLKSRCE (clock source) to specify the source for the MPC system clock. Enter data in refinement SOURCE. Datafill for refinement SOURCE appears later in this table.

Field descriptions for conditional datafill (Sheet 2 of 16)

Field	Subfield	Entry	Explanation and action
	PARM (continued)	T25, T26, T2_S T2_10MS, T3_S, T3_10MS, T4_S, T4_10MS, THRUPUT	Enter ELECSPEC (physical link specification) to determine the electrical specification for links 2 and 3 on the MPC. Enter data in refinement SOURCE. The refinement SOURCE appears later in this table. Enter L2MODULO (frame level modulo counter) to specify a numbering design for end-to-end messaging at level 2. Enter data in refinement MODVAL as described later in this table. Enter L2WINDOW (frame window size) to specify the size of the frame window. Enter data in refinement SIZE. Datafill for refinement SIZE appears later in this table. *Warning:* Field SIZE must have the same value at the DTE and DCE ends of the data link. If the value is not the same, call processing errors, malfunctions, and lost revenue can occur. Enter L3ACK (level 3 packet acknowledgement) to specify packet acknowledgement. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter L3DATA (level 3 data packet size) to specify the maximum number of bytes of user data allowed in a data packet. Enter data in refinement DATASIZE. Datafill for refinement DATASIZE appears later in this table.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 3 of 16)

Field	Subfield	Entry	Explanation and action
			Enter L3MODULO (level 3 packet level modulo counter) to specify a protocol numbering design for end-to-end messaging at level 3. Enter data in refinement MODVAL. Datafill for refinement MODVAL appears later in this table. Enter L3WINDOW (level 3 packet window) to specify the packet-level window size. Enter data in refinement SIZE. Datafill for refinement SIZE appears later in this table. *Warning:* Field SIZE must have the same value at the DTE and DCE ends of the data link. If the value is not the same, call processing errors, malfunctions, and lost revenue can occur. Enter N2 (retransmission counter) to specify the size of the retransmission counter. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter NODETYPE (node type or address) to specify the node type or address of the MPC. Enter data in refinement NODE. Datafill for refinement NODE appears later in this table. Enter NUMPVCS (number of permanent virtual circuits [PVC]) to specify the number of PVCs on the link. Enter data in refinement NUMVCS. Datafill for refinement NUMVCS appears later in this table.
	PARM (continued)		Enter PVCDBIT (PVC bitset) to activate the X.25 D-bit facility on PVC channels. Enter data in refinement BITSET. Datafill for refinement BITSET appears later in this table.

Field descriptions for conditional datafill (Sheet 4 of 16)

Field	Subfield	Entry	Explanation and action
			Enter R20 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T20). Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. The user must enter data in parameter T20. Enter R22 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T22). Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Parameter T22 must contain data. Enter R23 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T23). Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Parameter T23 must contain data. Enter R25 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T25). Enter data in refinement VALUE. Datafill for refinement value appears later in this table. Parameter T25 must contain data.
	PARM (continued)		Enter SVCS2WAY. This entry is the number of 2-way switched virtual circuit (SVC). Enter data in refinement NUMVCS. Datafill for refinement NUMVCS appears later in this table. Enter SVCSIN (number of one-way incoming SVCs). Enter data in refinement NUMVCS. Datafill for refinement NUMVCS appears later in this table. Enter SVCSOUT (number of one-way outgoing SVCs). Enter data in refinement NUMVCS. Datafill for refinement NUMVCS appears later in this table. Enter T1_S (timer 1 in steps of 1-s) to specify the timer value in seconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 5 of 16)

Field	Subfield	Entry	Explanation and action
			Enter T1_10MS (timer 1 in steps of 10m-s) to specify the timer value in milliseconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. ***Note:*** You can enter data in timer T1_S or timer T1_10MS. You cannot enter data in both timers. Enter T20 (restart request timer) to determine the transmission of requests to restart level 3. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table.
	PARM (continued)		Enter T21 (call restart response timer) to time the remote response to a call request packet. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T22 (reset request timer) to time the remote response to a reset request. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T23 (clear request response timer) to time the remote response to a reset to clear a virtual call. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T25 (packet acknowledgement timer) to time an acknowledgement is from the remote of the reception of a level 3 packet. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T26 (interrupt response timer) to time the remote response if the system transmits an interrupt packet at level 3. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T2_S (timer 2 in steps of 1-s) to specify the timer value in seconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table.

Field descriptions for conditional datafill (Sheet 6 of 16)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter T2_10MS (timer 2 in steps of 10-ms) to specify the timer value in milliseconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. ***Note:*** You can enter data in timer T2_S or timer T2_10MS. You cannot enter data in both timers. Enter T3_S (timer 3 in steps of 1-s) to specify the timer value in seconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T3_10MS (timer 3 in steps of 10-ms) to specify the timer value in milliseconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. ***Note:*** You can enter data in timer T3_S or timer T3_10MS. You cannot enter data in both timers. Enter T4_S (timer 4 in steps of 1-s) to specify the timer value in seconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T4_10MS (timer 4 in steps of 10-ms) to specify the timer value in milliseconds. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. ***Note:*** You can enter data in timer T4_S or timer T4_10MS. You cannot enter data in both timers. Enter THRUPUT (throughput class) to specify the throughput class across the link for outgoing data. Enter data in refinement RATE. Datafill for refinement RATE appears later in this table.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 7 of 16)

Field	Subfield	Entry	Explanation and action
	RATE	B300, B600, B1200, B2400, B4800, B9600, B14400, B19200, or B28800 NOVALUE, T75, T150, T300, T600, T1200, T2400, T4800, T9600, T19200, or T48000	*Baud rate*. If the entry in field PARM is BAUDRATE or THRUPUT, enter data in this refinement. If the entry in field PARM is BAUDRATE, enter the baud rate value for data transmission compatible to the ends of the circuit. The baud rate value represents bits per second. If field CLKSRCE contains INTERNAL, you can enter data in field BAUDRATE. ***Note:*** The IOM MPC supports baudrates B14400 and B28800. The default value is B2400. If the entry in field PARM is THRUPUT, enter NOVALUE. This entry indicates that you accept the throughput class transmission rate entered in refinement RATE. Enter one of the throughput values (T75 to T48000) for selection of a throughput class other than the default value.

Field descriptions for conditional datafill (Sheet 8 of 16)

Field	Subfield	Entry	Explanation and action
	SOURCE	INTERNAL or EXTERNAL RS232 or V35 or 512KV35	*Clock source*. If the entry in field PARM is CLKSRCE or ELECSPEC, enter data in this refinement. If the entry in field PARM is CLKSRCE, enter INTERNAL for the MPC card, or EXTERNAL for a modem device. Link 2 and link 3 must have the same clock source. The clock source can be internal or external. If link 2 and link 3 have different clock sources, the system generates an error message. The default value is EXTERNAL. If the entry in field PARM is ELECSPEC, enter RS232. This entry is the electrical specification for links 2 and 3 on the NT1X89AA multiprotocol controller (MPC) card. If the enhanced MPC (EMPC) is installed, enter RS232 (port 3 is link 3) or V35 (port 1 is link 3). You must enter one of these values because the NT1X89BA/BB enhanced multiprotocol controller card supports both specifications. ***Note:*** The IOM MPC can have value 512KV35. This value supports X2580 or X2584 protocols. The default value is RS232.
	MODVAL	MOD8 or MOD128	*Frame level modulo counter*. If the entry in field PARM is L2MODULO or L3MODULO, enter data in this refinement. Enter a numbering design for end-to-end messaging at level 2 or level 3. Modulo 8 frame sequencing (MOD8) supports a maximum level 2 or level 3 window size of 7. The refinement SIZE is 7. The default value is MOD8.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 9 of 16)

Field	Subfield	Entry	Explanation and action
	SIZE	1 to 127	*Frame window size*. If the entry in field PARM is L2WINDOW or L3WINDOW, enter data in this refinement. Enter the size of the frame window. The frame window is the number of frames that level 2 and level 3 software sends before the levels require a confirmation. The confirmation indicates the software received the first frame. The recommended frame window is 7 because this frame window transmits data faster. In conditions specified, the end application cannot allow a frame window of 7. The digital terminal equipment (DTE) and the digital carrier equipment (DCE) must agree on this parameter. The default value is 2.

Field descriptions for conditional datafill (Sheet 10 of 16)

Field	Subfield	Entry	Explanation and action
	VALUE	0 to 255	*Value*. If the entry in field PARM is one of the following, enter data in refinement VALUE: L3ACK, N2, R20, R22, R23, R25, T1_S, T1_10MS, T20, T21, T22, T23, T25, T26, T2_S, T2_10MS, T3_S, T3_10MS, T4_S, T4_10MS. If the entry in field PARM is L3ACK, the system uses this level 3 timer with subfields T2_S and T2_10MS. The entry is in units of 10 ms. The entry must be less than the values in subfields T2_S and T2_10MS. This requirement does not apply if both values are 0. The preferred value is a minimum of 20 ms less than the values in subfields T2_S and T2_10MS. The operating system timing functions of the following cards determine the preferred value: • the NT1X89AA multiprotocol controller cards • the NT1X89BA/BB enhanced multiprotocol controller cards The default value of 0 indicates the system immediately acknowledges incoming data at level 3. To conserve packets when refinement VALUE is not 0, the system starts the timer for an incoming packet. The system starts the timer and waits for reciprocal outgoing data. The reciprocal outgoing data can carry the acknowledgment of the incoming data. If outgoing data is not present, the system acknowledges the incoming data when refinement VALUE expires. Do not enter data in refinement VALUE unless a pattern of data is present and recognized. The user must use the Level 3 packet acknowledgment correctly. If the user does not use acknowledgment correctly, throughput from the remote node is affected. The default value is 0.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 11 of 16)

Field	Subfield	Entry	Explanation and action
	VALUE (continued)		If the entry in field PARM is N2, 0 is not a correct entry. A value of 255 indicates the counter size does not have a limit. This counter determines the number of times level 2 transmits a frame again. Level 2 transmits the frame again for which the level does not receive an acknowledgment in the retransmission time. Field PARM is T1. The default value is 10. If the entry in field PARM is R20, 0 is not a correct entry. Enter the maximum number of expirations of the restart request timer. Field PARM is T20. When the value for entry T20 expires, the system sends the level 3 restart request again. The system resends the level 3 restart request until the number of requests equals the value entered for value R20. Timing stops if the system receives confirmation of the request. The default value is 1. If the entry in field PARM is R22, 0 is not a correct entry. The default value is 1. If the entry in field PARM is R23, 0 is not a correct entry. Enter the number of clear request retransmissions sent before the counter clears.

Field descriptions for conditional datafill (Sheet 12 of 16)

Field	Subfield	Entry	Explanation and action
			If the entry in field PARM is R25, enter the number of data retransmissions attempted before the system fails the message. The system resets the channel. The data that the system does not acknowledge after the packet acknowledgment timer (T25) expires determines the channel. The default value is 0. If the entry in field PARM is T1_S, 0 is not a correct entry. Enter the time value in steps of 1 s. Entry T1_S is a timer used at level 2 to determine if the remote responds correctly. The system uses this timer with entry N2. The link can change state and reinitialize. This condition occurs under the following conditions: • if the T1_S timer expires the number of times specified in refinement VALUE for parameter N2 • if the T1_S timer does not send the correct acknowledgment of a frame to the remote device The entry in refinement VALUE must be equal to the entry of the remote DCE or DTE for local timer (T2_S) accuracy. If the entry in field PARM is T1_10MS or T2_10MS, the range is 0 or 5 to 255. Enter the time value in steps of 10 ms.
	VALUE (continued)		***Note:*** You can enter timer T1_S or timer T1_10MS. You cannot enter both timers. If you do not enter timer T1_S or timer T1_10MS, the default value for timer T1_S is 5 s. If the entry in field PARM is T2_S, this timer is the guideline to send an acknowledgment for data received. The real value of this entry must be less than the value entered in refinement VALUE for T1_S or T1_10MS. Enter the time value in steps of 1 s.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 13 of 16)

Field	Subfield	Entry	Explanation and action
			Note: You can enter timer T2_S or timer T2_10MS. You cannot enter both timers. If you do not enter timer T2_S or timer T2_10MS, the default value for timer T2_S is 3 s.
	VALUE (continued)		If the entry in field PARM is T20, T21, T22, or T23, 0 is not a correct entry. The default for timer T20 is 180. The default for timer T21 is 200. The default for timer T23 is 180. If the entry in field PARM is T25, an entry of 0 indicates a time period that is not specified. Value 0 is not a correct entry for protocol X2580. The default value is 0. If the entry in field PARM is T26, 0 is not a correct entry. The default value is 180. If the entry in field PARM is T3_S, 0 is not a correct entry. Enter the time value in steps of 1 s. This timer is the idle channel timer. This timer determines when the link logically disconnects after detection of the idle channel state. The system enters the idle channel state when one end detects that I-frames or flags are not incoming on a channel from the remote device. The idle channel time value must be greater than the inactive link timer value. The idle channel time value must be greater than the timer values for timers T1_S or T1_10MS, and T2_S or T2_10MS. If the entry in field PARM is T3_10MS or T4_10MS, the range is 5 to 255. Enter the time value in steps of 10 ms. ***Note:*** You can enter data in timer T3_S or timer T3_10MS. You cannot enter data in both timers. If you do not enter timer T3_S or timer T3_10MS, the default value for timer 3 is 25 s.

Field descriptions for conditional datafill (Sheet 14 of 16)

Field	Subfield	Entry	Explanation and action
	VALUE (continued)		If the entry in field PARM is T4_S, 0 is not a correct entry. Enter the time value in steps of 1 s. This timer is the inactive link timer. This timer times the periodic transmission of a frame to check remote responsiveness. This timer checks remote responsiveness when a higher level of activity on the link is not present. The inactive link timer value must be less than the idle channel timer value. The idle channel timers are T3_S or T3_10MS. The inactive link timer value must be greater than the values for timers T1_S or T1_10MS. ***Note:*** You must enter data for timer T4_S or timer T4_10MS. You cannot enter data for both timers. If you do not enter data for timer T4_S or timer T4_10MS, the default value for timer T4_S is 10 s.
	DATASIZE	P16, P32, P64, P128, P256, P512, P1024, P2048, or P4096	*Level 3 data packet size*. If the entry in field PARM is L3DATA, enter data for this refinement. Enter the maximum number of bytes of user data allowed in a data packet. The default value is P128.
	NODE	DCE or DTE	*Node type or address*. If the entry in field PARM is NODETYPE, enter data in this refinement. Enter the node type or address of the MPC. Enter DCE for digital carrier equipment or DTE for data terminal equipment. This entry indicates to the MPC that frame addressing is DCE or DTE. The default value is DTE.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 15 of 16)

Field	Subfield	Entry	Explanation and action
	NUMVCS	0 to 255	*Number of virtual circuits*. If the entry in field PARM is NUMPVCS, SVCS2WAY, SVCSIN, or SVCSOUT, enter data in this refinement. If the entry in field PARM is NUMPVCS, enter the number of permanent virtual circuits (PVC) on the link. If the system does not configure SVCs, a user can configure a maximum of 255 PVCs. The default value is 3. If the entry in field PARM is SVCS2WAY, enter the number of two-way SVCs configured on the link. If the entry in field PARM is SVCSIN, enter the number of one-way incoming SVCs. If the entry in field PARM is SVCSOUT, enter the number of one-way outgoing SVCs.
	NUMVCS (continued)		If the total number of SVCs on a link is not 0, you must enter SVCDNA in subfield EXINF80. The entry SVCTYPE is not an additional information option with the X2580 protocol. If you do not enter any SVCs, the system configures a default of 0 for each type. This condition occurs if the user enters data in some PVCs. If the system does not enter data in PVCs or SVCs, the system rejects the tuple. The system can configure a maximum of 255 SVCs. The total of combined PVCs and SVCs cannot exceed 255 (NUMPVCS + SVCS2WAY + SVCSIN + SVCSOUT £ 255)

Field descriptions for conditional datafill (Sheet 16 of 16)

Field	Subfield	Entry	Explanation and action
	BITSET	DOFF or DON	*Permanent virtual circuit d-bit set*. If the entry in field PARM is PVCDBIT, enter data in this refinement. Enter DOFF to disable the D-bit facility. Enter DON to activate the D-bit facility. Over a network PVC, the network subscription must include the D-bit to use parameter PVCDBIT correctly. The MPC sends all user data with the D-bit set. The MPC acknowledges all incoming D-bit data. This condition applies to PVCs on the link. The call setup process determines the use of the D-bit for an SVC. The default value is DOFF.
	EXINF	see subfield	*Example information protocol*. This field contains subfield EXINFO.
	EXINFO	SVCDNA	*Example information protocol*. Enter SVCDNA if the link uses SVCs. Enter data in refinement DIGITS. If the link uses SVCs, enter $. SVCDNA is the only correct entry.
	DIGITS	0 to 9 (vector of a maximum of 15 entries)	*Digits*. Enter the digits for the network address.

MPCLINK (continued)

PROTOCOL = X25ORIG

If the entry in subfield PROTOCOL is X25ORIG, enter data in refinements CONVNABL, PARMS, and EXTRAINF. The datafill for these refinements appears in the following table.

Field descriptions for conditional datafill (Sheet 1 of 20)

Field	Subfield	Entry	Explanation and action
	CONVNABL	0 to 32767	*Conversation enable*. Enter the number of minutes a conversation is not in progress before the system takes corrective action. This value must be a multiple of 5. An entry of 0 indicates a period of time that is not specified. This subfield does not have a default value.
	PARMS	see subfield	*Parameters*. This refinement contains subfield PARMSEL.

Field descriptions for conditional datafill (Sheet 2 of 20)

Field	Subfield	Entry	Explanation and action
	PARM	BAUDRATE, CLKSRCE, CTSTIMER, DCDTIMER, ELECSPEC, ENVIRON, FACILCODE, INITROLE, L1PTTOPT, L2ACCESS, L2MODULO, L2WINDOW, L3DATA, L3MODULO, L3WINDOW, LINEMODE, LINKCONT, LINUSAGE, N2, NODETYPE, NUMPRIO, NUMPVCS, NUMSVCS, PHONE, POOLPCT, R20, R22, R23, R25, R27, STANDARD, SYNCMODE, T1, T2, T20, T21, T22, T23, T24, T25, T26, T27, THRUPUT, TIDLE, TINACTIVE	*Parameter selector*. Enter this field with a vector of a maximum of 46 parameter options. Enter the parameter option and the associated value to change a parameter default value. You must enter parameters as a combination of the parameter type. Enter the parameter name and the value. Enter these items one item at a time in any order. If you require less than 46 options, enter $ to end the list. After you enter all parameter options, proceed to field EXTRAINF. A description of this field appears later in this table. Enter BAUDRATE (baud rate) to specify the baud rate. Enter data in refinement RATE. Datafill for refinement RATE appears later in this table. Enter CLKSRCE (clock source) to specify the source for the MPC system clock. Enter data in refinement SOURCE. Datafill for refinement SOURCE appears later in this table. The system does not support CTSTIMER. The CTSTIMER is the call-through simulator (CTS). Enter CTSTIMER to indicate that timing for CTS is not active on the MPC. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this table. The DCDTIMER (DCD timer) is not supported. Enter DCDTIMER to indicate timing failure for DCD. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this table.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 3 of 20)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter ELECSPEC (physical link specification) to determine the electrical specification for links 2 and 3 on the MPC. Enter data in refinement SPEC. Datafill for refinement SPEC appears later in this table. Enter ENVIRON (environment) to specify the protocol environment to establish communications. Enter data in refinement MPCENVRN. Datafill for refinement MPCENVRN appears later in this table. The system does not support FACILCODE (facility code). Enter FACILCODE. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this table. Enter INITROLE (initialization role) to indicate the role of the MPC during initialization. Enter data in refinement ROLE. Datafill for refinement ROLE appears later in this table. Enter L1PTTOPT (dedicated link) to specify if the link is dedicated. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter L2ACCESS (level 2 link access procedure) to specify the link access. Enter data in refinement PROTOCOL. Datafill for refinement PROTOCOL appears later in this table.

Field descriptions for conditional datafill (Sheet 4 of 20)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter L2MODULO (level 2 frame level modulo counter) to specify a numbering scheme for end-to-end messaging at level 2. Enter data in refinement MODVAL. Datafill for refinement MODVAL appears later in this table. Enter L2WINDOW (level 2 frame window size) to specify the size of the frame window. Enter data in refinement SIZE. Datafill for refinement SIZE appears later in this table. *Warning:* Field SIZE must have the same value at the DTE and DCE ends of the data link. If the value is not the same, call processing errors, malfunctions, and lost revenue can occur. Enter L3DATA (level 3 data packet size) to specify the maximum number of bytes of user data allowed in a data packet. Enter data in refinement DATASIZE. Datafill for refinement DATASIZE appears later in this table. Enter L3MODULO (level 3 packet level modulo counter). This entry specifies a protocol numbering scheme for end-to-end messaging at level 3. Enter data in refinement MODVAL. Datafill for refinement MODVAL appears later in this chapter. Enter L3WINDOW (level 3 packet window) to specify the packet level window size. Enter data in refinement SIZE. Datafill for refinement SIZE appears later in this chapter.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 5 of 20)

Field	Subfield	Entry	Explanation and action
			Warning: Field SIZE must have the same value at the DTE and DCE ends of the data link. If the value is not the same, call processing errors, malfunctions, and lost revenue can occur. Enter LINEMODE (line mode) to specify the line mode. Enter data in datafill refinement MODE. Datafill for refinement MODE appears later in this chapter. Enter LINKCONT (link control) to specify the link control protocol. Enter data in refinement CONTROL. Datafill for refinement CONTROL appears later in this chapter. Enter LINUSAGE (line usage) to specify the type of circuit. Enter data in refinement LINE. Datafill for refinement LINE appears later in this chapter. Enter N2 (retransmission counter) to specify the size of the retransmission counter. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this chapter.

Field descriptions for conditional datafill (Sheet 6 of 20)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter NODETYPE (node type or address) to specify the node type or address of the MPC. Enter data in refinement NODE. Datafill for refinement NODE appears later in this chapter. Enter NUMPRIO (number with priority) to specify the number of virtual circuits with high priority. Enter data in refinement NUMVCS. Datafill for refinement NUMVCS appears later in this chapter. Enter NUMPVCS. This entry is the number of permanent virtual circuits (PVC). This entry specifies the number of PVCs on the link. Enter data in refinement NUMVCS. Datafill for refinement NUMVCS appears later in this chapter. Enter NUMSVCS. This entry is the number of simultaneous virtual circuits (SVC). This entry specifies the number of SVCs on the link. Enter data in refinement NUMVCS. Datafill for refinement NUMVCS appears later in this chapter. The system does not support PHONE (phone). Enter PHONE. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this chapter. Enter POOLPCT (pool percentage) to specify the percentage of total buffer pool resources that belong to PVCs. Enter data in refinement PERCENT. Datafill for refinement PERCENT appears later in this chapter.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 7 of 20)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter R20 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T20). Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this chapter. The user must enter data in parameter T20. Enter R22 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T22). Enter data in refinement VALUE. Datafill for refinement VALUE appears in this chapter. You must enter parameter T22. Enter R23 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T23). Enter data in refinement VALUE. Datafill for refinement VALUE appears in this chapter. You must enter parameter T23. Enter R25 (restart requests count) to specify the maximum number of expirations of the restart request timer (entry T25). Enter data in refinement VALUE as appears in this chapter. You must enter parameter T25. The system does not support R27 (reject retransmission count). Enter R27. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this chapter.

Field descriptions for conditional datafill (Sheet 8 of 20)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter STANDARD (standard) to specify the protocol standards the system must follow for communications on the link. Enter data in refinement STANDARD. Datafill for refinement STANDARD appears later in this chapter. Enter SYNCMODE (synchronous mode) for synchronous communications. Enter data in refinement MODE. Datafill for refinement MODE appears later in this chapter. Enter T1 (retransmission timer) to set the time for the level 2 retransmission timer. This setting specifies if the remote MPC responds correctly. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this chapter. The system does not support T2 (checkpoint). Enter T2. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this chapter. Enter T20 (restart request timer) to determine the transfer of requests to restart level 3. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this chapter. Enter T21 (call restart response timer) to time the remote response to a call request packet. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this chapter.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 9 of 20)

Field	Subfield	Entry	Explanation and action
	PARM (continued)		Enter T22 (reset request timer) to time the remote response to a reset request. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T23 (clear request response timer) to time the remote response to a reset to clear a virtual call. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. The system does not support T24 (window update timer). Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this table. Enter T25 (packet acknowledgement timer) to time an acknowledgement from the remote that reception of a level 3 packet occurred. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter T26 (interrupt response timer) to time the remote response if the system transmits an interrupt packet at level 3. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. The system does not support T27 (reject response timer). Enter T27. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this table.

Field descriptions for conditional datafill (Sheet 10 of 20)

Field	Subfield	Entry	Explanation and action
			Enter THRUPUT (throughput class) for the throughput class across the link for outgoing data. Enter THRUPUT. Enter data in refinement DEFAULT. Datafill for refinement DEFAULT appears later in this table. Enter TIDLE (idle channel timer) to determine when the system logically disconnects a link after the system detects an idle channel state. The idle channel state occurs when one end detects that I-frames or flags are not incoming. The I-frames or flags are not incoming on a channel from the remote. Enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table. Enter TINACTIVE (inactive link timer) to time the periodic transmission of a frame. Perform this action to check remote responsiveness if applications activity does not occur on the link. Enter TINACTIVE to enter data in refinement VALUE. Datafill for refinement VALUE appears later in this table.
	RATE	B300, B600, B1200, B2400, B4800, B9600, B14400, B19200 or B28800	*Baud rate*. If the entry in field PARM is BAUDRATE, enter data in this refinement. Enter the baud rate value for data transmission that is compatible for both ends of the circuit. The baud rate value is in bits per second. The user can enter data in field BAUDRATE if entry of field CLKSRCE is INTERNAL. ***Note:*** The IOM MPC supports baudrates B14400 and B28800. The default value is B2400.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 11 of 20)

Field	Subfield	Entry	Explanation and action
	SOURCE	INTERNAL or EXTERNAL	*Clock source*. If the entry in field PARM is CLKSRCE, enter data in this refinement. Enter INTERNAL for the MPC card or EXTERNAL for a modem device. Links 2 and 3 must have the same clock source. If the user enters a different clock source for links 2 and 3, the system generates an error message. The default value is EXTERNAL.
	DEFAULT	NOVALUE or T75, T150, T300, T600, T1200, T2400, T4800, T9600, T19200, or T48000	*Default*. Enter data in this refinement if the entry in field PARM is one of the following: • CTSTIMER • DCDTIMER • FACILCODE • PHONE • R27 • T2 • T24 • T27 • THRUPUT If the entry in field PARM is THRUPUT, enter NOVALUE. This entry allows the acceptance of the throughput class transmission rate entered in refinement RATE. To select a throughput class other than the default value, enter one of the throughput values. The throughput values are T75 to T48000. If the entry in field PARM is any value other than THRUPUT, the system does not support the parameter. Enter NOVALUE. The default value is NOVALUE.

Field descriptions for conditional datafill (Sheet 12 of 20)

Field	Subfield	Entry	Explanation and action
	ELECSPEC	RS232 or V35	*Specification*. If the entry in field PARM is ELECSPEC, enter RS232 as the electrical specification for links 2 and 3. Links 2 and 3 are on the NT1X89AA multiprotocol controller (MPC) card. If the enhanced MPC (EMPC) is installed, enter RS232 or V35. Port 3 is link 3 for RS232. Port 1 is link 3 for V35. The NT1X89BA/BB enhanced MPC card supports both specifications. The default value is RS232.
	MPCENVRN	DCETODTE or DTETODXE	*Environment*. If the entry in field PARM is ENVIRON, enter this refinement. This parameter specifies the protocol environment to establish communications. If the entry in refinement NODE is DCE, enter DCETODTE. If the entry in refinement NODE is DTE, enter DTETODXE. The default value is DTETODXE.
	ROLE	PASSIVE	*Initialization role*. If the entry in field PARM is INITIROLE, enter data in this refinement. Enter PASSIVE to indicate the role of the MPC during initialization. The default value is PASSIVE.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 13 of 20)

Field	Subfield	Entry	Explanation and action
	VALUE	0 to 255 or YES or NO	*Value*. Enter data in this refinement if the entry in field PARM is one of the following: • L1PTTOPT • N2 • R20 • R22 • R23 • R25 • T1 • T20 • T21 • T22 • T23 • T25 • T26 • TIDLE • TINACTIVE If the entry in field PARM is L1PTTOPT, if the link is a dedicated link enter YES. Enter NO if the link is not a dedicated link. If the entry in field PARM is N2, a value of 255 indicates the counter size does not have a limit. This counter determines how many times level 2 transmits a frame again. The system does not receive acknowledgment for this frame in the retransmission time. Field PARM is T1. The default value is 10.

Field descriptions for conditional datafill (Sheet 14 of 20)

Field	Subfield	Entry	Explanation and action
	VALUE (continued)		If the entry in field PARM is R20, 0 is not a correct entry. Enter the maximum number of expirations of the restart request timer (T20). When the value entered for entry T20 expires, the system resends the level 3 restart request. The system resends the request the number of times data is entered for value R20. Timing stops if the system receives confirmation of the request. The default value is 1. If the entry in field PARM is R22, 0 is not a correct entry. The default value is 1. If the entry in field PARM is R23, 0 is not a correct entry. Enter the number of clear request retransmissions sent before the system clears the counter. If the entry in field PARM is R25, enter the number of data retransmissions attempted before the system fails the message. The data that is not acknowledged after the packet acknowledgment timer (T25) expires, determines how the system resets a channel. The default value is 0.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 15 of 20)

Field	Subfield	Entry	Explanation and action
	VALUE (continued)		If the value in field PARM is T1, enter time, in seconds, for the retransmission timer. The system uses a timer at level 2 to determine if the remote MPC responds. Time can expire. the number of times entered for protocol N2 without correct acknowledgment. The correct acknowledgment is of a transmitted frame from the remote. When these conditions occur, the link changes state and reinitializes. An entry of 0 indicates a period of time that is not specified. This entry is not correct. The default value is 3. If the entry in field PARM is T20, T21, T22, or T23, 0 is not a correct entry. The default for timer T20 is 180. The default for timer T21 is 200. The default for timer T23 is 180. If the entry in field PARM is T25, an entry of 0 indicates a time period that is not specified. The default value is 0. If the entry in field PARM is T26, 0 is not a correct entry. The default value is 180. If the entry in field PARM is TIDLE, 0 is not a correct entry. Enter the amount of time, in seconds, that a channel can remain idle before the system disconnects the channel.

Field descriptions for conditional datafill (Sheet 16 of 20)

Field	Subfield	Entry	Explanation and action
	VALUE (continued)		The default value is 180. If the entry in field PARM is TINACTIVE, 0 is not a correct entry. Enter the time, in seconds, that the link can remain idle before the system deactivates the link. The default value is 180. ***Note:*** The value of the inactive link timer (TINACTIVE) must be less than or equal to the value of the idle channel timer (TIDLE). The value of the inactive link timer must be greater than the value of the transmission timer (T1).
	PROTOCOL	LAPB	*Link access procedure*. If the entry in field PARM is L2ACCESS, enter data in this refinement. The system can support link access procedure balance mode (LAPB). Enter LAPB as the type of level 2 link access procedure. The default value is LAPB.
	MODVAL	MOD8 or MOD128	*Frame level modulo counter*. If the entry in field PARM is L2MODULO or L3MODULO, enter data in this refinement. This parameter specifies a numbering scheme for end-to-end messaging at level 2 or level 3. The only correct entry is MOD8. Modulo 8 frame sequencing (MOD8) supports a maximum level 2 or level 3 window size of 7. The refinement SIZE is 7. The default value is MOD8.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 17 of 20)

Field	Subfield	Entry	Explanation and action
	SIZE	1 to 127	*Frame window size*. If the entry in field PARM is L2WINDOW or L3WINDOW, enter data in this refinement. Enter the size of the frame window. The frame window refers to the number of frames that level 2 and level 3 software send before the software requires confirmation. The software receives confirmation that the system received the first frame. The recommended frame window value is 7. A frame window of 7 transmits data faster. The end application does not always allow a frame window of 7. The digital trunk equipment (DTE) and the digital carrier equipment (DCE) must agree on this parameter. The default value is 2. *Warning:* Field SIZE must have the same value at both the DTE and DCE ends of the data link. If the value is not the same, call processing errors, malfunctions, and lost revenue can occur.
	DATASIZE	P256	*Level 3 data packet size*. If the entry in field PARM is L3DATA, enter data in this refinement. Enter the maximum number of bytes of user data allowed in a data packet. The maximum number is 256 (P256). Entries outside this range are not correct. The default value is P128.
	MODE	FDUPLEX SYNC	*Synchronous mode*. If the entry in field PARM is LINEMODE or SYNCMODE, enter data in this refinement. If the entry in field PARM is LINEMODE, full duplex is the only mode that operates on the MPC. Enter FDUPLEX. If the entry in field PARM is SYNCMODE, communications are synchronous on the MPC. Enter SYNC. The default value is SYNC.

Field descriptions for conditional datafill (Sheet 18 of 20)

Field	Subfield	Entry	Explanation and action
	CONTROL	HDLC	*Link control*. If the entry in field PARM is LINKCONT, enter data in this refinement. High-level data link control (HDLC) is the only link control protocol that the MPC can support. Enter HDLC. The default value is HDLC.
	LINE	LEASED	*Line usage*. If the entry in field PARM is LINUSAGE, enter data in this refinement. The MPC can support the four-wire leased circuit (full duplex). Enter LEASED. The default value is LEASED.
	NODE	DCE or DTE	*Node type or address*. If the entry in field PARM is NODETYPE, enter data in this refinement. Enter the node type or address of the MPC. Enter DCE for digital carrier equipment or DTE for data terminal equipment. This entry indicates to the MPC that frame addressing is DCE or DTE. The default value is DTE.
	NUMVCS	0 to 255	*Number of virtual circuits*. If the entry in field PARM is NUMPRIO, NUMPVCS or NUMSVCS, enter data in this refinement. If the entry in field PARM is NUMPRIO, enter the number of virtual circuits with high priority. The value must be less than the total number of virtual circuits entered. The number of circuits entered is protocol NUMPVCS + protocol NUMSVCS. If the user does not specify protocol NUMPVCS or NUMSVCS, the entry for protocol NUMPRIO must be less than 3.

MPCLINK (continued)

Field descriptions for conditional datafill (Sheet 19 of 20)

Field	Subfield	Entry	Explanation and action
	NUMVCS (continued)		The default value is 0. If the entry in field PARM is NUMPVCS, enter the number of permanent virtual circuits (PVC) on the link. If the system does not configure SVCs, you can configure a maximum of 255 PVCs. The default value is 3 if the user does not enter data in parameter NUMPVCS or subfield NUMSVCS. If the user specifies parameter NUMSVCS, the default value for parameter NUMPVCS is 0. The user enters a value that is not zero to specify parameter NUMSVCS. If the entry in field PARM is NUMSVCS, enter the number of SVCs configured on the link. The user can enter a value that is not zero for parameter NUMSVCS. If the user enters this value, the user must enter SVCDNA and SVCTYPE in subfield EXINFSEL. The user can configure a maximum of 255 SVCs. The combination of PVCs and SVCs cannot exceed 255.
	PERCENT	0 to 100	*Pool percentage*. If the entry in field PARM is POOLPCT, enter data in this refinement. Enter the percentage of total buffer pool resources for permanent virtual circuits (PVC). The default value is 0.
	STANDARD	BX25 CCITT80 or DDNBASIC	*Standard*. If the entry in field PARM is STANDARD, enter data in this refinement. This parameter specifies the protocol standards the system must follow for communications on the link. The SVC users must specify CCITT80. The PVC users do not need to enter data in this parameter. The default value is BX25.
	EXTRAINF	see subfield	*Extra information*. This refinement contains subfield EXINFSEL.

Field descriptions for conditional datafill (Sheet 20 of 20)

Field	Subfield	Entry	Explanation and action
	EXINFSEL	SVCDNA SVCTYPE	*Extra information selector*. If SVCs are not on the link, do not enter data in this subfield. Enter a maximum of two selectors. If less than two selectors are a requirement, enter $ to end the list. Enter SVCDNA for a data network address. Enter data in refinement DIGITS. Enter SVCTYPE for a switched virtual circuit (SVC) network. Enter data in refinement NETWORK. ***Note:*** If the user does not enter data in SVCs, the system configures a default of 0 for each type. The user must enter data in some permanent virtual circuits (PVC). If the user does not enter data in PVCs, the system rejects the tuple.
	DIGITS	0 to 9 (vector of a maximum 15 digits)	*Digits*. If the entry in subfield EXINFSEL is SVCDNA, enter data in this refinement. Enter the digits that define the network address. Additional data entries are not a requirement.
	NETWORK	DATAPAC, NTELPAC, DDN	*Network.* If the entry in subfield EXINFSEL is SVCTYPE, enter data in this refinement. Enter the SVC network format. Entries outside this range are not correct.

Datafill example

Sample datafill for table MPCLINK appears in the following example.

The example contains three tuples for table MPCLINK.

In the first tuple for MPC 5, link 2:

- MPC number is 5.
- Link number is 2.
- Link alarm is active.
- Protocol is X25ORIG.

MPCLINK (continued)

- Link enabling time is 35 min.
- Conversation enabling time is 35 min.

This tuple must contain the following parameters:

- Level 2 frame window is 7.
- Clock source is external.
- Packet acknowledgment timer is 180 s.
- Number of PVCs is 3.

> ***Note:*** The user does not enter data in protocol NUMSVCS. The entry in subfield EXTRAINF is $.

In the second tuple for MPC 3, link 3:

- The MPC number is 3.
- The link number is 3.
- The link alarm is active.
- The protocol is X25ORIG.
- The link enabling time is 55 min.
- The conversation enabling time is 55 min.

> ***Note:*** The user enters one parameter in this tuple. This parameter is the number of SVCs. The number of SVCs is 32.

Refinement NUMVCS for parameter NUMSVCS has a value that is not zero. The user must complete parameters SVCDNA and SVCTYPE in vector field EXTRAINF as follows:

- The SVC data network address is 3333333.
- The SVC type is DATAPAC.

In the third tuple for MPC 4, link 2:

- The MPC number is 4.
- The link number is 2.
- The link alarm is not active.
- The protocol is ASYNC.
- The link enabling time is 55 min.

This tuple must contain the following parameters:

- The number of bits per character is 7.
- Baud rate is 1200.
- Modem control is FULL.
- Number of stop bits is 1.
- Number of start bits is 1. Default values do not appear.
- Line mode is FULL.
- Parity is EVEN.
- The APLDEFN is NONE.

The link configuration parameters include outgoing end-of-message sequence. The outgoing end-of-message sequence is 0D0A19.

MAP example for table MPCLINK

```
 LINKKEY LINKALM
                                                          PRTCLDAT
-------------------------------------------------------------------------------
   0 3        Y
X2584 0 55 (CLKSRCE EXTERNAL) (ELECSPEC 512KV35) (L2WINDOW 7)
(L3DATA P256) (NODETYPE DTE) (SVCSWAY 16) (THRUPUT T48000) $
(SVCDNA 02580081) $

   1 2        Y
 X25ORIG 0 55 (NUMSVCS 15) (T20 5) (N2 10) (TINACTIVE 10) (TIDLE 120)
 (L2WINDOW 7) (L3WINDOW 2) (STANDARD CCITT80) $ (SVCDNA 0115021000)
 (SVCTYPE DDN) $

   2 3        Y
 X25ORIG 55  55 (NUMSVCS 32) (T20 5) (STANDARD CCITT80) (L2WINDOW 7)
 (L3WINDOW 2) (N2 10) (TIDLE 180) (T1 5) $ (SVCDNA 95800240)
 (SVCTYPE DATAPAC) $
```

Table history

NA07B

Additional warnings that L2WINDOW and L3WINDOW must be the same at both ends of the data link were added. Field SIZE previously contained this note. An office missed the note and caused call processing errors, malfunctions and lost revenue.

MPCLINK (end)

TELECOM 06

An explanation to enter data in field LINKALM in IOM MPC logs was added.

The baudrates B14400 and B28800 were added to subfield BAUDRATE for all protocols (X250RIG/X2580/X2584/ASYNC).

The 512KV35 was added to the subfield ELECSPEC for subfield PROTOCOL = X2580/X2584.

A new MAP display for MPCLINK was added.

NA04B

Entry DDN was added to subfield SVCTYPE refinement NETWORK for subfield PROTOCOL = X25ORIG.

BCS36

Refinement names for all parameters (field PARM) were renamed. The default values for timers T20, T21, T23, T25, and T26 were changed.

MPCLOGIN

Table name

Multiprotocol Controller Login Table

Functional description

Table MPCLINK stores the screening information to determine if the multiprotocol controller (MPC) card accepts incoming calls. The MPC accepts incoming calls for the MAP login.

Datafill sequence and meaning

You do not have to enter data in other tables before you enter data in table MPCLOGIN.

Enter data in tables MPC and MPCLINK before you enter data in table MPCLOGIN. The table control software does not enforce the requirement of data entry in table MPC and MPCLINK before data entry in table MPCLOGIN. You cannot access table MPCLOGIN unless you enter hardware in tables MPCLINK and MPC.

Changes to table MPCLOGIN do not affect users logged in when the changes occur. For example, a tuple can change in table MPCLOGIN. This change does not terminate the login session for the user that the tuple changes for. The changes occur at the next login.

Table size

0 to 64 tuples

The system allocates memory for 64 tuples in table MPCLOGIN.

Datafill

Datafill for table MPCLOGIN appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
INDEX		0 to 63	*MPCLOGIN index.* Enter the number for the index in table MPCLOGIN. The index number is only for MPCLOGIN. This number can appear once as a table index.
MANDL		see subfields	*MPCLINK index* This field contains subfields MPCNO and LINKNO.

MPCLOGIN (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	MPCNO	0 to 255	*Multiprotocol controller number*. Enter the MPC card number to log in to the MAP(maintenance and administration). This value must be a correct entry in table MPC.
	LINKNO	0 to 3	*Multiprotocol controller link number*. Enter the MPC link number to log in to the MAP. This value must be a correct entry in table MPCLINK.
CLINGDNA		see subfields	*Calling data network address*. This field contains subfields MPCMAPDNA and PROTCLID.
	MPCMAPDNA	0 to 9 (1 to 15 digits)	*MPC MAP data network address*. Enter an MPC MAP calling data network address assigned to the MPC card. Enter the link for MAP logins. If network addressing is not in use, enter $ to meet the requirements of the table editor.
	PROTCLID	0 to F (1 to 8 hexadecimal digits)	*Protocol identifier*. Enter the protocol identifier of the incoming call that uses the MPC for MAP login. This protocol identifier checks against a user logging on. The check determines if the user can use a MAP login. If protocol identification is not in use, enter $ to meet the requirements of the table editor.
USERDATA		see subfield	*MPCLOGIN user data*. This field contains subfield HEXASCII.

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	HEXASCII	ASCII, HEX, or NONE	*Hexadecimal ASCII*. Enter the field required with a correct refinement for password security on the MPC login process. Each tuple in table MPCLOGIN can only have one entry and refinement. Enter ASCII for ASCII digits. Enter data in refinement ASCIICHRS. Enter HEX for hexadecimal digits. Enter data in refinement HEXDIGITS. Enter NONE if password security is not a requirement. Additional datafill is not a requirement.
	ASCIICHRS	alphanumeric (1 to 12 characters)	*ASCII character password string*. If the entry in field USERDATA is ASCII, enter data in this refinement. Enter an ASCII character password for this login circuit.
	HEXDIGITS	0 to F (1 to 24 characters)	*Hex digit password string*. If the entry in field USERDATA is HEX, enter data in this refinement. Enter a hexadecimal character password for this login circuit. Additional data is not a requirement.

Datafill example

Sample datafill for table MPCLOGIN appears in the following example.

MAP example for table MPCLOGIN

```
INDEX MANDL        CLINGDNA PROTCLID                  USERDATA
_____________________________________________________________

    0   2 2       555551212 12345678   HEX          ABCDEFABCDEF
    1   2 3        55551212         $                      NONE

    2   3 2        88880505 01000000           ASCII  PASSWORD
    3   3 3               $        $                      NONE
```

MPCLOGIN (end)

Table history

BCS36

Subfield HEXASCII was added in BCS36.

MPCLSET

Table name

Multiprotocol Controller LINKSET

Functional description

Table MPCLSET allows the logical links of a multiprotocol controller (MPC) fast application to group in linksets for selective link transfers. Table MPCFASTA specifies the link connections as a collection of application name and MPC number, link number, and channel number (MLC).

Each linkset entry in table MPCLSET contains the application name. The linkset entry contains the linkset number for that application. The linkset entry contains the list of MLCs in that set.

Each application can have a maximum of 16 linksets. An application can have some links grouped in linksets and some links without sets. When a link failure occurs the links without sets do not receive a message transfer.

The user can enter links in different linksets. This action prevents link transfers. The MLCs for an application can appear in the same set. When this condition occurs the link selection and transfer is the like a table that does not contain data. If you remove an MLC from a linkset, the system transfers queued messages to a link in the same linkset. The user enters the MLC in another linkset for availability to a linkset application.

Subfields APPLID and SETNUM allow field LSETKEY to provide a two-part key for this table. Subfield APPLID contains the name of the application to which the linkset belongs. Subfield SETNUM contains the number assigned to each linkset within an application.

Field MLCLIST contains a vector of the MLCs in the application. The user places the vector in the linkset indicated by field LSETKEY. Each vector contains an MPC number, a link number, and a channel number. There can be a maximum of 16 MLCs in each linkset. The system does not allow duplicate MLCs in a linkset MLCLIST. Place a minimum of one MLC in the MLCLIST for each entry.

See table MPC for related information.

Datafill sequence and meaning

Table MPCFASTA must contain all application names and MLCs in table MPCLSET. The user must remove the table MPCLSET entries for applications or MLCs before the user can remove the table MPCFASTA entries.

MPCLSET (continued)

Before a user adds a new tuple to table MPCLSET, the user must enter correct MPCNOs in table MPC. The user must enter correct MPCLINKs in table MPCLINK. The user must enter correct RCERAPPL in table MPCFASTA.

Table size

Table MPCLSET requires 785 words of protected data store for each application entered. The system allocates the memory when an application enters the first entry in the table. The system removes memory when an application removes the last linkset of that application. The maximum amount of memory required is 785 words x 16 applications = 12.56K words.

Datafill

Datafill for table MPCLSET appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
LSETKEY		see subfields	*Linkset key*. This field contains subfields APPLID and SETNUM.
	APPLID	911RCER1, 911RCER2, 911RCER3, 911RCER4, 911RCER5, 911RCER6, ATT911AS, OPN911AS, ENH911AS, WLS911	*Application identification*. Enter the name of the MPC fast application to which the LINKSET belongs. This name must appear in field INDEX in table MPCFASTA.
	SETNUM	0-15	*Linkset number*. Enter the number assigned to each linkset in an application.
MLCLIST		see subfields	*MPC and link control vector list*. Enter all MLCs in the same sequence as the MLCs appear in table MPCTASTA with INDEX=911RCER(1-6). Table MPCTASTA determines the order of tries. This field contains subfields M, L, and C. The user can enter a maximum of 16 three-number sets that represent MLC. Separate each subfield with a single space. If the user requires less than 16 MLCs, end the list with a dollar sign ($). The MLCLIST contains one MPC, one MPC link, and one link channel entered in the following three subfields.

Field descriptions (Sheet 2 of 2)

Field	Subfield	Entry	Explanation and action
	M	0-255	*MPC*. Enter the number of the MPC.
	L	2 or 3	*Link*. Enter the number of the MPC link.
	C	1-255	*Channe*l. Enter the number the MPC link channel.

Datafill example

The following example of datafill for table MPCLSET contains four MPC fast applications. The 911RCER1 numbers 0 and 1 contain single linkset members, MPC 1 in 911RCER1 0 and MPC 2 in 911RCER1 1. The system does not transfer messages from the down link to an operational link when a link failure occurs.

The 911RCER3 number 0 contains the elements MPC 5 and MPC 6. The 911RCER3 number 1 contains the elements MPC 3 and MPC 4. The system switches messages queued for the down link to the operational link if a failure occurs on a link.

MAP example for table MPCLSET

```
LSETKEY                                          MLCLIST
_____________________________________________________________

911RCER1 0                                     (  1 2   1)$
ENH911AS 1                                     (  2 3   1)$
911RCER3 0                          (  6 2   1) (  5 3   1)$
WLS911   0                          (  4 2   1) (  3 2   1)$
```

MPHCON

Table name

Multiple Position Hunt Console

Functional description

Table MPHCON (MPH Console) specifies the characteristics of an individual console in an MPH group. Specifically, this information includes data related to each non-data link console in an MPH console group.

Information specified within this table includes the console number within an office, the MPH group to which the console belongs, the console number within the group, the number of lines supported by the console, and the position busy scan (SC) group.

Each console is physically capable of terminating 16 lines. The position busy SC points for all consoles that are on SC group 0. Each SC point is normally closed. An open condition indicates the console is busy.

An SC or SD point definition includes the specification of a normal state. In the datafill for the MPH tables, the normal state is defined as 0 or 1. Normal states also may be referred to as OPEN or CLOSED. OPEN is a value of zero (0). Closed is a value of one (1).

Datafill sequence and implications

Table MPHGRP must be datafilled before table MPHCON.

The following tables must be datafilled after table MPHCON:

- HUNTGRP
- HUNTMEM

Datafill

The following table lists datafill for table MPHCON.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
MPHCNUM		0 to 31	*MPH console number* Enter the console number within the office.
MPHGRP		0 to 31	*MPH group index* Enter the MPH group index.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
MPHCON		0 to 15	*MPH console index* Enter the console index within the MPH group.
MAXLINES		1 to 32	*Maximum number of lines* Enter the maximum number of lines the non-data link consoles can support.
PBSCGRP		0 to 255	*Position busy scan group* Enter the scan group from table SCGRP associated with the position busy indicator for this console.
PBSCPT		0 to 6	*Position busy scan group point* Enter the point in the position busy scan group which indicates the status of the console.
PBNORMST		0 or 1	*Normal state for position busy* If the SC point is open, the normal state is zero (0). If the SC point is closed, the normal state is one (1).

Datafill example

The following example shows sample datafill for table MPHCON.

MAP display example for table MPHCON

```
MPHCNUM MPHGRP MPHCON MAXLINES PBSCGRP PBSCPT PBNORMST
-------------------------------------------------------
      2     10      0       16       0      0        0
      4     10      1       16       0      0        0
```

MPHGRP

Table name

Multiple Position Hunt Group

Functional description

Table Multiple Position Console Hunt Group (MPHGRP) specifies the characteristics of a group of non-data link consoles.

Information specified within this table includes the number of consoles, the maximum queue length and overflow route of the call, the ringing threshold and recorded announcement or music, the night service scan (SC) point, and the calls waiting indicator SD point.

There can be a maximum of 32 MPH groups supported by table MPHGRP.

Table MPHGRP defines the characteristics common to all three consoles. When a call is placed in a queue, after 20 s it receives a recorded announcement or music as defined in table AUDIO, tuple AUDIO1 MPHQ.

SC and SD point definition includes the specification of a normal state. Either an OPEN or CLOSED condition is considered a normal state. The group assigned to the point represents the facility. OPEN is a value of zero (0). Closed is a value of one (1).

The Night Service SC point is normally closed. An open condition activates Night Service. The Calls Waiting SD point is normally open.

Datafill

The following table lists datafill for table MPHGRP.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
MPHGRP		0 to 31	*MPH console group number* Enter the MPHGRP number this console group is assigned.
NUMCONS		0 to 6	*Number non-data link consoles* Enter the number of non-data link consoles in this console group. This field determines how many tuples are allocated in table MPHCON for this MPH group.

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
CQLENGTH		0 to 32	*Calls in queue* Enter the number of calls that can be queued for this MPH group in the Central Office.
CQOVRTE		EXTERNAL_ROUTE_ID	*Central office overflow queue route* Enter EXTERNAL_ROUTE_ID. The route for calls overflowing the central office queue are directed here.
NSSCGRP		0 to 255	*Night Service scan group* This field specifies the scan group in table SGGRP associated with Night Service.
NSSCPT		0 to 6	*Night Service scan point* Specifies the scan point in the Night Service Scan Group associated with Night Service.
NSNORMST		0 to 1	*Normal state Night Service* The normal state of the Night Service SC point.
CWSDGRP		0 to 255	*Calls Waiting SD group* This field specifies the point in the Calls Waiting SD group which is activated when calls are present in the central office queue for this MPH group.
CWSDPT		0 to 6	*Calls Waiting SD point* This field specifies that point in the Calls Waiting SD group that is activated when calls are present in the central office queue for this MPH group.
CWNORMST		0 to 1	*Normal state Calls Waiting SD point* The normal state of the Calls Waiting SD point.
AUDIO		Y or N	*Audio option* Enter Y (yes) if this MPH group has audio option and datafill refinements AUDTHRSH and AUDIOIDX. Otherwise, enter N (no); no additional refinements must be datafilled.

MPHGRP (end)

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
AUDTHRSH		0 to 60	*Audio threshold* If the entry in field AUDIO is Y, datafill this refinement. Enter the time, in seconds, that a call spends in the queue, until it is connected to the audio announcement.
AUDIOIDX		alphanumeric	*Audio index* If the entry in field AUDIO is Y, datafill this refinement. Enter the audio group to which the call is connected.

Datafill example

The following example shows sample datafill for table MPHGRP.

MAP display example for table MPHGRP

```
MPHGRP  NUMCONS  CQLENGTH   CQOVRTE  NSSCGRP NSSCPT NSNORMST
  CWSDGRP    CWSDPT  CWNORMST    AUDIO        AUDIODAT
_____________________________________________________________

   10        2          4   OFRT 30       0      0        0
      0         0        0    Y  20          AUDIO1
```

MQLIMITS

Table name

Maintenance Q Limits Table

Functional description

Table MQLIMITS stores the maintenance Q limits for the bit error rate test (BERT) line and test time of the BERT.

The Q limit is a predetermined test limit. The test passes when the value of a test result is less than or equal to the Q limit value. The test fails if the value exceeds the Q limit value.

You can perform a BERT from the trunk test position (TTP) level of the MAP (maintenance and administration position) terminal. The test can occur automatically from the automatic trunk testing (ATT) level of the MAP terminal.

Refer to the *Trunks Maintenance Guide* for more information on trunk testing.

Datafill sequence and meaning

You do not need to enter data in other tables before you enter data in table MQLIMITS.

Table size

0 to 10 tuples

Datafill

Datafill for table MQLIMITS appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
IDXKEY		see subfield	*Index key*. This field contains subfield MQKEY.
	MQKEY	0 to 9	*Maintenance Q limits table index*. Enter an index number from 0 to 9.
MQDATA		see subfields	*Maintenance Q data*. This field contains subfields TLTIME, BERQ, SLIPSQ, and ERSQ.

MQLIMITS (continued)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	TLTIME	0 to 15300	*Bit error rate test line test time*. Enter the length of the test time the BERT runs. Enter the time in minutes. You cannot stop a test in progress if the test originates from the ATT level of the MAP. The default value for this field is 15.
	BERQ	0 to 15	*Bit error rate Q limit*. Specify the Q limit for the test. The bit error rate is 1.0 X 10-*n*. The absolute exponent (*n*) is the number you specify. The default value for this field is 3.
	SLIPSQ	0 to 15	*Slips Q limit*. Specify the maximum number of slips allowed from the Q limit. The default value for this field is 3.
	ERSQ	0 to 999	*Percent of errored seconds*. Enter a number that indicates the maximum percentage of errored seconds. Enter the percentage in tenths of seconds (0.1 s). The percentage of errored seconds equals a specified equation. This equation is the number of errored seconds divided by the number of seconds the test runs, multiplied by 100. An entry of 10 equals to 1%. The default value for this field is 8 (0.8 s).

Datafill example

Datafill for table MQLIMITS appears in the following example.

The example contains a maintenance Q index of 0 that contains the default values.

MQLIMITS (end)

MAP example for table MQLIMITS

```
IDXKEY          MQDATA
_____________________________________________________________

     0    15  3  3  80
     1    15  3  3  80
```

MRSANAME

Table name

List of Multiunit Message Rate Area Names Table

Overview

The following table lists all the multiunit message rate (MUMR) services tables.

Multiunit message rate services tables

Table name	Table title
MRSANAME	List of Multiunit Message Rate Area Names table record
MUMRTAB	Multiunit Message Rate Screening table record
MUMRMBI	Multiunit Message Rate Message Billing Index (MBI) table record
CHARGTAB	Multiunit Message Rate Charge table record
TDCHLDY	Multiunit Message Rate Holiday table record
TDCSCHED	Multiunit Message Rate Day and Time Treatment table record

MUMR service can be used by an operating company to charge local calls that fall outside the flat-rate local calling area. Such calls are considered local as opposed to toll.

Feature BR0440 (Multiunit Message Rate Services) can be provided in a DMS-100 or DMS-100/200 switching unit provided the office is also equipped with the local automatic message accounting (LAMA) system with the new Bellcore formats.

Tables involved in multiunit message rate call

The following table lists the application of MUMR service and the field and table, or subtable, that each application is in.

Determining application of multiunit message rate services

Functions	Field	Table	Subtable
Identify local call prefix digit or digits and determine that a call is translated as a North American number.	PRTNM PRTNM various various	LINEATTR TRKGRP STDPRTCT STDPRTCT	- - STDPRT STDPRT
Determine that the digits received represent a valid North American number.	SNPA SNPA various	LINEATTR TRKGRP HNPACONT	- - HNPACODE
If the digits received represent valid North American number, determine that the called number is within the originator's local calling area.	SNPA LCANAME SNPA LCANAME various	LINEATTR LINEATTR TRKGRP TRKGRP LCASCRCN	- - - - LCASCR
If the called number is within originators local calling area determine that Multiunit Message Rate (MUMR) service applies: message rate service area (MRSA) not = NIL.	MRSA MRSA MRSA MRSA	LINEATTR TRKGRP MRSANAME MRSANAME	----

Determining the message billing index

The following table shows the tables to be accessed for determining the message billing index (MBI).

Determining the message billing index (MBI) for the MUMR call

Functions	Field	Table	Subtable
If MUMR service applies, determine the MBI applicable to the originator's MRSA and the called number.	MRSA MRSA MRSA MUMR NAME DGLID XMUM RMBI MBI	LINEATTR TRKGRP MRSANAME MUMRTAB MUMRTAB MUMRTAB MUMRMBI	- - - - - - -

MRSANAME (continued)

Additional MUMR call functions

Additional functions for a MUMR call depend on the type of the originator station (noncoin, coin, or hotel/motel) and the operating company's accounting office procedures as follows.

Type of originator station

Originator station type	See page
Noncoin	4
Coin	5
Hotel/motel	7

LAMA tape record

The local automatic message accounting (LAMA) tape record provides information on detailed and bulk billing, timed billing, and recording MBI.

Detailed and bulk billing

Bulk billing reduces the amount of information that must be generated by the automatic message accounting (AMA) system. This is achieved by omitting the called number from the LAMA tape record. The operating company's accounting office programs make use of the message billing index (MBI) to calculate the charges on a MUMR call.

Refer to the the following table to see how the call code field is set on the LAMA tape record to communicate if detailed billing is required.

Timed billing

Refer to the following table to see how the call code field is set on LAMA tape depending on whether timing is required.

LAMA tape record

Detailed	Timed	RECRDMBI	Call code	Resulting field settings on LAMA tape with MBI
Y	Y	Y	001	Y
N	Y	Y	002	Y
Y	N	Y	003	Y
N	N	Y	004	Y
Y	Y	N	005	Y

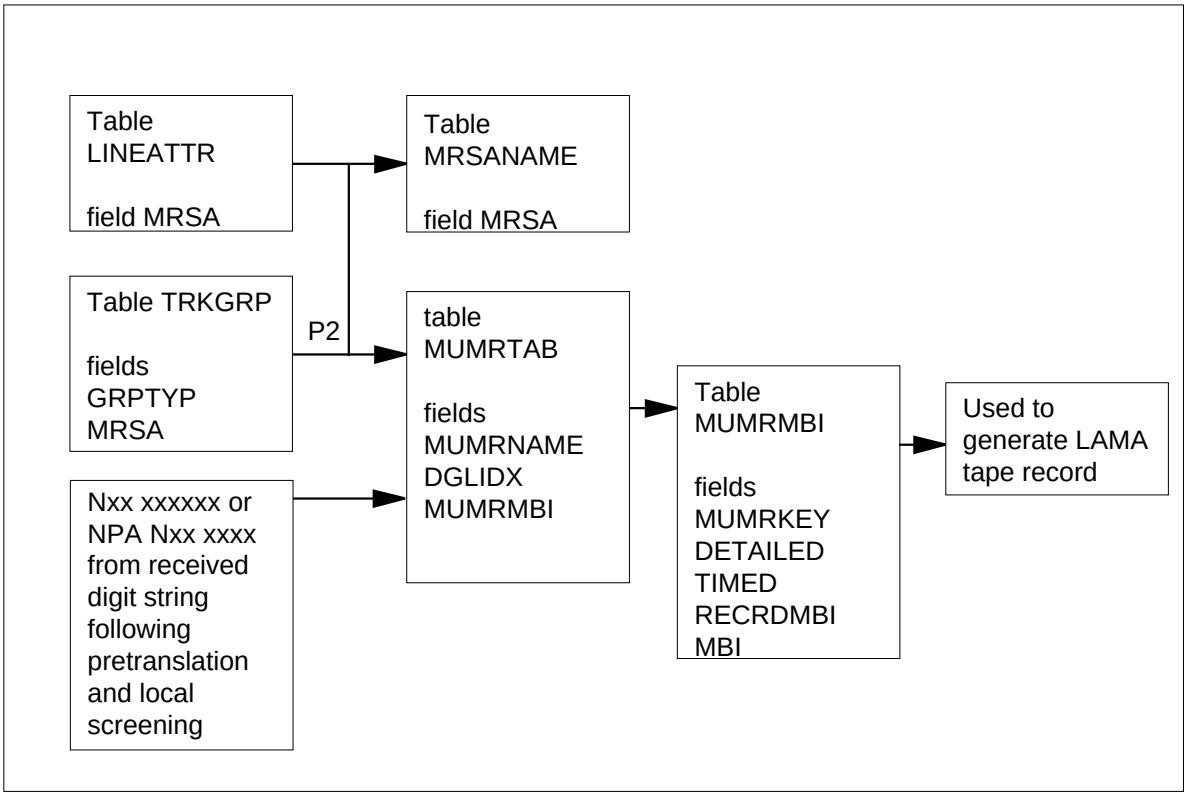
Noncoin

The following table lists additional MUMR call functions for non-coin originator.

Additional MUMR call functions for non-coin originator

Functions	Field	Table	Subtable
If MUMR service applies to a non-coin subscriber (single or two-party line or two-way private branch exchange [PBX] trunk group type P2), generate LAMA tape record.	DETAILED TIMED RECRDMBI	MUMRMBI	-

MUMR block diagram for noncoin originator



MRSANAME (continued)

Coin

The following table lists additional MUMR call functions for coin originator.

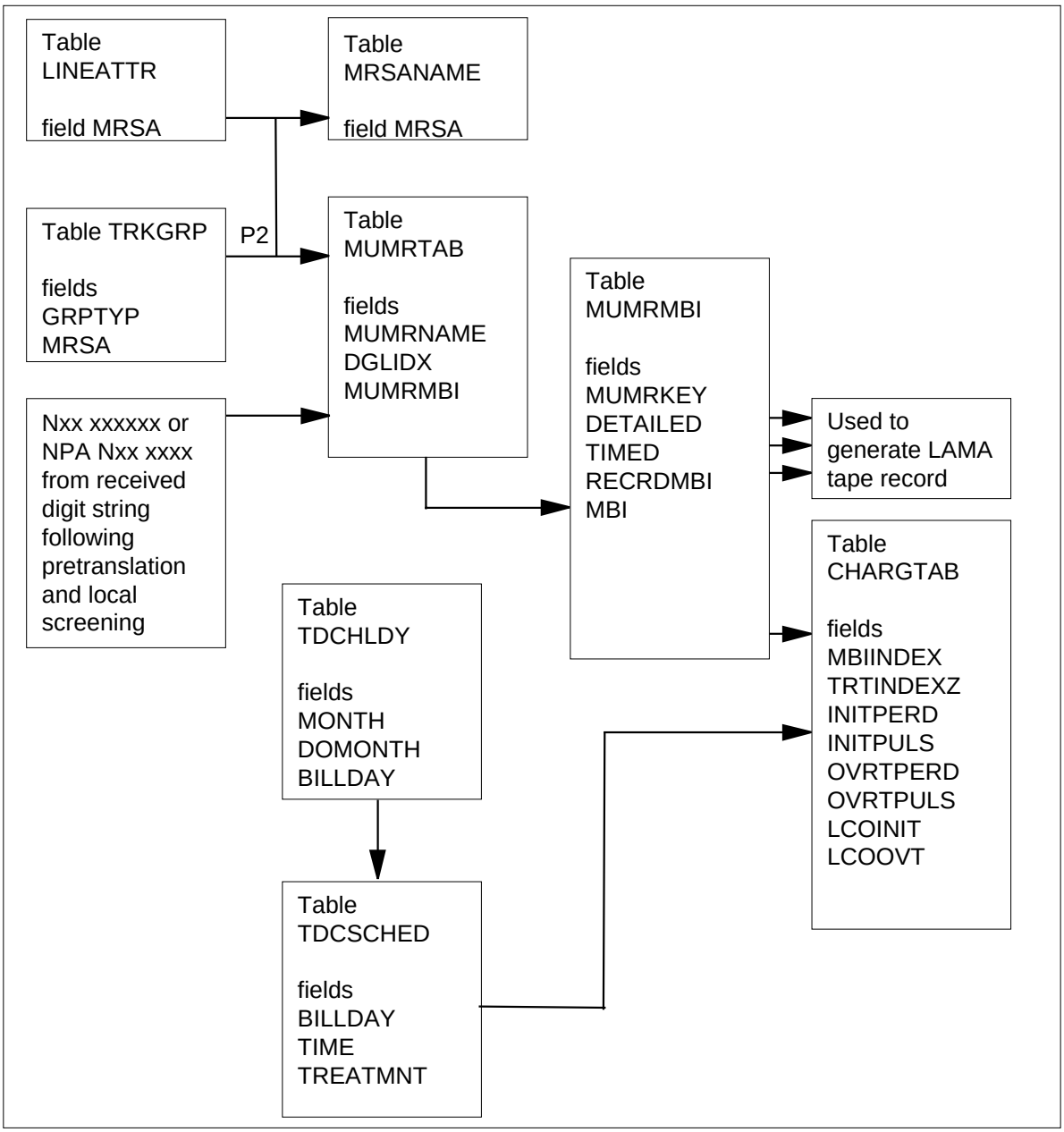
Additional MUMR call functions for coin originator (CCF or CDF)

Functions	Field	Table	Subtable
Determine that feature 3R0372 (Local Coin Overtime [LCO]) charging is enabled: field PARMNAME is set to LOCAL_COIN_OVERTIME_FEATURE. If	PARMVAL	OFCOPT	-
MUMR service applies on call, the following two office parameters are ignored: LOCAL_COIN_INIT_TIME LOCAL_COIN_OVER_TIME.	PARMVAL PARMVAL	OFCOPT OFCOPT	- -
If MUMR service applies to a call from a coin, coin first (CCF) or coin dial-tone first (CDF) box, collect coins at prescribed intervals after determining the treatment index that applies for the day and time of call using office parameter RATE_PERIOD_SPECIFIC_BILLING.	TIMED MONTH DOMONTH BILLDAY BILLDAY TIME TREATMENT PARMVAL MBIINDEX TRTINDEX LCOINIT LCOOVT	MUMRMBI TDCHLDY TDCHLDY TDCHLDY TDCSCHED TDCSCHED TDCSCHED OFCSTD CHARGTAB CHARGTAB CHARGTAB CHARGTAB	- - - - - - - - - - - -

If a call originates from a CDF or CCF coin subscriber in an office with the LCO enabled, (office parameter LOCAL_COIN_OVERTIME_FEATURE is set to Y), the initial and overtime periods for other than MUMR calls are the same for any local coin overtime call as specified in office parameters LOCAL_COIN_INIT_TIME and LOCAL_COIN_OVER_TIME in table OFCVAR.

For MUMR local coin calls, the initial and overtime periods are obtained in fields LCOINIT and LCOOVT, table CHARGTAB and are a function of the MBI and the day and time of the call.

MUMR block diagram for coin originator



MRSANAME (continued)

Hotel/motel

The following table lists additional MUMR call functions for hotel/motel with register meter.

Additional MUMR call functions for hotel/motel register meter

Functions	Field	Table	Subtable
If MUMR service applies to a call from a hotel or motel, generate the LAMA tape record.	DETAILED TIMED RECRDMBI	MUMRMBI	-
Determine if the originator has feature Remote Meter Pulsing (RMP).	various	LENFEAT	-
Determine if fieldn PARMNAME is set to HM_INTERPULSE_TIME and HM_PULSE_TIME.	PARMVAL	OFCSTD	-
Determine the number of surcharge pulses to be returned to the remote meter.	SURCHG	LENFEAT	-
Determine the initial and overtime period and the number of pulses that apply for the month, day of month, and time of day using field PARMNAME set to RATE_PERIOD_SPECIFIC_BILLING.	DOMONTH BILLDAY BILLDAY TIME TREATMNT PARMVAL MBIINDEX TRTINDEX INITPERD INITPULS OVRTPERD OVRTPULS	TDCHLDY TDCHLDY TDCSCHED TDCSCHED TDCSCHED OFCSTD CHARGTAB CHARGTAB CHARGTAB CHARGTAB CHARGTAB CHARGTAB	- - - - - - - - - - - -

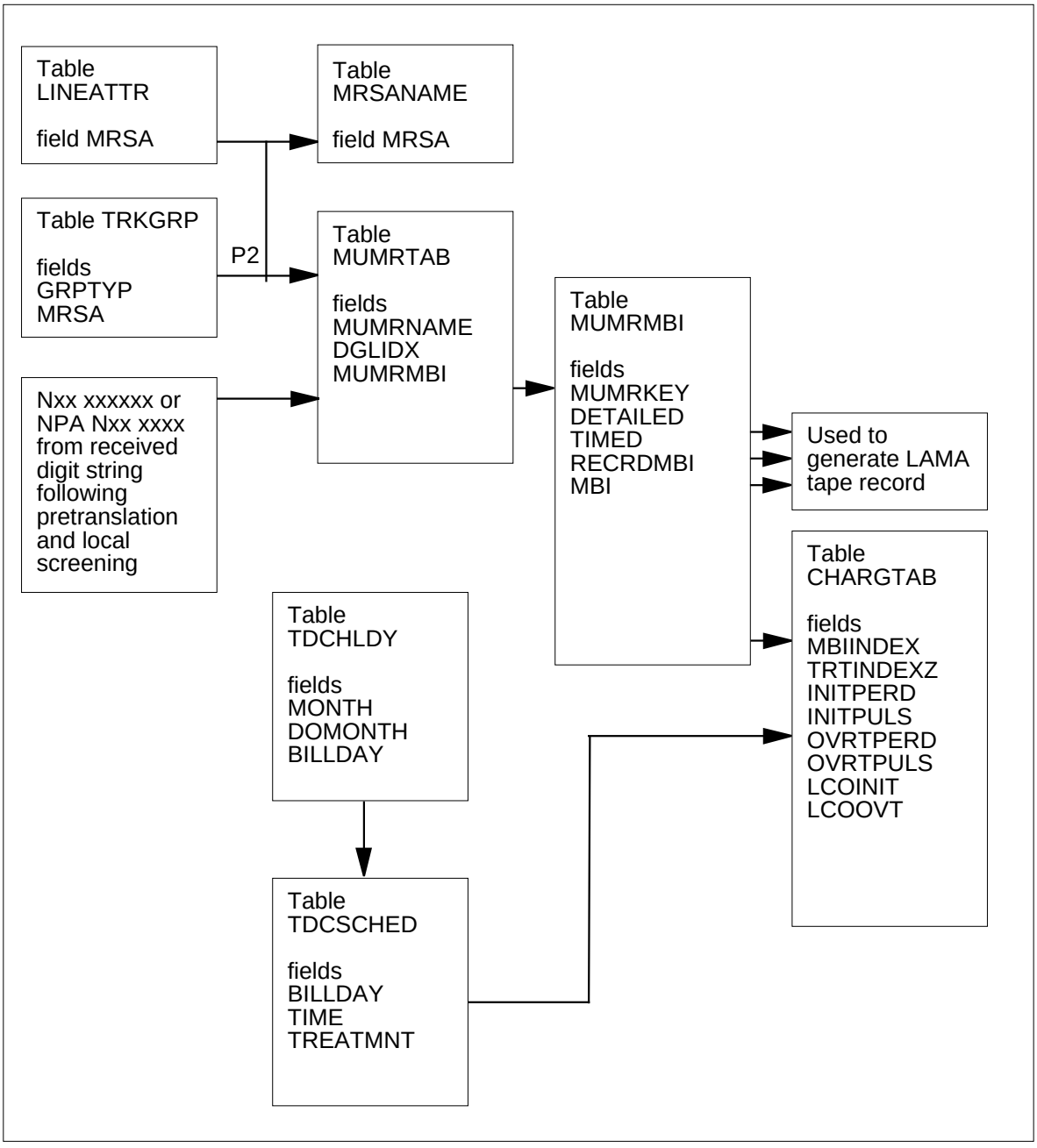
The following figure shows a block diagram of the multiunit message rate for hotel/motel originator.

MUMR block diagram for hotel/motel originator

The following figure shows a block diagram of the MUMR for hotel/motel originator with feature RMP.

MRSANAME (continued)

Multiunit message rate block diagram for hotel/motel originator with RMP



Functional description

Table MRSANAME lists the Multiunit Message Rate (MUMR) service area (MRSA) names.

The MRSA is used as part of the key into table MUMRTAB (field KEY subfield MUMRNAME), from table LINEATTR (field MRSA) and from table TRKGRP (field GRPVAR.MRSA) when the trunk group type is P2.

Datafill sequence and implications

There is no requirement to datafill other tables prior to table MRSANAME.

Table size

0 to 4095 tuples

Datafill

The following table lists datafill for table MRSANAME.

Field descriptions

Field	Subfield or refinement	Entry	Explanation and action
MRSA		alphanumeric (up to 8 characters)	*Multiunit Message Rate service area name* Enter the name of an MRSA. The total number of Multiunit Message Rate (MUMR) service area names cannot exceed 127. Entries that are referenced in field MRSA in table LINEATTR, and field MUMRNAME in table MUMRNAME cannot be deleted until the associated tuples in tables LINEATTR and MUMRTAB are deleted.

Datafill example

The following example shows sample datafill for table MRSANAME.

MAP display example for table MRSANAME

```
MRSA
_____________________________________________

OTWA
NEP
BAR
HULL
```

MSBINV

Table name

Message Switch and Buffer Inventory Table

Functional description

Table MSBINV contains all inventory data except for peripheral side (P-side) information and external frame information.

See table MSBPSINV for P-side information and external frame information.

Datafill sequence and meaning

- Enter data in the following tables before you enter data in table MSBINV:
- PMLOADS
- NETWORK
- ENCDINV

- Enter data in table MSBINV before you enter data in the following tables:
- IPMLINV
- MSBPSINV
- STINV

Table size

0 to 5 tuples

Datafill

Datafill for table MSBINV appears in the following table.

Field descriptions (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MSBNAME		see subfields	*Message switch and buffer name*. This field contains the subfields XPMTYPE and MSBNO.
	XPMTYPE	MSB6, MSB7, RCC2, SRCC, or TRCC	*Peripheral module type*. Enter the peripheral module (PM) type as follows: • Enter MSB6 to specify common channel interoffice signaling no. 6 (CCIS6). Enter MSB7 to specify Common Channel Signaling 7 (CCS7). • Enter RCC2 to specify remote cluster controller 2. • Enter SRCC to specify SONET remote cluster controller. • Enter TRCC to specify Turkish remote cluster controller. This controller is for licensee use only.
	MSBNO	0 to 9	*Message switching buffer number.* Enter the PM number. Entries out of this range are not correct.
FRTYPE		MC6M MC7M MLNK MS6E or MS7E	*Frame type* Enter the frame type for the PM equipment as follows: • MC6M (Meridian cabinet CCS6 module the DMS-250 uses) • MC7M (Meridian cabinet CCS7 module the DMS-300 and international DMS-250 uses) • MLNK (Meridian CCS7 link module the MSL-100 compact uses) • MS6E (message switching 6 equipment frame) • MS7E (message signaling 7 frame)

MSBINV (continued)

Field descriptions (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
FRNO		0 to 511	*Frame number* . Enter the frame number for the PM.
SHPOS		0 to 77	*Shelf position* . Enter the position of the lowest MSB shelf on the frame that contains the two MSB shelves.
FLOOR		0 to 99	*Floor*. Enter the floor number of the PM.
ROW		A to H J to N P to Z AA to HH JJ to NN or PP to ZZ	*Row*. Enter the row number for the PM equipment frame.
FRPOS		0 to 99	*Frame position*. Enter the frame position of the PM equipment frame.
EQPEC		6X07AA 6X07AB 6X32AA 6X32AB 6X32BB 6X32CD 6X3201 or 6132SA	*Equipment product engineering code*. Enter the product engineering code (PEC) of the PM as follows: • 6X07AA (Message switch buffer 6 Comm CP kit), rated manufacturer discontinued (MD), 6X07AB (message switch and buffer 6 shelf) replaces 6X07AA • 6X32AA (message switch and buffer 7 module) • 6X32AB (MS7B common circuit packs) • 6X32BB (MS7B common circuit pack-EBI): entered in international switches if the MSB7 has a 6X44DA timeswitch card • 6X32CD (MSB7 common CP) • 6X3201 (STA7 shelf assembly): for use in frame type MLNK • 6132SA Only the Austrian version of the MSB7 uses this code.

Field descriptions (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
LOAD		alphanumeric (vector of a maximum of eight characters)	*Load*. Enter the load name for the issue of PM software. See table PMLOADS for the appropriate release for a list of available names.
CSLNKTAB		see the subfields	*C-side link table*. If the DMS switch has junctored network (JNET) modules, enter data in subfields NMPAIR and NMPORT. If the DMS switch has an enhanced network (ENET), enter data in subfields ENSHELF, ENSLOT, ENLINK, and ENDS30.
	NMPAIR	0 to 31	*Network module pair number*. Enter the network link for the MSB. This link corresponds to C-side links 0 t o 15 of the MSB. Enter the pairs in order to complete the vector.
	NMPORT	0 to 63	*Network module port*. Enter the network ports that correspond to the preceding links. Enter the ports in order to complete the vector.
	ENSHELF	0 to 7	*Enhanced network shelf number*. Enter the network shelf for the MSB. This shelf corresponds to the C-side link of the MSB.
	ENSLOT	10 to 16 and 25 to 32 (for ENET 128K, BCS34 and higher) or 13 to 19 (for ENET 16K)	*Enhanced network crosspoint slot number*. Enter the network crosspoint slot. Entries out of this range are not correct.
	ENLINK	0 to 18	*Enhanced network link on crosspoint card*. Enter the network link that corresponds to the preceding slot.
	ENDS30	0 to 15	*Enhanced fiber network link on crosspoint card*. Enter the network link. Entries must be in ascending order, starting with 0. Duplicate entries cannot occur.

MSBINV (continued)

Field descriptions (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
HWCLASS		C6, C7, D, N6, or N7	*CCS signaling terminal control data.* Enter a vector to a maximum of four of the following designations of Common Channel Signaling hardware types: • C6 (CCIS6) • C7 (CCS7) • D (digital private network signaling system [DPNSS]) • N6 (CCITT no. 6) • N7 (CCITT no. 7) Separate each entry with a single space. If you enter less than four designations, end the list with a $ (dollar sign). Entries out of the range for this field are not correct.
STCLOADS		alphanumeric (a maximum of eight characters)	*Signaling terminal control loads.* Enter a vector to a maxium of two STC loads. If you enter less than two loads, end the list with a $.

Field descriptions (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
OPTCARD		CONTINU-ITY, CMR5, CMR6, CMR7, CMR13, CMR15, CMR16, CMR17, CMR18, CMR19, CPA15, CPA17, CSMMSG, CTR13, CTR15, DCTAX78, ECC_300, ECC_600, ECC_1200, ECC_2400, ECC_4800, ECC_9600, ETSBX69, ISP4, ISP, NE2X10AA, NT6X28, NT6X28AB, NT6X28BA, NT6X44EA, RAM6X69,	*Optional card*. Enter a vector to a maximum of ten optional card types. If you enter less than ten cards, end the list with a $.

MSBINV (continued)

Field descriptions (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
		STR8, STR11, STR16IC, STR16OG, STR17IC, STR17OG, TONE6X79, UTR6, UTR7, UTR8, UTR9, UTR10, UTR11, UTR14, UTR15, UTR16, UTR17, or UTR18	*Optional card*. Enter a vector to a maximum of ten optional card types. If you enter less than ten cards, end the list with a $.
PECS6X45		6X45AA 6X45AB 6X45AC 6X45AD 6X45AE 6X45AF 6X45BA 6X45BB 6X45BC 6X45CA 6X45DA or 6X45EA	*Product engineering codes of 6X45 processor cards*. Enter the PECs of the processor cards that correspond to the 6X45 with the minimum firmware abilities. Enter the PEC for unit one before the PEC for unit two.

Datafill example

This example is for a DS30 link.

MAP example for table MSBINV

```
MSBNAME
      FRTYPE   FRNO   SHPOS   FLOOR   ROW   FRPOS   EQPEC   LOAD
                                                              CSLNKTAB
                                                               HWCLASS
                                STCLOADS
                                                              OPTCARD
                          PECS6X45
_____________________________________________________________________________

MSB7  0
       MS7E      0    18       1     D     0 6X32AA  MC7XB07
             ( 0  13  0  0) ( 0 13  1  0) ( 0 13 2  0) ( 0 13 3 0) $
                                                          ( C7) $
                           ( M7CQA01)$
                                                       (  MSG6X69)$
               6X45AE 6X45AE
```

Additional information

Information on dump and restore procedures for table MSBINV appears in this section.

Dump and restore

From BCS34, field ENSLOT is an enumerated type. Conversion of the numeric slot is a requirement. The only correct enumerated slots are 10, 11, 12, 13, 14, 15, 16, 25, 26, 27, 28, 29, 30, 31, and 32.

Numeric slots from 10 to 16 and 25 to 32 receives a conversion. All other slots are not correct.

Field ENDS30 defaults to 0 for DS30 links. Use the old link entry to convert DS30 link entries from BCS33 or earlier to BCS34 or later. The addition of ENDS30 field occurs to the old link entry with a value of 0.

From BSC34 16 link entries replace each fiber link entry from BCS33 or earlier. The values of fields ENSHELF, ENSLOT, and ENLINK remain the same. The ENDS30 values for each of the 16 entries range from 0 to 15. The entries must be in ascending order of ENDS30.

A dump and restore from BCS33 or lower to BCS34 or later versions can occur. If this event occurs and a tuple contains the value MSG6X69 in field OPTCARD, delete the tuple.

MSBINV (end)

You can perform a dump and restore from BCS33 or lower to BCS34 or later versions. The system must encounter MSG6X69 or RAM6X69 values for a tuple in table MSBINV when you perform this action. If the system does not encounter these values, the system reports an error condition.

MSBPSINV

Table name

Message Switch and Buffer P-Side Inventory Table

Functional description

This table contains the following data assignment for each bay associated with a message switch and buffer (MSB) unit:

- peripheral module (PM) type and number
- signaling terminal controller (STC) extension frame type, number, and location
- if the frame type is MS6E or MC6M, the table contains the modem extension frame type, number, floor, row, and position

The only operation that table MSBPSINV allows is tuple changes. When the addition of a tuple occurs in table MSBINV the system adds tuples to table MSBPSINV. The system deletes tuples from table MSBPSINV when deletion occurs to tuples that correspond in table MSBINV.

See table MSBINV for related information.

Datafill sequence

Enter data in table MSBINV before you enter data in table MSBPSINV.

Table size

0 to 5 tuples

The system dynamically allocates memory when the system allocates blocks in table MSBINV.

MSBPSINV (continued)

Datafill

Datafill for table MSBPSINV appears in the following table.

Field descriptions (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
MSBNAME		see the subfields	*Message switch and buffer name*. This field contains the subfields XPMTYPE and MSBNO.
	XPMTYPE	MSB6, MSB7, RCC2, SRCC, or TRCC	*Peripheral module type*. Enter the MSB PM type as follows: • Enter MSB6 to specify Common Channel Signaling 6 (CCS6) • Enter MSB7 to specify Common Channel Signaling 7 (CCS7). • Enter RCC2 to specify remote cluster controller 2 (RCC2). • Enter SRCC to specify SONET remote cluster controller. • Enter TRCC to specify Turkish remote cluster controller. ***Note 1:*** Types RCC2 and SRCC are not correct entries. ***Note 2:*** Type TRCC is for licensee use only.
	MSBNO	0 to 9	*Message switch and buffer number*. Enter the PM number.
MSBDATA		see the subfield	*Message switch and buffer data*. This field contains of subfield FRTYPE.
	FRTYPE	MS6E, MS7E, MC6M, MC7M, MLNK	*Frame type*. Enter the frame type for the PM equipment.

Field descriptions (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	EXTFRAME	Y or N	*Extension frame*. If equipment of the STC extension occurs, enter Y (yes). If the STC extension is not equipped, enter N (no). If the entry in this field is Y, and the entry in field FRTYPE is MS6E or MC6M, enter data in the following fields: • EXTFRTYPE • EXTFRNO • EXTFRPOS • MODFRTYPE • MODFRNO • MODFLOOR • MODROW • MODFRPOS The entry in this field can be Y. The entry in field FRTYPE can be MS7E, MC7M, or MLNK. When this two conditions apply, enter data in the following fields: • EXTFRTYPE • EXTFRNO • EXTFRPOS

MSBPSINV (continued)

Field descriptions (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	EXTFRTYPE	ST6E or ST7E	*Signaling terminal controller extension frame type*. If the entry in field EXTFRAME is Y, enter the STC extension frame type as follows: • Enter ST6E to specify the CCS6 extension frame, including STC modules 4 to 9. ***Note:*** An MS6E or MC6M frame is a requirement before use of ST6E can occur. • Enter ST7E to specify the CCS7 extension frame, including STC modules 4 to 9. ***Note:*** An MS7E or MC7M frame is a requirement before use of ST7E can occur.
	EXTFRNO	0 to 511	*Extension frame number*. If the entry in field EXTFRAME is Y, enter the frame number of the preceding frame type.
	EXTFRPOS	0 to 99	*Extension frame position*. If the entry in field EXTFRAME is Y, enter the bay position of the PM equipment frame.
	MODFRTYPE	DME	*Modem extension frame type*. The entry in field EXTFRAME can be Y. The entry in field FRTYPE can be MS6E or MC6M. When these conditions apply, enter the frame type for the PM equipment. ***Note:*** Frame MS6E or MC6M is a requirement.
	MODFRNO	0 to 511	*Modem extension frame number*. The entry in field EXTFRAME can be Y. The entry in field FRTYPE can be MS6E or MC6M. When these conditions apply, enter the frame number of the preceding frame type.

Field descriptions (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	MODFLOOR	0 to 99	*Modem extension floor*. The entry in field EXTFRAME can be Y. The entry in field FRTYPE can be MS6E or MC6M. When these conditions apply, enter the floor for the PM equipment frame.
	MODROW	A to H J to N P to Z AA to HH JJ to NN or PP to ZZ	*Modem extension row*. The entry in field EXTFRAME can be Y. The entry in field FRTYPE can be MS6E or MC6M. When these conditions apply, enter the row for the PM equipment frame.
	MODFRPOS	0 to 99	*Modem extension frame position*. The entry in field EXTFRAME can be Y. The entry in field FRTYPE can be MS6E or MC6M. When these conditions apply, enter the bay position of the PM equipment frame.
	STCMODS	0 to 9 (vector of a maximum of 10 entries)	*STC modules*. For MS6E, MC6M, MS7E, and MC7M, DME STC values 0 and 1 are correct. For ST6E and ST7E, values 4 to 9 are correct. Enter the values without a blank space between the values. Do not end the vector with a $.

Datafill example

Datafill examples for table MSBPSINV appear in the following section.

Assignments for two MSB PMs appear in the following example. The two MSB PMs are MSBO and MSB1. When you enter data in table MSBINV, the system automatically adds default tuples to table MSBPSINV. This process appears in the following example:

In the example the following conditions apply:

- the MSB0 does not have an STC extension frame.
- the MSB1 has an STC extension frame and a modem extension frame.

MSBPSINV (continued)

MAP example for table MSBPSINV

```
MSBNAME    MSBDATA
_______________________________________________________________

 MSB6  0    N                                    01
 MSB6  1    N                                    01
```

In the following example, the second tuple has an extension frame. You must modify the tuple. To modify the tuple, use the CHANGE command.

MAP example for table MSBPSINV

```
MSBNAME                                 MSBDATA
_______________________________________________________________

MSB6  1    Y  ST6E  2  18  DME  3  01  C  18  0145
```

The current status of the entries in table MSBPSINV appears in the following example.

MAP example for table MSBPSINV

```
MSBNAME                                        MSBDATA
_____________________________________________________________
MSB6  1     N                                          01
MSB6  1    Y  ST6E  2  18  DME  3  01  C  18  0145
```

MSCDINV

Table name

Message Switch Cards Inventory (MSCDINV) Table

Functional description

Table MSCDINV allows changes to the characteristic information of the system cards, bus extension unit, and interface units. This table also allows addition and deletion to interface units.

The owner message switch (MS) node requires the system cards to operate. The system adds the system cards to table MSCDINV with the addition of the MS to table MSINV. The system deletes the system cards from table MSCDINV with the deletion of the MS node from table MSINV. You cannot change the slot positions of the system cards. The only field that changes for these cards is the product engineering codes (PEC).

The owner extension shelf requires the bus extension units to operate. The system fixes the slot positions of these extension units. Operating company personnel cannot change these slot positions. The only field that you can change for these units is the PECs.

The interface cards have different configurations. These configurations provide for the different functions of the interface cards. Each DS30 and nonchannelized DS512 card contains one interface unit. The channelized DS512 card can have multiple interface units. These units link together serially to form a daisy chain. Each unit contains a main card, front card and a card subordinate to the front card. Each unit also contains a back card. A chain can also have a maximum of eight cards that link together. For noninterface units, the front and back cards can have functions that do not relate to each other.

The enhancement of the mechanism to modify chain tuples can now update the PECs for current chains. To modify chain tuples, the following rules apply:

- You can change a PEC to a compatible PEC for any card in a chain without affecting other cards. A compatible PEC is a PEC that can be present on a chain with the current PECs.
- A change to the the head card to an incompatible PEC causes the change to occur to all the relevant cards in the chain.
- A PEC can change to an incompatible PEC at the head card only.

To enter the different configurations, each tuple contains a card selector. Single-system cards are cards with functionally linked front and back cards.

The clock is an example of a single-system card. Double-system cards have front and back cards that are functionally different.

The system treats single interface cards as independent cards. The entry of multiple interface cards is in the order in which they appear on the shelf.

Datafill sequence and meaning

You must enter data in table MSINV before you enter data in table MSCDINV.

Table size

20 to 52 tuples

Table MSCDINV contains 20 default tuples. Each default MS contains 10 default tuples. Each shelf has 26 cards. You can enter data in all 26 cards.

The range of front and back card PECs appears in the following tables.

Range of front card PECs (field FRONTPEC) (Sheet 1 of 2)

Card type	Range of values
CHAIN	NT9X17AB, NT9X17AC, NT9X17AD, NT9X17BA, NT9X17BB, NT9X17CA, NT9X17DA
CLOCK	NT9X53AA, NT9X53AB, NT9X53AC, NT9X53AD
CMIC	NT9X17AA, NT9X17AC, NT9X17AD, NT9X17BB
DS30	NT9X17AA, NT9X17AB, NT9X17AC, NT9X17AD NT9X17BA, NT9X17BB, NT9X17CA, NT9X17DA
DS512	NT9X17AA, NT9X17AB, NT9X17AC, NT9X17AD NT9X17BA, NT9X17BB, NT9X17CA, NT9X17DA
MAPPER	NT9X15AA
MEMORY	NT9X14AA, NT9X14BA, NT9X14BB, NT9X14DA, NT9X14DB
MSP	NT9X13AA, NT9X13DA, NT9X13DB, NT9X13DC, NT9X13DD, NT9X13NA, NT9X13NB
PBUS	NT9X49CA, NT9X49CB, NT9X49CC
TBUS	NT9X49BA

MSCDINV (continued)

Range of front card PECs (field FRONTPEC) (Sheet 2 of 2)

Card type	Range of values
TBUSACC	NT9X52AA
TFI	NT9X73BA

Range of back card PECs (field BACKPEC)

Card type	Range of values
CHAIN	NT9X20BB, NT9X62BA, NT9X62CA, NT9X62CB
CLOCK	NT9X54AA, NT9X54AB, NT9X54AC, NT9X54AD, NT9X54AE
CMIC	NT9X20AA, NT9X62BA, NT9X62CA
DS30	NT9X23AA, NT9X23AB, NT9X23BA, NT9X25AA NT9X25BA, NT9X69AA, NT9X69BA
DS512	NT9X20AA, NT9X20BA, NT9X20BB, NT9X25AA, NT9X25BA, NT9X62BA, NT9X62BB, NT9X62CA, NT9X62CB
MAPPER	does not apply
MEMORY	does not apply
MSP	NT9X26AA, NT9X26AB
PBUS	NIL
TBUS	NIL
TBUSACC	NIL
TFI	NT9X79BA

Note: For MAPPER and MEMORY, a back card does not apply. Leave field BACKPEC blank.

Datafill

Datafill for table MSCDINV appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
MSCDKEY		see the subfields	*Message switch card key*. This field contains the subfields MSNUM, SHELFNUM, and CARDNUM.
	MSNUM	0 to 1	*Message switch number*. Enter the MS number.
	SHELFNUM	0 to 3	*Shelf number*. Enter the shelf number of the card slot.
	CARDNUM	1 to 26 (see note)	*Card position number*. Enter the card position number relative to the other 26 cards. The MS has a total of 38 physical slots. Power converter cards occupy the first 6 and last 6 physical slots. The physical slots 7 to 32 are for the MS cards. These slots have the numbers 1 to 26. For example, for physical slot 7, enter 1 in this subfield. For physical slot 32, enter 26. ***Note:*** For the SuperNode SE MS, the range of subfield CARDNUM must be between 1 and 13. Physical slots 7 and 32 = CARDNUM 13. Physical slots 19 and 20 = CARDNUM 1. Only position 12 can contain TFI card datafill. Positions 5 to 9 can contain interface card datafill.
SLOTINFO		see subfield	*Slot information*. This field contains the subfield CARDTYPE.
	CARDTYPE	CHAIN CLOCKCMIC DS30 DS512 MAPPER MEMORY MSP PBUS TBUS TBUSACC TFI FBUS	*Card type*. Enter the type of card. If MSP contains the entry NT9X13DD, the corresponding memory card, NT9X14DB, is optional. If the entry is CHAIN, datafill fields PROTOCOL and HEADPECS.

MSCDINV (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	PROTOCOL	DS30 or DS512	*Protocol*. If the entry in subfield CARDTYPE is CHAIN, enter the protocol of the chain. If the entry is not chain, leave the field blank. ***Note:*** The DS30 is not a correct entry for operating company use.
	HEADPECS	see subfields	*Head product engineering code*. This field contains the subfields FRONTPEC and BACKPEC.
	FRONTPEC	alphanumeric (8 characters)	*Front product engineering code*. Enter the PEC for the front card. See the following table for a list of correct PECs for each card type.
	BACKPEC	alphanumeric (8 characters)	*Back product engineering code*. Enter the PEC for the back card. Seethe following table for a list of correct PECs for each card type. If the entry in subfield CARDTYPE can be CHAIN or DS512, and the entry in this subfield can be NT9X62BA, NT9X62CA, NT9X62CB, or NT9X62BB. When this condition occurs, enter the data in refinement NUMLINKS. If the entry in subfield CARDTYPE is MAPPER or MEMORY, leave this subfield blank.
	NUMLINKS	1, 2, or 4	*Number of links*. The entry in subfield CARDTYPE can be CHAIN or DS512, and the entry in field BACKPEC can be NT9X62BA, NT9X62CA, NT9X62CB, or NT9X62BB, enter the number of links on the NT9X62 card in the chain that receives data. The entry is as follows: • If the entry in subfield BACKPEC is NT9X62BA, enter 1, 2, or 4. • If the entry in subfield BACKPEC is NT9X62CA or NT9X62CB, enter 1 or 2. • If the entry in subfield BACKPEC is NT9X62BB, enter 4.

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	BODYPECS	see subfields	*Body product engineering code*. This field contains the subfields BODYFRONTPEC and BODYBACKPEC. Enter a maximum of seven groups of front PEC and correct back PEC that form the body of the chain. Enter $ at the end of the field.
	BODYFRONTPEC	alphanumeric (8 characters)	*Body front product engineering code*. Enter the PEC of the front card that connects to the body section of the chain.
	BODYBACKPEC	NT9X25AA or NT9X25BA	*Body back product engineering code*. Enter the PEC of the back card that connects to the body section of the chain. The last card in a chain must be NT9X25BA.

Datafill example

Sample datafill for table MSCDINV appears in the following example.

MSCDINV (end)

MAP example for table MSCDINV

```
MSCDKEY                                          SLOTINFO
_____________________________________________________________________

0  0  1                                          TBUSACC NT9X52AA NIL
0  0  2                                          CLOCK NT9X53AA NT9X54AB
0  0  3                                          MSP NT9X13DB NT9X26AA
0  0  4                                          MEMORY NT9X14DB
0  0  5                                          MAPPER NT9X15AA
0  0 20                                          DS30 NT9X17AA NT9X23BA
0  0 21                                          DS30 NT9X17AA NT9X23BA
0  0 22                                          DS30 NT9X17AA NT9X23AA
0  0 23                                          DS30 NT9X17AA NT9X23AA
0  0 24                                          CMIC NT9X17AA NT9X20AA
0  0 25                                          CMIC NT9X17AA NT9X20AA
0  0 26                                          PBUS NT9X49CB NIL
1  0  1                                          TBUSACC NT9X52AA NIL
1  0  2                                          CLOCK NT9X53AA NT9X54AB
1  0  3                                          MSP NT9X13DB NT9X26AA
1  0  4                                          MEMORY NT9X14DB
1  0  5                                          MAPPER NT9X15AA
1  0 20                                          DS30 NT9X17AA NT9X23BA
1  0 21                                          DS30 NT9X17AA NT9X23BA
1  0 22                                          DS30 NT9X17AA NT9X23AA
1  0 23                                          DS30 NT9X17AA NT9X23AA
1  0 24                                          CMIC NT9X17AA NT9X20AA
1  0 25                                          CMIC NT9X17AA NT9X20AA
1  0 26                                          PBUS NT9X49CB
```

Table history

TEL07

The PEC NT9X62BB was added to the range of values for card type DS512 in the table, "Range of back cards" and in the table, "Field descriptions."

CSP04

The PEC NT9X62CB was added to the range of values for card type CHAIN and DS512 in the table ,“Range of back cards" and in the table , “Field descriptions."

CSP02

The PEC NT9X53AD was added to range of values for card type CLOCK in table 1 in section "Functional description."

MSCIDMAP

Table name

Mobile Switching Center Identifier Mapping

Functional description

Table MSCIDMAP maps Mobile Switching Center Identifiers (MSCIDs) to TLDN pool identifiers from Table TOPSTLDN. This allows the customer to control TLDN allocation on a per-MSC basis.

An MSCID consists of a Market ID (16 bit value) and a Switch ID (8 bit value). Less than 1,000 market IDs are in use today in the United States, so the datafill of Table MSCIDMAP is held to a maximum of 4,096 different market IDs to limit data store usage.

Table MSCIDMAP is used on TOPS IS-41 calls only as MSCIDs are IS-41-specific. Table MSCINMAP is used for GSM calls.

The market ID can be any number from 0 to 65,535. The switch ID can be any number from 0 to 255. The total number of tuples which can be datafilled is 32,767 (the DMS maximum for any table).

Wildcarding can be used to limit datafill in this table. The market ID and switch ID can be wildcarded as follows:

Options

MSCIDMAP wildcard datafill

Market	Switch number	Explantion
$	$	Match all MSCIDs not otherwise found in table. This combination, when datafilled, serves as the default.
<0 to 65535>	$	Match exact market ID and any switch number, providing exact MSCID and exact switch number is not datafilled.
<0 to 65535>	<0 to 255>	Match exact market ID and switch number
$	<0 to 255>	Not allowed. A wildcard market ID cannot be datafilled with a specific switch number.

MSCIDMAP (continued)

TLDN selection

The list of pools for a given MSCID indicates the order in which the pools are searched for an idle TLDN. If no idle TLDNs are found in the first pool, the DMS examines the next pool in the list.

This allows the customer to set aside groups of TLDNs for certain groups of MSCs. Such datafill reduces shared store contention, for example, XA-Core blocking during periods of heavy traffic.

The holding time for a TLDN is very short (under a second), so if a pool of 100 or 200 TLDNs is datafilled first in the pool list, it is possible that TLDNs in later pools in the list will only be used in periods of extremely heavy traffic.

Datafill sequence and meaning

Enter datafill into table TOPSTLDN before table MSCIDMAP.

Table size

Minimum 0 tuples, maximum 32,767 tuples (128 words per tuple). The store is allocated and deallocated dynamically.

When the first tuple is entered, 20K words are allocated.

Subsequent tuples cause store allocation as follows:

- 150 words when a new market ID is added with a specific switch number
- 32 words when a new market ID is added with a wildcard switch number

These estimates include an allocation of one word for each pool ID in each tuple.

An addition of an existing market ID with a specific switch number results in allocation of one word per pool in the tuple.

Store is deallocated when tuples are deleted. All store is deallocated when the last remaining tuple is deleted.

MSCIDMAP (continued)

Datafill

The table that follows lists datafill for table MSCIDMAP.

Field descriptions

Field	Subfield	Entry	Explanation and action
MSCIDKEY	MARKETID	{0 to 65535}, or '$'	Market Identifier (vector). First part of two-part key MSCIDKEY.
	SWITCHNO	{0 to 255}, or '$'	Switch Number (vector). Second part of two-part key MSCIDKEY.
POOLLIST		Vector of up to 255 TLDN pool identifiers from Table TOPSTLDN	Temporary local directory number pool list. Pointer to TLDN pool IDs in Table TOPSTLDN. The order of the pool list in this field indicates the order in which TLDN pools are searched for an idle TLDN. If the first pool in the list contains 100-200 TLDNs, it is likely that the remaining pools in the tuple will never be needed by the MSCs associated with the tuple. This is because the holding time of a TLDN is very short (normally under one second).

Datafill example

The figure that follows shows sample datafill for table MSCIDMAP.

MAP display example for table MSCIDMAP

```
TABLE: MSCIDMAP
MSCIDKEY         POOLLIST
------------------------
$ $     (0) (1) (2) (3) $
64 $            (0) (2) $
64 5            (0) (1) $
312 444     (0) (1) (2) $
312 445     (0) (1) (2) $
```

Additional information

During dump and restore from SN06 to a later load, Table TOPSTLDN is checked. If it has any entries, they are restored using sequential pool IDs beginning with pool ID 0. A single tuple with the key {$, $} is then added to

MSCIDMAP (end)

Table MSCIDMAP. This is a wildcard tuple which matches all MSCIDs and which contains all pool IDs from restored Table TOPSTLDN.

Table history

SN07 (DMS)

Table MSCIDMAP was created in SN07 (DMS) under feature A00003687.

MSCINMAP

Table name

Mobile Switching Center Identifier Number Mapping

Functional description

Table MSCINMAP maps Mobile Switching Center Identification Numbers (MSCINs) to TLDN pool identifiers from Table TOPSTLDN. This allows the customer to control TLDN allocation on a per-MSC basis.

An MSC Identification Number is a directory number of up to18 digits. It is also called an MSC Address. MSCINs are GSM-specific, so table MSCINMAP is used on TOPS GSM calls only. Table MSCIDMAP also introduced for SN07 release is used on IS-41 calls.

Table MSCINMAP is a digilator table that allows the first few digits of an MSCIN to be datafilled and the tuple will match all MSCINs beginning with those digits. A single tuple can therefore provide a TLDN pool ID list for hundreds or thousands of MSCs.

Table MSCINMAP allows the datafill of up to 4,096 unique TLDN pool ID lists. It should be noted that two lists containing the same pool IDs but in a different order are considered to be different lists.

The following table shows how digilator matching works:

MSCINMAP to MSCIN matches

MSCINMAP key	MSCIN matches
6	Matches all MSCINs (up to 18 digits) beginning with the digit 6.
919	Matches all MSCINs (up to 18 digits) beginning with the digits 919.
704991	Matches all MSCINs (up to 18 digits) beginning with the digits 704991.
2022201111	Matches all MSCINs (up to 18 digits) beginning with the digits 2022201111.

MSCINMAP (continued)

TLDN selection

The list of pools for a given MSCIN indicates the order in which the pools are searched for an idle TLDN. If no idle TLDNs are found in the first pool, the DMS examines the next pool in the list.

This allows the customer to set aside groups of TLDNs for certain groups of MSCs. Such datafill reduces shared store contention, for example, XA-Core blocking during periods of heavy traffic.

The holding time for a TLDN is very short (under a second), so if a pool of 100 or 200 TLDNs is datafilled first in the pool list, it is possible that TLDNs in later pools in the list will only be used in periods of extremely heavy traffic.

Datafill sequence and meaning

Enter datafill into table TOPSTLDN before table MSCINMAP.

Table size

Minimum 0 tuples, maximum 32,767 tuples (128 words per tuple). The store is allocated and deallocated dynamically.

When the first tuple is entered, 16K words are allocated.

Subsequent tuples cause store allocation as follows:

- One word per pool ID when a new TLDN pool ID list is added or a tuple change results in a new list.
- No store increase when a tuple is added with a TLDN pool ID list identical to one already in the table. To be identical, two lists must contain the same pool IDs in the same order.
- Store is deallocated when tuples are deleted. All store is deallocated when the last remaining tuple is deleted.

Datafill

The table that follows lists datafill for table MSCINMAP.

Field descriptions

Field	Subfield	Entry	Explanation and action
MSCINKEY		vector up to 18 digits	Digilator table key
POOLLIST		vector of up to 255 TLDN pool identifiers from Table TOPSTLDN	Temporary local directory number pool list. Pointer to TLDN pool IDs in Table TOPSTLDN. The order of the pool list in this field indicates the order in which TLDN pools are searched for an idle TLDN. If the first pool in the list contains 100-200 TLDNs, it is likely that the remaining pools in the tuple will never be needed by the MSCs associated with the tuple. This is because the holding time of a TLDN is very short (normally under one second).

Datafill example

The figure that follows shows sample datafill for table MSCINMAP.

MAP display example for table MSCINMAP

```
TABLE: MSCINMAP
MSCINKEY         POOLLIST
------------------------
619    (0) (1) (1000) (10) $
919320         (1)  (1000) $
2022201111              (0) $
2032201111   (10) (1)  (0) $
2042201111              (0) $
```

Table history

SN07 (DMS)

Table MSCINMAP was created in SN07 (DMS) under feature A00003687.

MSFWLOAD

Table name

Message Switch Firmware Load Table

Functional description

Table MSFWLOAD contains the name of the firmware load file for each firmware downloadable message switch (MS) product engineering codes (PEC). Table MSFWLOAD also contains the name of the device that contains the file.

The command LOADCD has a default file and device parameters. The switch uses the file name and device associated with the PEC of the card downloaded as the default file and device parameters.

Only the following interface cards are firmware downloadable:

- NT9X17CA (DMS-bus 128-port card)
- NT9X17DA (message switch 64-port card)
- NT9X17BB (DMS-bus 32-port card)

Datafill sequence and meaning

You do not need to enter data in other tables before you enter data in table MSFWLOAD.

Table size

1 to 32 tuples

Datafill

Datafill for table MSFWLOAD appears in the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
PECODE		see subfield	*Interface product engineering code*. This field consists of subfield NAME.
	NAME	NT9X17BB NT9X17CA NT9X17DA	*Name*. Enter the the PEC of the interface card.

MSFWLOAD (end)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
DEV		alphanumeric (1 to 16 characters)	*Device name*. Enter the name of the device where the firmware load file resides.
FILENAME		alphanumeric (one to eight characters)	*Firmware load file name*. Enter the file name of the firmware load file.

Datafill example

Sample datafill for table MSFWLOAD appears in the following example.

MAP example for table MSFWLOAD

```
  PECODE              DEV FILENAME
_____________________________________________________

NT9X17CA      D000PMLOADS  MPF36CJ
NT9X17DA      D000PMLOADS  MPF36CJ
NT9X17BB      D000PMLOADS  MPF36CJ
```

Table history

BCS36

Subfield NAME was added in BCS36.

MSGRTE

Table name

PRA Facility Message Routing Table

Functional description

Table MSGRTE provides for the networking of features on PRA trunks. Table MSGRTE is used for the routing and processing of PRA facility messages. This table does not establish call connections.

Table MSGRTE determines if the message terminates on the current switch or is sent to another switch. This is done through the use of the origination and destination information elements. The destination can be either LOCAL or a PRA D-channel that transmits the message to the next switch for further routing.

Datafill sequence and implications

The following tables must be datafilled before table MSGRTE.

- NETNAMES
- TRKMEM
- C7RTESET
- SPECCONN

All network names in this table must already exist in table NETNAMES.

To datafill a DPNSS selector, a source ISUP trunk CLLI must be specified along with a DPNSS selector, and the ISUP trunk CLLI must exist in tables TRKGRP and TRKSGRP. Only one DPNSS selector is allowed per tuple.

Table size

The table size is dynamic.

MSGRTE (continued)

Datafill

The following table lists datafill for table MSGRTE.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
MSGRTKEY		see subfields	*Message route key* This is the key to table MSGRTE and consists of subfields NETID and DIGRANGE.
	NETID	alphanumeric	*Network identifier* Enter the network name. The network name must be datafilled in table NETNAMES prior to being entered in table MSGRTE.
	DIGRANGE	see subfields	*Digit range* This field consists of subfields FROMDIGS and TODIGS.
	FROMDIGS	alphanumeric (vector of up to 11 characters, 0 to 9, B to F, or N)	*From digits* Enter the digit or digits translated. If the entry represents a block of consecutive numbers, enter the first number of the block.
	TODIGS	alphanumeric (vector of up to 11 characters, 0 to 9, B to F, or N))	*To digits* If FROMDIGS represents a block of consecutive numbers, enter the last number in the block. Otherwise, the entry is equal to field FROMDIGS.

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
MSGRTRES		MSGRTSEL	*Message route result* Enter the list of routes used to transmit messages. Up to four routes can be datafilled.
	MSGRTSEL	DPNSS, GTT, LOCAL, PRA, SCREEN, or SS7	*Message route selector* Enter the route type. Enter DPNSS if TCAP NRAG messages are sent over DPNSS virtual trunks. Enter LOCAL if the message terminates on this switch. Enter PRA if the message is routed out on a specified PRA-D channel. Enter SCREEN if the message is screened and does not route further. Enter SS7 if a the message is routed over a specific SS7 route set.

MSGRTSEL = DPNSS

If the entry for field MSGRTSEL is DPNSS, datafill the following subfields.

Field descriptions for conditional datafill (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ISUPTRK	alphanumeric (up to 16 characters)	*Common language name* Enter the ISUP trunk CLLI name. ***Note:*** The CLLI name must correspond to a valid ISUP CLLI datafilled in table TRKGRP and table TRKSGRP.
	DELDIGS	0 to 15	*Delete digits* Enter the number of deleted digits from the destination address in the message routing information.

MSGRTE (continued)

Field descriptions for conditional datafill (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	PREDIGS	numeric or N (vector of up to 11 characters)	*Prefix digits* Enter the digit string prefixed to the destination address in the message routing information.
	OPTIONS	NEWNET	*DPNSS options* Enter the list of optional parameters for the DPNSS selector. ***Note:*** NEWNET is the only option currently supported.
	OPTION	NEWNET	*DPNSS option* Enter NEWNET.
	NETNAME	INTECNET or PUBLIC	*New Network name* Enter the new network name used to replace the network identifier in the destination address in the message routing information. Enter either INTECNET or PUBLIC. ***Note:*** The new network name must already exist in table NETNAMES.

MSGRTSEL = GTT

If the entry for field MSGRTSEL is GTT, datafill the following subfields.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	GTT_INDEX	alphanumeric (1 to 16 characters)	*Global title type name* Enter the title type name as defined in table C7GTTYPE.

MSGRTSEL = PRA

If the entry for field MSGRTSEL is PRA, datafill the following subfields.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	TRKCLLI	alphanumeric (1 to 16 characters)	*Trunk common language location identifier* Enter the trunk CLLI name.
	DELDIGS	0 to 15	*Delete digits* Enter the number of deleted digits from the destination address in the message routing information.
	PREDIGS	vector of up to 11 characters (0 to 9, B to F, or N)	*Prefix digits* Enter the digit string prefixed to the destination address in the message routing information.
	OPTIONS	NEWNET or NEWTOR	*PRA options* Enter NEWNET for a new network and datafill subfield NETNAME. Enter NEWTOR for a new type of route and datafill subfield TYPEOFRT.
	NETNAME	INTECNET or PUBLIC	*Network name* Enter either INTECNET or PUBLIC.
	TYPEOFRT (BCS36-)	PUB or PVT	*Type of route* Enter PUB for a public route. Enter PVT for a private route.

MSGRTE (continued)

MSGRTSEL = SS7

If the entry for field MSGRTSEL is SS7, datafill the following subfields.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	DPC	alphanumeric (1 to 16 characters)	*Destination point code* Enter the CLLI name.
	DELDIGS	0 to 15	*Delete digits* Enter the number of deleted digits from the destination address in the message routing information.
	PREDIGS	numeric or N (vector of up to 11 digits)	*Prefix digits* Enter the digit string prefixed to the destination address in the message routing information.
	OPTIONS	NEWNET	*SS7 options* Enter NEWNET.
	NETNAME	INTECNET or PUBLIC	*Network name* Enter either INTECNET or PUBLIC.

Datafill example

The following example shows sample datafill for table MSGRTE.

MAP display example for table MSGRTE

```
                          MSGRTKEY
                                                  MSGRTRES
________________________________________________________________
PUBLIC       6137223      6137224
(PRA   K2KDTI64CLLP1  4           N NEWTOR PVT)$
```

Table history

UK002

The following changes were made:

- expanded datafill implications
- corrected field name MSGRTESEL to read MSGRTSEL
- added DPNSS explanation to field MSGRTSEL
- corrected field name SUPTRK to read ISUPTRK
- added field OPTION for MSGRTSEL = DPNSS conditional datafill
- expanded explanation for refinements OPTIONS, OPTION, and NETNAME for MSGRTSEL = DPNSS conditional datafill
- added N to range of values for subfield PREDIGS for MSGRTSEL = DPNSS conditional datafill

CSP02

Message route selector ISMDI and its refinements were removed.

BCS36

The following changes were made:

- added entry NEWTOR to field OPTIONS
- added new field TYPEOFRT

MSILINV

Table name

Message Switch Inter-MS Link Inventory Table

Functional description

Table MSILINV defines inter-message-switch links. These links provide greater messaging reliability in the DMS-bus.

The frame transport system (FTS) messaging software uses the interlinks. The software uses these interlinks to direct messages across DMS message switches (MS) at the DMS-bus protocol level.

The software must use the interlinks if a DMS-100 contains link peripheral processor (LPP) cabinets. These cabinets have application specified units (ASU) that use feature package NTXH77AA (Channelized Access on LPP/LIS). Feature package NTXH77AA allows an LPP connection to a DMS junctored network (JNET) or enhanced network (ENET) that uses DS30 links. The method that feature package NTXH77AA replaces the previous method. In the previous method, channel banks connect the ASUs to the public switching network.

An additional path for messaging improves system reliability. This path is for use when one or more node message ports are not operational. The FTS software can detect message points that do not function. The FTS software can rate messages with the MS interlinks. Before, the system lost the message if a path was not available.

See table MSCDINV for related information.

Datafill sequence and meaning

You must enter data in tables MSINV and MSCDINV before you enter data in table MSILINV.

Table size

0 to 2 tuples

Datafill

Datafill for table MSILINV appears in the the following table.

Field descriptions (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
IMSL		see subfield	*Inter-message-switch link*. The field contains subfield LINKNO.
	LINKNO	0 to 1	*Message switch interlink number*. Enter the link number of the interlink to define. One MS shelf pair can have a maximum of two links defined. The addition of link 0 must occur before the addition of link 1.
SHELFNO		0 to 3	*Message switch shelf number*. Enter the number of the MS shelf where the interlink resides. For most DMS SuperNodes, shelf 0 is present. All MS shelves have MS 0 and MS 1 planes.
CARDNO		6 to 23	*Message switch card number*. Enter the number of the MS card where the interlink resides. For example, if you select card 5, card 5 of MS 0 and card 5 of MS 1 link together.
INFO		see subfields	*Message switch interlink information*. This field contains subfields PROTOCOL and PORTNO.

MSILINV (continued)

Field descriptions (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	PROTOCOL	DS30 DS512 SR128 or SR256	*Messaging protocol*. Enter the messaging protocol for the MS interlink. Enter data in subfield PORTNO.
	PORTNO	0 to 15	*Message switch port number*. Enter the number of the MS port that the interlink uses. For DS512 protocol, the only correct entry is 0. For DS30 protocol, the correct entries are 0 to 15. ***Note:*** For four-port DS30 MS cards, the only correct entries are 0 to 3. For SR128 the correct entries are 0 to 3. For SR256 the correct entries are 0 or 1.

Datafill example

An example of datafill for table MSILINV appears in the example below. The example defines two interlinks.

Link 0 connects card 6, port 12 on MS shelf 0, MS 0, to card 6, port 12 on MS shelf 0, MS 1. Link 0 performs this connection with DS30 protocol.

Link 1 connects card 10, port 0 on MS shelf 0, MS 0, to card 10, port 0, on MS shelf 0, MS 1. Link 1 performs this connection with DS512 protocol.

MAP example for table MSILINV

```
IMSL SHELFNO CARDNO     INFO
_____________________________________________________________

   0       0    6       DS30 12
   1       0    10      DS512 0
```

Table history

BCS35

Values SR256 and SR128 were added to field PROTOCOL in BCS35.

MSINV

Table name

Message Switch Inventory Table

Functional description

Table MSINV contains message switch (MS) location and characteristic information. The table allows operating company personnel to change the characteristic information of the default MS nodes. This table allows operating company personnel to add and delete optional MS nodes.

The DMS switch requires the default MS nodes to operate. The default MS nodes are MS 0 and 1. The addition of these nodes to table MSINV occurs during the first data entry. Operating company personnel cannot delete these nodes from the table. Operating company personnel can change the location, product engineering codes (PEC), load name, and extension shelves of the nodes only.

The optional MS nodes increase the message handling capacity of the DMS-100E switch. At the start, this additional capacity is not a requirement. The system does not allow the entry of the optional MS nodes.

Each tuple in table MSINV contains a required and an optional part. The required part contains the identity, location, and PECs of the MS. The required part contains the version and edition of the MS software loaded in the MS.

The optional part contains information about shelves available for the MS. The number of shelves depends on the size of the office.

Datafill sequence and meaning

You do not need to enter data in other tables before you enter data in table MSINV.

Table size

2 tuples

Datafill

Datafill for table MSINV appears in the following table.

Field descriptions (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
MSINVKEY		see subfield	*Message switch inventory key*. This is the key field to table MSINV. This field contains subfield MSNUM.
	MSNUM	0 to 1	*Message switch number*. Enter the MS number.
FLOOR		0 to 99	*Floor*. Enter the floor where the frame is. The default value for this field is 0.
ROW		A to H J to N P to Z AA to HH JJ to NN or PP to ZZ	*Row*. Enter the row position on the floor where the frame is. The default value for this field is A.
FRAMEPOS		0 to 99	*Frame position*. Enter the position of the frame in the row. The default value for this field is 0.
FRTYPE		CMDC DNPC DPCC MCCM MCOR or SCC	*Frame type*. Enter the name of the frame type as follows: • CMDC to specify a computing module duplex cabinet • DNPC to specify a dual network packaged core • DPCC to specify a dual-plane combined core cabinet • MCCM to specify a Meridian cabinet core module • MCOR to specify a computing module mixed core cabinet • SCC to specify SuperNode combined core cabinet The default value for this field is SCC. Entries out of the range indicated for this field are incorrect.

MSINV (continued)

Field descriptions (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
FRAMENO		0 to 511	*Frame number*. Enter the number of the frame type. The default value for this field is 0.
FRINFO		see subfield	*Frame information*. This field contains subfield FRAMEPEC.
	FRAMEPEC	NT7X26AA NT9X01BA NT9X01MB NTMX42BA NTNX20AA	*Frame product engineering code*. Enter the PEC that corresponds to the frame type entry in field FRTYPE. If the entry in field FRTYPE is CMDC or DPCC, enter NT9X01BA. The NT9X01BA is the Dual-plane combined core cabinet. If the entry in field FRTYPE is DNPC, enter NT7X26AA. The NT7X26AA is the Dual network package core. If the entry in field FRTYPE is MCCM, enter NTNX20AA. The NTNX20AA is the Meridian cabinet core module. If the entry in field FRTYPE is MCOR, enter NTMX42BA. The NTMX42BA is the CM-mixed core cabinet. If the entry in field FRTYPE is SCC, enter NT9X01MB. The NT9X01MB is the SuperNode SE cabinet. The default value for this field is NT9X01MB.
	SHELF0	see subfields	*Shelf zero*. This field contains subfields SHELFPEC and SHELFPOS.

Field descriptions (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	SHELFPEC	NT9X0470 NT9X04AA NTRX1501	*Shelf product engineering code*. Enter the PEC for the MS shelf as follows: • NT9X0470 (combined message switch shelf assembly) • NT9X04AA (message switch shelf) • NTRX1501 (mini message switch shelf assembly) The default value for this field is NT9X0470.
	SHELFPOS	0 to 77	*Shelf position*. Enter the mounting position for shelf 0. The acceptable values are 0, 13, 26, and 39. The default value for this field is 39. Entries out of the range indicated for this field are incorrect.

Datafill example

Sample datafill for table MSINV appears in the following example. Four possible assignments associated with MS 0 and 1 appear in the example. The entry of two tuples, one tuple for each default MS, must occur.

MSINV (end)

MAP example for table MSINV

```
MSINVKEY FLOOR ROW FRAMEPOS FRTYPE FRAMENO FRINFO
_____________________________________________________________________


0        0     A   0        MCOR   0       NTMX42BA NTRX1501 39
1        0     A   0        MCOR   0       NTMX42BA NTRX1501 26

0        0     A   0        MCCM   0       NTNX20AA NTRX1501 39
1        0     A   0        MCCM   0       NTNX20AA NTRX1501 26

0        0     A   0        DNPC   0       NT7X26AA NTRX1501 39
1        0     A   0        DNPC   0       NT7X26AA NTRX1501 26

0        0     A   0        SCC    0       NT9X01MB NT9X0470 39
1        0     A   0        SCC    0       NT9X01MB NT9X01MB 26
```

MSRTAB

Table name

Message Storage and Retrieval System

Functional description

The system uses table MSRTAB as a database to store valid message storage and retrieval system identification (MSRIDs). The MRSNAME option provides the DMS-100 switch the ability to display the MSR name.

Datafill sequence and implications

The system requires no datafill of other tables prior to table MSRTAB. Table MSRTAB must be datafilled prior to table DNROUTE during dump and restore.

Table size

The system allocates table size from 0 to 255 tuples.

Datafill

The following table lists datafill for table MSRTAB.

Field descriptions

Field	Subfield	Entry	Explanation and action
MSRID		10-digit string Valid digits: 0–9	Message storage and retrieval system identification.
	BILLNUM	10-digit string Valid digits: 0–9	The BILLNUM option associates a billing number with an MSRID.
	BILLNUM_PREF	Y or N	Indicates whether to generate billing or not if activation/deactivation count is equal to zero. Default value is Y.
	MSRNAME	A string of up to 16 alphanumeric characters with no special characters Valid characters: A–Z, a–z, 0–9, _	Message Storage and Retrieval Name. Enter this option if the user wants to generate the MSR name that is associated with the MSRID.

Datafill example

The following example shows sample datafill for table MSRTAB.

MSRTAB (end)

MAP display example for table MSRTAB

```
        MSRID       OPTLIST

_____________________________________________________________

6137216050               $
8197228907               $
7777777777   (BILLNUM 6137223001 Y) (MSRNAME RTPVMI)$
```

Table history

NA012

Added option MSRNAME for feature A59006512 Message Services - MSR Name Display and Universal DN System Support.

NA011

Added option BILLNUM for feature AF7776.

NA010

Feature AU2903 Update Message support for MWI introduces table MSRTAB.

Supplementary information

The following error messages are provided to inform the user that the name is not entered correctly.

If the MSRNAME is an empty string the following error message is displayed:

```
The number of characters in MSR Name should be greater than zero
```

If the MSRNAME exceeds 16 alphanumeric characters, the following message is displayed:

```
MSRNAME should not exceed sixteen characters
```

The MSRNAME only consists of characters from the following set: [A–Z, a–z, 0–9, _]. If the MSRNAME being entered contains special characters, the following message is displayed:

```
MSRNAME should contain no special characters
```

DMS-100 Family

North American DMS-100

Customer Data Schema Reference Manual

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Data Schema LENLINES-MSRTAB

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