Wisconsin Bell

ADVISOR

FIELD SUPPORT STAFF
METHODS AND PROCEDURES

SUBJECT: Ameritech Digital Centrex - Installation/Repair

DATE: June 3, 1991
(Original Issue Date - December 15, 1987)

FILE: WT 90-19-08 (TUF) (Revised)

PROCEDURE FOR: Cable Repair, Construction, I&M and DSOC

INFORMATION FOR: TDC Course Development

AUTHORS: Frank Schmidt, (414) 678-559 (Field Technicians)
Dennis Sulok, (414) 678-2633 (DSOC - Maintenance)

(This letter is being revised to introduce a Business Set Provisioning form to be used by DSOC Load, RCC and Field Technicians. All Additions/Changes are indicated by arrows.)

GENERAL INFORMATION

The Ameritech Branding Council has changed all references to Integrated Information Network (IIN) services. These services have been officially renamed Ameritech Digital Centrex (ADC).

ADC services are provided from a digital Central Office and are only sold on an individual customer contract basis. Each Digital Centrex is customized to meet the customer's communication needs and can employ many unique Centrex features.

The main differences between ADC and normal tariffed Centrex is the PRICING, BILLING, FEATURE SELECTION and CUSTOMER CONTRACT. The contract defines the quantity of lines, features and length of time the service will be kept by the customer.

Rates for ADC are customer specific, the actual price is based on the number of lines, features, cable facilities required and contract length. Payment for ADC service is normally made in a lump sum at the time of cutover/acceptance, or staggered into multiple payments over a fixed time frame; contracts run from three to ten years.

Ameritech Digital Centrex (ADC) is one of our major product lines and has a significant revenue impact on our Company. Distribution Services personnel should refer to the service as "Ameritech Digital Centrex" or "Digital Centrex" when dealing with customers.

Training Course #7818 for the Meridian Business Set is available at the TDC.

DIGITAL CENTREX SERVICES

In addition to the standard Centrex features, ADC offers customers many new and varied Central Office features on a per line, system and attendant basis. Some of the new features include Business Sets (An electronic key set), Multiple Appearance Directory Numbers, Phantom Numbers and Automatic Call Distribution.

Also offered is Ameritech Centrex Mate (ACM) which allows a customer to change, add or delete Centrex features and swap telephone numbers between working lines through the use of a computer terminal on the customer's premises. Centrex Lines that can be modified by ACM are identified on LMOS and Tech Direct screens by the message ACM. On service orders they are identified by the Fid CSR M.

For your information, Digital Centrex features are listed in ADVISOR letters WT 90-19-09 and WT 90-19-10.

DIGITAL CENTREX INSTALLATION

A list of the Distribution Services implementation tasks that are required to install a Digital Centrex system are described on Attachment 1. DMS 100 Business Set installation forms and instructions are described on Attachment 1A. Please review this information to determine your involvement and the correct procedures to follow.

Listed below are line USOCs for Digial Centrex service:

Single-Line

WTQAA - Basic One Line
WTQWL - One line (Msg. Wtg.)
WTQSM - MADN (Primary)
WTPSL - MADN (Non-Primary)
WTQWM - MADN (Msg. Wtg.)
PDD PDH PDN - Dormitory
PDP PS7A PSE - Dormitory
PS7 PS7A PSS - Dormitory
CONC - Console Line

Meridian Business Set

WTQPS - Basic Set
WTQPL - Basic Set (Display)
WTQAB - M5009 (9 Button)
WTQAC - M5112 (12 Button)
WTQBS - M5209 (9 Button Display)
WTQ12 - M5312 (12 Button Display)
WTQFN - Phantom Number

Listed below are the main class of service for Digital Centrex service:

FYD++ = DMS100
FY5++ = 5ESS
FYS++ = Siemens

The fourth and fifth characters are unique to each customer.

NOTE: LMOS and Tech Direct screens will identify Digital Centrex service by displaying the codes "ADC" and "ADC Business Set" in the message field.

Digital Centrex Service Order examples are displayed on Attachment 2.

Network Interfaces

Network Interfaces should be placed for all Digital Centrex installations. Single line type SNIs such as the Keptel 2125 and 8925 are recommended because they provide the customer with mini-modular testing capability. If the customer has complex terminal equipment (Excluding Business Sets), RJ21X type jacks must be used. The customer or their vendor may choose to order RJ21Xs even though complex equipment is not being used.

The following guidelines should be followed for the installation and billing of SNIs for Digital or non Digital Centrex:

	Conditions	Place SNI	Bill
1.	Install new Centrex service (No service existing)	YES	NO
2.	Change from Centrex to Digital Centrex	NO*	NO (Unless requested)
3.	Change from IMB, TKs to Digital or non Digital Centrex	YES	NO
4.	Add additional lines	YES	NO
5.	Repair inside wire	NO	NO
6.	Customer purchase of 12C cable	YES	YES

* SNIs can be placed with no customer billing if the Field forces determine that WBI would benefit from a technological or economic standpoint.

Loop Requirements

Digital Centrex "single line" service should meet POTS loop guidelines.

Digital Centrex Business Sets and Consoles require loops that meet certain conditions in order for the service to function properly. In some cases the outside plant or inside wire may need to be modified, for example, removal of bridges tap or load coils, use of special channel units in SLC systems, separation of services within a binder group or between binder groups, replacement of non-twisted inside wire, etc.

Business Set loops will always be pre-qualified even if existing facilities are available and the plan records indicate the design parameters are met.

Business Set loops cannot exceed 1100 ohms resistance from Central Office MDF to the SNI. Also the loop must be non-loaded and free of bridge tap.

The "Pre-qualification" process is listed below:

1. The OSPE issues an EWO for conformance testing.

2. The normal conformance testing routine is followed.

3. All vacant and recorded defective pairs identified by OSPE on the E-6410 should be tested with the 77A analyzer.

4. If the conformance tests indicate the presence of load coils, bridged tap or faults, the OSPE will issue an EWO to construction for correction of the problems.

After the facilities for the Business Sets have been qualified, the I&M technician will perform transmission and noise tests. If the pairs do not meet the transmission/noise requirements, the pairs must be repaired or the OSPE contacted for further involvement.

Transmission/Noise test should include the facility from the Central Office MDF up to and including the RJ11C (or it's equivalent). If WBI is not installing the inside wire, arrangements should be made with the vendor/customer to make the tests with the inside wire included in the loop. Testing may be required at both the network interface and RJ11C to determine whether the inside wire or network facility is causing a requirement failure.

Listed below are some reasons that cause loops to fail transmission/noise tests:

- Excessive Length
- Load Coils
- Bridge Tap
- High Resistance Splices/Connections
- Excessive Gauge Changes
- Insufficient Twists In Wire

Transmission/Noise Test Requirements

Single Line

Single Line Digital Centrex is treated like POTS and follows Line Quality Standards as documented in WT 90-06-02.

Test Equipment: Volt-Ohm-Millimeter, Wilcom 136B (or equivalent)

Business Sets

1) LOOP RESISTANCE - Loop resistance from the central office MDF to the Business Set jack cannot exceed 1230 ohms.

LOOP RESISTANCE from the central office MDF to the network interface cannot exceed 1100 ohms.

Business Sets (Continued)

Test Equipment: Volt Ohm Meter

2) LOOP LOSS - Maximum loss from the C.O. MDF to the Business Set Jack cannot exceed -24 dB at 8000 HZ with a 900 ohm termination. Inside wire loss should not exceed -1.5 dB. Network loss (C.O. to SNI) should not exceed -22.5 dB.

Test Equipment: Hewlett Packard 4935 (or equivalent)

3) DC VOLTAGE - Maximum of 1 volt DC. Short and ground pair at CO MDF, measure tip to ring, tip to ground and ring to ground. An MLT shoe test can also be used.

Test Equipment: Volt Ohm Meter

4) AC VOLTAGE - Maximum of 25 volts AC. Short and ground pair at CO MDF, measure tip to ring, tip to ground and ring to ground. An MLT shoe test can also be sued.

Test Equipment: Volt Ohm Meter

5) INSULATION RESISTANCE - Greater than 120K ohms. With the pair open at the CO, measure tip to ring, tip to ground and ring to ground. An MLT shoe test can also be used.

Test Equipment: Volt Ohm Meter

6) C MESSAGE NOISE - 20 dBrnc or less. Both test sets should be optioned for a 900 ohm termination and C Message Noise function.

Test Equipment: Hewlett Packard 4935 (or equivalent)

7) POWER INFLUENCE - 80 dBrnc or less. The cable pair at the CO should have a 900 ohm termination applied. The Measuring set at the out end should be in the Noise to Ground mode with the C Message weighting option selected.

Test Equipment - Hewlett Packard 4935 (or equivalent)

8) IMPULSE NOISE - 300 Counts or less in a 15 minute period. Test sets at both ends of cable pair should be optioned for a 900 ohm termination. Test set at the out end should be optioned for 15 Khz flat weighting, impulse counter should be timed and low threshold set at 60 dBrn. Run test for a 15 minute period.

Test Equipment: Hewlett Packard 4935 (or equivalent)

NOTE: This test is optional, but should be performed if the customer is experiencing trouble and tests 1 through 7 do not identify the problem.

IIN Consoles

Consoles served from a DMS100 require (3) pairs. Transmit, Receive and Talk. The three pairs are connected to standard IIN line cards (Lens).

Consoles served from a 5ESS require one pair. The console pair is connected to a standard centrex line card (LEN).

DMS100 Console Loop Requirements

1) LOOP RESISTANCE - Loop resistance from the central office MDF to the network interface cannot exceed 1300 ohms.

Test Equipment: Volt Ohm Meter

2) LOOP LOSS - Maximum loss is -12 dB at 1000 HZ with a 900 ohm termination. Two test sets are required.

Test Equipment: Hewlett Packard 4935 (or equivalent)

3) BRIDGE TAP - Objective is no bridge tap to ensure effective performance of the Console.

5ESS Console Loop Requirements

1) Follow Digital Centrex "single line" requirements.

"Dial Tone" Tests

After the line translations have been completed in the switch, the technician should test each centrex line (single line & business set) at the jack appearance. The console lines should be tested from the CO maintenance panel, console CPE should be connected.

The Northern Telecom "Electronic Line Test Set" (ELTS) should be used to test activated Business Set lines. This test set will simulate a Business Set and determine if there is a loop of Central Office problem. Ordering information for the ELTS is shown in Exhibit 2.

The Business Set should be tested via the "Ringer Test" after the ELTS Test passes. Refer to Exhibit 1.

NOTE: Marketing is responsible to test all features associated with each Digital Centrex line.

Cable Pair Special Protection

It is recommended to place "Green" protection at all terminals that feed the Business Sets and Consoles. This should include the F1 SAC point, F2 terminal at customer location and any inside terminals in 12C cable.

CABLE TRANSFER ACTIVITY

Cable pair rearrangements on Business Set and Console service should be avoided, but if necessary, certain guidelines must be followed to ensure continuity of the service and customer satisfaction.

CTAP Procedures for Business Set Service:

Business Set and Console pairs are identified on the field cut sheets by the code "IIN" in the pair usage field.

1) Conformance testing should be performed on the new pairs that will be used to determine if they meet the no load coil, no bridge tap and 1100 ohm resistance requirements.

2) The I&M Technician should perform the Transmission/Noise tests after the Conformance testing qualifies the pairs.

3) No temporary half taps or bridge tap can be connected.

4) If it is necessary to identify (tag) pairs, the APICS tagger must be used as it does not affect Business Set service or Special Circuits.

5) The Transfer work MUST be included in the CTAP schedule, i.e., the customer must be notified before cutting to the new facilities.

6) The cutover test person must test the service with the customer after cutting to the new facilities.

CTAP procedures for DMS100 and 5ESS Console Service

1) Installation loop requirements (as described above) should be followed.

NOTE: Only a minimal amount of bridge tap can be connected.

2) No temporary half taps or bridge tap can be connected.

3) The Transfer work MUST be included in the CTAP schedule, i.e., the customer must be notified before cutting to the new facilities.

4) The cutover test person must test the service with the customer after cutting to the new facilities.

DIGITAL CENTREX MAINTENANCE

Trouble reports can be categorized as follows:

1) Feature problem

   - C.O. Translation Incorrect (Line or System)

   - Mis-operation by user

2) Loop problem

3) CPE problem

Loop Faults

The DSOC Maintenance Administrator will test single line service for "physical" type faults with MLT.

- Business set testing should be performed according to the procedures in Advisor letter WT 90-19-11.

- Console lines should be tested with the assistance of the SCC.

Feature Troubles

The DSOC Maintenance Administrator will analyze C.O. feature problems by using Predictor to verify line translations and SCC assistance for system feature troubles.

If translations verify as OK, the problem may be with the use of the feature as the customer perceives how it functions. The best route to follow is to have the customer invoke the feature and follow the operation looking for failure or mis-operation. In some cases when two features are invoked on the line, they may inhibit each other's operation. Refer to the Switch manufacture's documentation to determine feature compatibility.

CPE Troubles

CPE problems can be difficult to diagnose, attempt to have the customer use another instrument (except for Business Sets) to determine if the trouble remains or clears.

Business Set Trouble - Field Technician

When dispatched on a trouble report, the technician's first responsibility is to visit the customer's premises and inform the customer that the repair work is starting. Next, the technician should verify with the user which Business Set is in trouble and the type of trouble the user is experiencing.

It is important to remember that when shooting a trouble on a Business Set every trouble must be analyzed individually. The technician should never assume that any portion of the circuit is trouble-free without complete testing and analyzation.

CAUTION, IIN Business Set service is a digital circuit. Do not attempt to test the subscriber loop circuit with a standard telephone hand test set because it will not draw dial tone on the digital line circuit and is unable to perform/assist with any circuit test.

All station equipment tests are performed using a Northern Telecom "Electronic Line Test Set" (ELTS) or a WBI provided Business Set.

It is very important that these testing procedures be observed. The rationale behind this follows:

- Tone is not provided by the Central Office equipment. The dial tone, ringing tone, busy tone, etc., is generated inside the Business Set at the request of the Central Office. This is accomplished through a series of digital signals sent from the Central Office to the Business Set. These signals are sent from the Central Office to the Business Set and back at 8000 cycles. Using a technician's hand test set and applying shorts and/or ground may cause damage to the Central Office circuit card associated with the circuit under test.

- Because a Business Set circuit is digital, only applicable station equipment (i.e., a Business Set) will draw dial tone or perform correctly when connected to the line circuit.

General Troubleshooting

When shooting a trouble on a Business Set line, the first step is to attempt to draw dial tone at the Network Interface. Ensure that dial tone was present at CO. This is accomplished by using the ELTS. If dial tone cannot be drawn or if a fault is discovered in the loop, standard trouble shooting procedures should be employed. This may involve taking Transmission/Noise tests as described under Digital Centrex Installation.

If dial tone is heard at the Network Interface, but not at a Business Set location, at the customer's request, standard troubleshooting procedures should be applied to the inside wire cables(s). (This work is deregulated for billing, time reporting, etc.) After dial tone is restored at the Business Set location, proceed with the Station Ringer test at the Business Set jack.

If dial tone is heard at both the network Interface and the Business Set location, proceed with the Station Ringer test at the network interface location or the Business Set jack (deregulated) as is appropriate.

Transmission/Noise Loop Tests

When shooting a trouble, a loop requirements for the cable pair on a Business Set must be confirmed. First the technician must verify that there is no bridget tap or load coils in the circuit. Additionally, the technician will have to ensure that the cable pair meets the following circuit requirements.

- Loop Resistance
- Circuit Loss
- Voltage Test
- Insulation Resistance
- Circuit Noise

These tests are described under "Digital Centrex Installation."

Business Set Ringer Tests

After testing the line with the ELTS, (All tests pass), the customer's Business Set can be tested to ensure it communicates with the Central Office. The "Station Ringer" test will verify the telephone's operation with the C.O. Refer to Exhibit 1 for procedures to conduct this test.

Any questions or concerns relative to Ameritech Digital Centrex should be directed to the Authors of these procedures.

R E Brown

R. E. Brown
District Staff Manager -
Distribution Services

Attachments

Expense Tool "Ordering Info for ELTS"

Wisconsin Bell
AN AMERITECH COMPANY

Request For Tools And Material

3846 (5-84)

As Appropriate

Date Ordered	Date Wanted	Not Before	RC-O	RC-C	Geo. Loc.	Request Number
1-1-90	1-15-90		P	P		44562

Authorization/Est. No.	Authority Number	MU	Reviewed By	Edited By	Page of Pages

Ordered By (Local Info)	Approved By (Local Info)
Telephone No.	Title / Date
Ship To	Approved By
Street Address	Title / Date
City / State (Wisconsin) / Zip Code	Approved By
Remarks: Call A. Clark (708) 706-8323 with PO # to expedite shipment	Title / Date

FC/FRC	Quantity	Unit	Material Item No.	Catalog Description
F 5234	1	EA	Non Stock	Electronic Line Test Set "ELTS
				Rental For 1 Year (Renewable)
				$350 per year
				Order From: Northern Telecom In
				c/o A. Clark
				Dept. 1512
				475 Martingale R
				Schaumburg, Ill 601
				*Contact A. Clark at 708 706-83
				with PO # to expedite shipment

F.C.C. 56a

ORIGINAL

AMERITECH DIGITAL CENTREX (ADC) Implementation Tasks

Introduction

The purpose of this document is to list specific tasks which must be performed by I&M field personnel to successfully implement an ADC cutover. Additionally, a general description of the tasks that other Distribution Services' work groups must perform is provided.

For a copy of the complete and detailed methods and procedures for these other work groups, please contact the respective Staff Subject Matter Expert (SME) of that work group. The I&M implementation tasks are provided in a time sequence relative to the other work group's implementation tasks. This format was used to give I&M personnel an appreciation of how and at what point these other work groups will affect the ADC cutover. Also, this format should provide I&M field personnel with an understanding of when they must react to the completion of another work group's implementation task(s).

General Information (ADC Sale)

The time between where a potential ADC customer is identified but before a contract is signed (ADC sale), a series of meetings and customer contacts takes place. Generally, the following steps must be taken before an ADC sale is made:

- Potential ADC customer is identified (Marketing).
- Request For Proposal is initiated by the customer.
- SUMIT reviews Proposal/Design for:

  Equipment Needs (Central Office)
  Facility Requirements (OSP)
  Cost
  Price

- Proposal sent to the customer (Marketing).
- Letter of intent to purchase ADC is issued from customer to Wisconsin Bell.
- Precontract Review Meeting with SMEs of all affected work groups.
- Signed contract with customer.

I&M field personnel are not involved in the above presale negotiations and planning meetings. After the identification of a potential ADC customer and the subsequent sale of the ADC to that customer, a Marketing Project Manager is appointed to the sale. The Marketing Project Manager will be responsible

AMERITECH DIGITAL CENTREX (ADC) Implementation Tasks

for identification, assignment, coordination and completion of all ADC implementation tasks. To that end, the Marketing Project Manager will appoint and chair an ADC implementation team consisting of a SME from each of the affected work groups.

The purpose of the implementation team is to ensure a successful trouble-free implementation of the ADC sale. It is at this stage in the ADC sale that the Distribution Services field forces will become actively involved in the ADC sale.

At the implementation meetings, the Marketing Project Manager will review the customer's service request, address the team members' concerns, assign responsibilities for respective tasks related to the ADC cutover, assure that each team member understands their individual tasks for the ADC cutover and define time frames for the completion of these tasks.

ADC Implementation Tasks

The ADC implementation tasks are divided into three categories:

1. Other Work Groups.

2. Distribution Services I&M when installing the SNI only.

3. Distribution Services I&M when installing the SNI, Inside Wire, and the Jacks.

The one most important element in any cutover is a spirit of cooperation between I&M field forces, the DSOC inside forces and the vendor to resolve any cutover problems. This cooperation may require that the Wisconsin Bell employees step over traditional lines of responsibility in an effort to resolve cutover problems. Paramount in any ADC sale is a successful trouble-free cutover for the customer.

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
ADC Implementation Meeting. (Project Manager)	Using the ADC Centrex Service Request M Forms, the I&M supervisor will presurvey the job for hardware needs (wire, network interfaces., etc.), force needs, start dates, vendor needs and scheduling considerations. If Business Phones are going to be installed, the I&M Supervisor should obtain an Electronic Line Test Set (ELTS) to enable logical testing of the Business Set Line. NOTE: When Wisconsin Bell is installing the ADC service to the SNI only, the Project Manager will ensure that the vendor will presurvey the premises for CPE, jacks and inside wire needs.	Using the ADC Centrex Service Request M Forms, the I&M supervisor will presurvey the job for hardware needs (jacks, inside wire, network interfaces, etc.), force needs, start dates, vendor needs and scheduling considerations. If Business Phones are going to be installed, the I&M Supervisor should obtain an Electronic Line Test Set (ELTS) to enable logical testing of the Business Set Line.
Distribution Services - MAC Administration Center, Outside Plant Engineering and Network Switched Services		

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
Determine if Pseudo or Separate MAC Office Necessary. (MAC Administration Center)	None	None
Establish and Verify MAC Office Indicators and Parameters. (Line Record Conversions/MAC Administration Center)	None	None
Distribution Services - MAC Administration Center, Outside Plan Engineering and Network Switched Services (cont.)		
Establish and Verify MAC Office Tables. (Line Record Conversion/MAC Administration Center)	None	None
Update MAC Class of Service Tables. (Line Record Conversions)	None	None
Coordinate SAG and WBI Interface Modifications. (MAC Administration Center)	None	None

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
Determine OSP Facility Parameters and Issue Load Forms. (OSP Engineering)	When this task is completed, an Engineering Work Order will be created in MAC. When this work order is issued, either the Construction or I&M forces will prequalify cable pairs for the ADC service. The Engineering Work Order will require that cable pairs needed for Business Sets will have all bridge tap and load coils removed. At this time, conformance test all pairs associated with the ADC sale to ensure they meet Outside Plan Design parameters.	When this task is completed, an Engineering Work Order will be created in MAC. When this work order is issued, either the Construction or I&M forces will prequalify cable pairs for the ADC service. This Engineering Work Order will require that cable pairs needed for Business Sets will have all bridge tap and load coils removed. At this time, conformance test all pairs associated with the ADC sale to ensure they meet Outside Plan Design parameters.
Distribution Services - MAC/LAC		
Preassign Facilities for Business Phones and Consoles. (OSP & MAC/LAC)	After the Business Phone and Console lines have been assigned in MAC, the DSOC Service Order Load Area personnel must request the MAC field work tickets from MAC via their MAC terminal and distribute them to the field supervisor. The field supervisor will arrange to have the assigned facilities connected in the field and all Business Phone and Console Loop Qualification Tests will be performed at this time as per Advisor letter WT 90-19-08.	After the Business Phone and Console lines have been assigned in MAC, the DSOC Service Order Load Area personnel must request the MAC field work tickets from MAC via their MAC terminal and distribute them to the field supervisor. The field supervisor will arrange to have the assigned facilities connected to the field and all Business Phone and Console Loop Qualification Tests will be performed at this time as per Advisor letter WT 90-19-08.

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
Preassign Facilities for Business Phones and Consoles. (OSP & MAC/LAC) (Cont.)	The Loop Qualification Test readings will be provided to the vendor at this time. This will enable the vendor to make the proper adjustments to the Business Sets. Additionally, a log should be maintained at the Standard Network Interface listing the location, cable pair and the Loop Qualification readings for each of the Business Phone and Console lines.	The Loop Qualification Test readings will be provided to the vendor at this time. This will enable the vendor to make the proper adjustments to the Business Sets. Additionally, a log should be maintained at the Standard Network Interface listing the location, cable pair and the Loop Qualification readings for each of the Business Phone and Console lines.
Preparation for Establishing the Service Order in MAC (MAC/LAC)	None	None

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
Assign Service Orders in MAC. A. Normal Centrex Stations B. Business Phones and Multiple Appearance Directory Number Arrangements (MADN). (MAC/LAC)	After the service orders are assigned in MAC, the DSOC Service Order Load Area personnel must request the MAC field work tickets via their MAC terminal and distribute them to the field supervisor. The field supervisor will arrange for the establishment and pretesting of the regular Centrex station loops. These tests will be performed at the SNI. Since the Business Phones(s) were preassigned earlier and the Loop Qualification Tests completed at that time, the technician should verify that these facilities assignments have not changed in MAC.	After the service orders are assigned in MAC, the DSOC Service Order Load Area personnel must request the MAC field work tickets via their MAC terminal and distribute them to the field supervisor. The field supervisor will arrange for the establishment and pretesting of the regular Centrex station loops. These tests will be performed at the end user's jack. Since the Business Phone(s) were preassigned earlier and the Loop Qualification Tests completed at that time, the technician should verify that these facilities assignments have not changed MAC.
Distribution Services - MAC/LAC (cont.)		
Resolve Defective and Occupied Facility Problems. (MAC/LAC)	Any pairs identified as defective or occupied during the previous step should be resolved with the MAC/LAC at this time.	Any pairs identified as defective or occupied during the previous step should be resolved with the MAC/LAC at this time.
Assign A Copy Service Orders. (MAC/LAC)	None	None

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
Assign ADC Console(s) in MAC. (MAC/LAC)	After the Console(s) have been assigned in MAC, the DSOC Service Order Load Area personnel must request the MAC field work tickets via their MAC terminal and distribute them to the field supervisor. Since the Console(s) were preassigned earlier and the Loop Qualification Tests completed at that time, the technician should verify that the facilities assignments have not changed in MAC.	After the Console(s) have been assigned in MAC, the DSOC Service Order Load Area personnel must request the MAC field work tickets via their MAC terminal and distribute them to the field supervisor. Since the Console(s) were preassigned earlier and the Loop Qualification Tests completed at that time, the technician should verify that the facilities assignments have not changed in MAC.
Establish Call Pick-Up Group Circuits in MAC (DMS100 Switch). (MAC/LAC)	None	None
Distribution Services - Recent Change Center (RCC)		
Compare Recent Change Tickets to M Forms. (RCC)		None
Distribution Services - Recent Change Center (RCC) (cont.)		
Make Corrections to Recent Change Tickets. (RCC)	None	None

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
Input Line Translations Via MIZAR for Release to Switch (RCC)	After the line translations are input into MIZAR and released to the switch, the technician will, at this time, have dial tone on each assigned cable pair for regular Centrex lines. At this time, the field technician will test each assigned Centrex line for dial tone and proper telephone number assignment. Using the ELTS, the technician will, at this time, test all Business Phone lines for dial tone and proper telephone number assignment. These tests will be performed at the SNI. NOTE: The Marketing Project Manager will be responsible for the coordination of Business Phone(s) and Console testing between the vendor and the central office. NOTE: The Marketing Account Executive is responsible for the testing of all Centrex features on all ADC Centrex lines. This will include any Business Phone and Console lines.	After the line translations are input into MIZAR and released to the switch, the technician will, at this time have dial tone on each assigned cable for regular Centrex lines. At this time, the field technician will test each assigned Centrex line and cable pair for dial tone and proper telephone number assignment. Using the ELTS, the technician will, at this time, test all Business Phone lines for dial tone and proper telephone number assignment. These tests will be performed at the end user's jack. NOTE: The Marketing Project Manager will be responsible for the coordination of Business phone(s) and Console(s) testing between the vendor and the central office. NOTE: The Marketing Account Executive is responsible for the testing of Centrex features and all ADC Centrex lines. This will include any Business Phone and Console lines.

ADC IMPLEMENTATION TASKS

Other Work Groups	Distribution Services I&M Installing SNI Only	Distribution Services I&M Installing SNI Inside Wire and Jacks
	Cut Responsibilities.	Cut Responsibilities.
	The I&M field supervisor will be responsible for the scheduling of appropriate ADC cutover coverage. The field supervisor should communicate with the DSOC management team any inside coverage needs (i.e., MA coverage, RCC coverage, MAC/LAC coverage, Central Office coverage, etc.)	The I&M field supervisor will be responsible for the scheduling of appropriate ADC cutover coverage. The field supervisor should communicate with the DSOC management team any inside coverage needs (i.e., MA coverage, RCC coverage, MAC/LAC coverage, Central Office coverage, etc.)
	The I&M field supervisor/technician will act as the vendor's interface with Wisconsin Bell for cutover trouble handling/resolution at the time of the cutover. The technician will work with the vendor to resolve any cutover problems.	The I&M field supervisor/technician will act as the vendor's interface with Wisconsin Bell for cutover trouble handling/resolution at the time of the cutover. The technician will work with the vendor to resolve any cutover problems.

BUSINESS SET PROVISIONING FORM

Provisioning of the Business Set from a DMS100 Central Office will be accomplished by using the new Business Set Form instead of the service order. The primary user of this form will be the RCC, DSOC load function and the field tech. Changes on Business Set service will also be done via this form.

MAC will continue to provide the cable facility through the service order process.

RCC will use the Business Set form to perform all translations.

DSOC load will examine the form to determine if a premises dispatch is required. Obviously this will occur on all new installations. In those cases where the customer is changing features only, the DSOC load will evaluate the magnitude/complexity of the changes and determine if a dispatch should be made to verify feature operation or if the features should be tested by an MA with the customer.

It is recommended that an MA test features with the customer in lieu of a dispatch.

Field technicians will use the forms to determine correct telephone number assignment for SNI and or IW testing. If the customer has feature questions the form can be used to help answer the question/s.

INSTRUCTIONS FOR AMERITECH DIGITAL CENTREX (ADC) BUSINESS SET PROVISIONING FORM

COMPLETE THE FORM IN BLACK INK/MARKER.

SECTION 1 (ASM/SR) RESPONSIBILITY)

This section will be completed by the Account Service Manager (ASM) or Service Representative (SR) when negotiating the Business Set request with the customer.

An explanation of the numbered items shown in Section 1 follows. The person responsible for the entry will be shown as Account Service Manager (ASM) Responsibility or Service Representative (SR) Responsibility. When both 'ASM/SR Responsibility' is shown, the entry will be completed by the originator (either ASM or SR) of the form.

PRIORITY SR RESPONSIBILITY

The Priority Code will be assigned by the SR using existing Methods and Procedures for Priority Code Assignment.

TN (MAIN BILLING TELEPHONE NUMBER) ASM/SR RESPONSIBILITY

Enter the Main Billing telephone number of the account here. This entry will be completed by the originator (either ASM or SR) of the form.

CUS (CUSTOMER CODE) SR RESPONSIBILITY

The 'CUS' will be entered by the SR from the customer's service record.

APP (APPLIED FOR DATE) ASM/SR RESPONSIBILITY

The date the service change is negotiated with the customer is to be noted after the 'APP' entry. This information will be completed by the originator of the form.

EX (EXCHANGE) SR RESPONSIBILITY

The 'EX' information will be entered by the SR using existing Methods and Procedures for EX entries.

ORD (ORDER NUMBER) SR RESPONSIBILITY

The 'ORD' will be assigned by the SR using existing Methods and Procedures for Order Number assignment.

CS (CLASS OF SERVICE) SR RESPONSIBILITY

The 'CS' will be entered by the SR from the customer's service record.

SLS (SALES CODE) ASM/SR RESPONSIBILITY

The Sales Code of the form originator will be entered here.

DD (DUE DATE) ASM/SR RESPONSIBILITY

The Due Date for the requested change will be entered by the order originator.

RTG (ROUTING INFORMATION) SR RESPONSIBILITY

The Routing Code will be assigned by the SR using existing Methods and Procedures for Routing Code assignment.

LINE USOC ASM/SR RESPONSIBILITY

The Line USOC of the set type to be installed will be entered here. The Line USOC is to be obtained from the ADC handbook by the form originator.

RO (RELATED ORDER) SR RESPONSIBILITY

The Related Order number (if applicable) will be assigned by the SR.

CENTREX/PRIMARY TELEPHONE NUMBER ASM/SR RESPONSIBILITY

The Primary Telephone Number (Key 1 telephone number) of the Business Set will be entered here. The entry will be made by the originator of the form.

CENT (MAJOR ACCOUNT CENTER) ASM/SR RESPONSIBILITY

The Major Account Center Code will be entered here by the form originator if appropriate.

SECTION 2 (ASM/SR RESPONSIBILITY)

1. PAGE ____ OF ____ ASM/SR RESPONSIBILITY

   The form originator will complete this entry. This entry will designate the number of Business Set Provisioning forms included with the request.

2. THE BOXES NOTED 'NEW', 'CHANGE' OR 'CHANGE SET FROM ____ TO ____' ASM/SR RESPONSIBILITY

   The form originator will complete this entry.

3. ADD ON MODULE: ☐ 18 ☐ 36 ☐ OTHER ASM/SR RESPONSIBILITY

   The form originator will complete this entry. If you are adding, deleting or making changes to an Add On Module, check mark (√) the box to show the type of Add On Module requiring work.

4. SET TYPES SR/ASM RESPONSIBILITY

   The form originator will complete this entry. Place a check mark (√) in the appropriate box to designate the type of set associated with the Primary Directory Number.

SECTION 3 (MAC/LAC RESPONSIBILITY)

SECTION 4 (SR RESPONSIBILITY)

Section 4 will be completed by a Service Representative. Section 4 will eliminate the need for issuance of a 1047 for most service requests.

For certain order requests, the '1047' space in Section 4 will not be adequate for service order entries. If more order space is required, a 1047 should be used. The 1047 should be paper clipped to the form.

SECTION 5 (ASM/SR RESPONSIBILITY)

Section 5 is to be completed by the Account Service Manager (ASM) or Service Representative (SR) when negotiating the Business Set request with the customer.

An explanation of the numbered items shown in Section 5 follows.

KEY INFORMATION (NO ADDITIONAL ENTRY REQUIRED)

The numbers 1 through 12 represent the keys on a Business Set. Key 1 is always the location of the Primary Telephone Number of the set.

TN/FEATURE (TELEPHONE NUMBER/FEATURE) ASM/SR RESPONSIBILITY

The line and feature configurations for the set will be entered in this column by the form originator. The numbers 1 through 12 shown to the left of this column represent the keys on the Business Set.

USOC (UNIVERSAL SERVICE ORDER CODE) ASM/SR RESPONSIBILITY

The feature USOC will be entered in this column when the form originator elects to write the 'TN/Feature' information in English.

All valid USOCs are listed by switch type in Tab 1 of the ADC handbook.

SWITCH LANG (SWITCH LANGUAGE) ASM/SR RESPONSIBILITY

The switch language (code) that corresponds to the feature USOC will be entered in this column by the form originator.

All switch codes are listed in the ADC handbook on the same page in Tab 1 with assigned USOCs.

PHANTOM TN NOTATION ASM/SR RESPONSIBILITY

The applicable entry in this column will be made by the form originator.

TRAILING INFORMATION ASM/SR RESPONSIBILITY

The applicable entries in this column will be made by the form originator.

KEY LIST INFORMATION ASM/SR RESPONSIBILITY

Key List information will be entered by the form originator.

RES CODE (TRT) ASM/SR RESPONSIBILITY

Restriction/Treatment code information will be entered by the form originator. All Restriction/Treatment code information is located in the ADC handbook with the individual customer information.

MADN (MULTIPLE APPEARANCE OF A DIRECTORY NUMBER) S/M INFORMATION ASM/SR RESPONSIBILITY

MADN information will be entered by the form originator. The form originator will enter 'S' in this column if the line is included in a Single Call Arrangement (SCA) MADN. The form originator will enter 'M' in this column if the line is included in a Multiple Call Arrangement (MCA) MADN.

PRIMARY P/N INFORMATION ASM/SR RESPONSIBILITY

Primary P/N Information will be entered by the form originator.

The Primary P/N information refers back to MADN group information column (Column 9). Each line included in a MADN group must be designated as the Primary (P) or Non-Primary (N) of the MADN.

RING R/NR INFORMATION ASM/SR RESPONSIBILITY

This information will be completed by the form originator.

'Ring' information will identify if each line should ring or not ring when the Directory Number is called. The entry to show a line to Ring is 'R.' The No Ring entry would be 'NR.'

NOTES/JACK INFORMATION ASM/SR RESPONSIBILITY

This information will be entered by the form originator.

Jack/PIN information should be entered in this column. Any addition Notes pertaining to the key may be entered in this column.

CHANGE LOG NAME/DATE/CHANGE ASM/SR RESPONSIBILITY

This information will be entered by the originator for a CHANGE to an existing service request.

Each time a change is requested for a pending request, the ASM/SR originating the change must note his/her name, today's date and a brief explanation of the change in this column.

A supplemental copy (i.e., A copy, B Copy) must be made to the pending SORD order if line or billing information is affected by the change.

SECTION 6 - REMARKS SECTION (ASM/SR RESPONSIBILITY)

This section will be completed by the Account Service Manager (ASM) or Service Representative (SR) when negotiating the Business Set request with the customer.

An explanation of the numbered items shown in Section 6 follows.

ACCESS INFORMATION ASM/SR RESPONSIBILITY

This information will be entered by the form originator.

Any special access information requested by the customer will be entered here. Use existing procedures for setting access information.

ASM/REP NAME AND NUMBER INFORMATION ASM/SR RESPONSIBILITY

The name of the form originator will be entered here. When both an ASM (as the form originator) and SR (to place the order) are involved in a request, the name and number of both the ASM and SR will be entered in this area of Section 6.

ORDER PER INFORMATION ASM/SR RESPONSIBILITY

This information will be completed by the form originator.

The name of the customer originating the request will be entered here.

ZEWI INFORMATION SR RESPONSIBILITY

ZEWI information will be entered by the SR processing the order request.

ZEWI information will be taken from any special access information (Number 1 of Section 6) noted either by the ASM/SR. ZEWI information will be entered using existing ZEWI methods and procedures.

CONTACT TELEPHONE NUMBER AND CONTACT NAME ASM/SR RESPONSIBILITY

The form originator will complete this information.

The name and telephone number of the customer responsible for the order request will be entered here.

SECTION 1

TN 414 266-4000 CUS 100 APP 12-31-90 EX MILW PRIORITY 1
ORD C4693650415 CS FYDMC SLS WITKN9
DD 1-4-91 W * RTG NV LINE USOC WTQAC
RO CENTREX/PRIMARY TN 266-4686
CENT 171T2

SECTION 2

PAGE 1 OF 1

| X | NEW (Enter All Key Info) | | CHANGE (Enter Changes Only) | | CHANGE SET FROM TO (Enter all key info)
ADD ON MODULE: | | 18 | | 36 | | OTHER
SET TYPE: | | M5009 | | M5209 | | M5312 | | CLASSIC WITH DISPLAY
| X | M5112 | | | CLASSIC | | OTHER

SECTION 3

OFFICE EQUIPMENT LINE USOC CENTREX NUMBER PIC

SECTION 4

--BILL

---S&E
RBG 1/D1 MEDCOL
C WTQAA/CX 4686
T WTQAB/CX 4686/PIC 222C/RES 14/CSR M/MADN
S P R/ZAF SEE BUSINESS SET FORM
I WTQFN/CX 46871 PIC 222C/RES 14/PN 266-4686

SECTION 5

USOC	KEY	TN/FEATURE	SWITCH LANG.	PHANTOM	TRAILING INFO	KEY LIST **	/RES CODE (TRT)	MADN S/M	PRIMARY P/N	RING R/NR	NOTES/ JACK INFO	CHANGE LOG NAME/DATE/CHANGE
	12											1
	11											
	10	E3P	CPU		CPG 154	KL1,2						
	9	E8A,TJV	TNC,CXR									
	8	ESM,E6G	CFVU, CFBL		CFN CPN 266-4680	KL1,2						
	7	AUL	AULTN		266-4982							2
	6	4927					14	S	N	NR		
	5	4926					14	S	N	NR		
	4	4681					14	S	N	NR		
	3	4680					14	S	N	NR		
	2	4687		X			14	S	N	R		3
	1*	4686 KSH E9GNC	KSHALL CFDE			KL1,2 KL1,2	14	S	P	R	RJ21X #12, POSITION 12	
												4

SECTION 6 -- RMKS

RMK ACCESS Work 1st Job in AM ASM/REP NAME AND TN: REP: Barb B 608-252-1234 ASM: ORDER PER Betty
ZEWI CONTACT TN AND CONT NAME Betty Arnold 266-4040

* Features activated by an access code must be assigned to Key 1. Some may require a key list.
** Subset features require a key list showing the actual number assigned to the key associated with the Directory Numbers the feature will affect. Examples of subset features are: ESM, ESE, F9G, E3P, FSX, ESZ, KSH, etc.

Wisconsin Bell
AN AMERITECH COMPANY

36 Button Add-On Feature Sheet

M10
(11-E

Page _____ of _____

☐ New (show all key assignments)

☐ Change (make all changes only on indicated keys)

Order # _____

Contact _____

Key	DN/Feature	MADN S/M	PRIM P/N	RING R/NR
41				
* KL				
53				
* KL				
65				
* KL				
40				
* KL				
52				
* KL				
64				
* KL				
39				
* KL				
51				
* KL				
63				
* KL				
38				
* KL				
50				
* KL				
62				
* KL				
37				
* KL				
49				
* KL				
61				
* KL				
36				
* KL				
48				
* KL				
60				
* KL				
35				
* KL				
47				
* KL				
59				
* KL				
34				
* KL				
46				
* KL				
58				
* KL				
33				
* KL				
45				
* KL				
57				
* KL				
32				
* KL				
44				
* KL				
56				
* KL				
31				
* KL				
43				
* KL				
55				
* KL				
30				
* KL				
42				
* KL				
54				
* KL				

*Change Log (Enter Consecutive Number For Each Change) Also Note Date

Wisconsin Bell
AN AMERITECH COMPANY

18 Button Add-On Modules Feature Sheet

M1014
(11 89)

Page ____ of ____

[ ] New (show all key assignments)
[ ] Change (make all changes only on indicated keys)

Order # _____

Contact _____

1st Module								2nd Module							
Key	DN/Feature	MADN S/M	PRIM P/N	RING R/NR	Key	DN/Feature	MADN S/M	PRIM P/N	RING R/NR	Key	DN/Feature	MADN S/M	PRIM P/N	RING R/NR	Key	DN/Feature	MADN S/M	PRIM P/N	RING R/NR
20					29					38					47				
* KL					* KL					* KL					* KL				
19					28					37					46				
* KL					* KL					* KL					* KL				
18					27					36					45				
* KL					* KL					* KL					* KL				
17					26					35					44				
* KL					* KL					* KL					* KL				
16					25					34					43				
* KL					* KL					* KL					* KL				
15					24					33					42				
* KL					* KL					* KL					* KL				
14					23					32					41				
* KL					* KL					* KL					* KL				
13					22					31					40				
* KL					* KL					* KL					* KL				
12					21					30					39				
* KL					* KL					* KL					* KL				

*Change Log (Enter Consecutive Numbers For Each Change) Also Note Date

Wisconsin Bell
An Ameritech Company

Proprietary Business Set Detail – Standard Set Add-On Module

Revision No.: _____ Date: _____ Page _____ of _____

BTN: _____ Primary DN: _____

Customer Name: _____

Section I - Module Detail

Add-On Module 1

Key	DN/Feature	• Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information	Key	DN/Feature	• Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information
19		N							29		N						
18		N							28		N						
17		Y							27		Y						
16		Y							26		Y						
15		Y							25		Y						
14		Y							24		Y						
13		Y							23		Y						
12		Y							22		Y						
11		Y							21		Y						
10		Y							20		Y						

Add-On Module 2

Key	DN/Feature	• Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information	Key	DN/Feature	• Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information
39		N							49		N						
38		N							48		N						
37		Y							47		Y						
36		Y							46		Y						
35		Y							45		Y						
34		Y							44		Y						
33		Y							43		Y						
32		Y							42		Y						
31		Y							41		Y						
30		Y							40		Y						

Add-On Module 3**

Key	DN/Feature	• Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information	Key	DN/Feature	• Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information
59		N							69		N						
58		N							68		N						
57		Y							67		Y						
56		Y							66		Y						
55		Y							65		Y						
54		Y							64		Y						
53		Y							63		Y						
52		Y							62		Y						
51		Y							61		Y						
50		Y							60		Y						

*Lines and Features requiring lamps may not terminate on keys 18, 19, 28, 29, 38, 39 48, 49, 58, 59, 68 and 69.

**Once Add-On Module 3 is added, none of the Lines and Features appearing on the set will be retained for display on CCRS.

Notes:

1. Multiple Appearance Directory Number (MADN) Descriptors – Multiple (MCA) or Single (SCA) Call Arrangement
2. Ring (R) or No Ring (NR)
3. Primary (P) or Non-Primary (NP)
4. Subset Features will require a Key List showing the actual number assigned to the Key associated with the Directory Numbe that the features will affect. Subset features are: ESM, E5E, E9G, E3P, ESX, ESZ and KSH.
5. Feature Information e.g., Call Pick-Up Group Number, Call Forward Number, etc.

Wisconsin Bell
AN AMERITECH COMPANY

Proprietary Business Set Detail - M536 Add-On Module* / Type 5009 and 5112 Sets

MP2a
(4-88)

Revision Number: _____ Date: _____ Page: _____ of _____

Customer Name: _____ BTN: _____

Key**	DN/Feature	1 MADN SCA/MCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Comments	Key**	DN/Feature	1 MADN SCA/MCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Comments	Key**	DN/Feature	1 MADN SCA/MCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Comments
41							53							65						
40							52							64						
39							51							63						
38							50							62						
37							49							61						
36							48							60						
35							47							59						
34							46							58						
33							45							57						
32							44							56						
31							43							55						
30							42							54						

* Only one Add-On Module is allowed per set.

** All Keys are equipped with LCD. An external power supply is required.

Notes:

1. Multiple Appearance Directory Number (MADN) - Single (SCA) or Multiple (MCA) Call Arrangement
2. Ring (R) or No Ring (NR)
3. Primary (P) or Non-Primary (N)
4. Subset features will require a Key List showing the actual number assigned to the Key associated with the Directory Numbers that the feature will affect. Subset features are: ESM, E6E, E9G, E3P, ESX, ESZ and KSH.
5. Feature Information e.g., Call Pick-Up Group Number, Call Forward Number, etc.

Wisconsin Bell
An Ameritech Company

Proprietary Business Set Detail – M518 Add-On Module

MP2t
2-85

Revision No.: _____ Date: _____ Page _____ of _____

BTN: _____ Primary DN: _____

Customer Name: _____

Section I - Module Detail

Add-On Module 1

Key	DN/Feature	Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information	Key	DN/Feature	Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information
20		Y							29		Y						
19		Y							28		Y						
18		Y							27		Y						
17		Y							26		Y						
16		Y							25		Y						
15		Y							24		Y						
14		Y							23		Y						
13		Y							22		Y						
12		Y							21		Y						

Add-On Module 2*

Key	DN/Feature	Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information	Key	DN/Feature	Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information
38		Y							47		Y						
37		Y							46		Y						
36		Y							45		Y						
35		Y							44		Y						
34		Y							43		Y						
33		Y							42		Y						
32		Y							41		Y						
31		Y							40		Y						
30		Y							39		Y						

Add-On Module 3*

Key	DN/Feature	Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information	Key	DN/Feature	Lamp	1 MADN MCA	1 MADN SCA	2 RING R/NR	3 PRIM P/N	4 Key List	5 Addt'l Feature Information
56		Y							65		Y						
55		Y							64		Y						
54		Y							63		Y						
53		Y							62		Y						
52		Y							61		Y						
51		Y							60		Y						
50		Y							59		Y						
49		Y							58		Y						
48		Y							57		Y						

*When a M536 replaces the last two M518s, the key numbering sequence on the M536 is the same as the last two M518 units.

Notes:

1. Multiple Appearance Directory Number (MADN) Descriptors – Multiple (MCA) or Single (SCA) Call Arrangement
2. Ring (R) or No Ring (NR)
3. Primary (P) or Non-Primary (NP)
4. Subset Features will require a Key List showing the actual number assigned to the Key associated with the Director Numbers that the features will affect. Subset features are: ESM, E5E, E9G, E3P, ESX, ESZ and KSH.
5. Feature Information e.g., Call Pick-Up Group Number, Call Forward Number, etc.

Establishing New Line (single line set)

```
---S&E
IBG  600
I    WTQAA/CX 1483/PIC 288C/CSR C,G/RES 14
I    9ZR  /CX 1483
```

Establishing New Console

Single Console

```
---S&E
I  CONCX/CX 0001
I  9ZR  /CX 0001
I  9ZR  /CX 0001
I  9ZR  /CX 0001
```

Multiple Consoles

```
---S&E
I  CONCX/CX 5678
I  9ZR  /CX 5678
I  9ZR  /CX 5678
I  9ZR  /CX 5678
I  CONCX/CX 6789
I  9ZR  /CX 6789
I  9ZR  /CX 6789
I  9ZR  /CX 6789
```

NOTE: The USOC 9ZR appears three times for a DMS100 console because 3 cable pairs are required (talk, transmit, receive).

Establishing New Business Set (No MADN)

```
TN   346-M063
ORD  N2320200232/CS FYDPC

---LST
INP  PORTAGE; COUNTY OF
ILA  1516 CHURCH
---S&E
IBG  600
I    9ZR  /CX 1567
I    WTQPS/CX 1567/PIC 288C/RES 14
```

NOTE: The telephone number following the Business Set USOC is the Primary number for that set. This number will always appear on Key 1 of the Business Set. In the example above the Primary number is 1567.

Establishing New Business Set (MADN)

```
---S&E
RBG  1/DI CHILDHOS

I    WTQPS/CX 0790/PIC 288C/RES 15
     /CSR M
I    9ZR/CX 0790
I    WTQPS/CX 4557/PIC 288C/RES 15
     /CSR M
I    9ZR/CX 4557
```

MADN

When a telephone number is assigned to more than one Business Set or single line set, that telephone number is called a **Multiple Appearance Directory Number**. All telephones having this telephone number are called a MADN group. MADN groups can consist of 2 to 32 stations and can be configured in a Single Call Arrangement (SCA) or a Multiple Call Arrangement (MCA).

With single call arrangement only one set can be active on that number (originating/terminating) at one time.

With Multiple Call Arrangement (MCA) more than one set can be active on that number (originating/terminating) at one time.

In a MADN group one telephone number must be designated as the "Owner" or primary location. This set has control of features that are assigned to the MADN number. A MADN number can be configured to either ring or not ring at each set in the group.

NOTE: Remember that the Primary Directory Number of a Business Set will always appear on Key # 1 and should be used to identify the physical location of the set at the premises.

Establish Business Set (With Add-On Modules)

```
TN    346-M065
ORD   N2320200233/CS FYDPC
DD    07-04-87

---LST
INP  PORTAGE; COUNTY OF
ILA  1516 CHURCH

---S&E
IBG  600
I    WTQPS/CX 1560/PIC 288C
I    3ZS01/CX 1560
I    3ZS02/CX 1560
I    3ZS03/CX 1560

---RMKS
RES  14
```

STATION RINGER TEST

After the loop has been tested and meets all the Loop Requirements, the loop should function with the Meridian Business Set. To ensure that the loop and Central Office works properly with the Business Set, the Technician should perform the Station Ringer Test. The Technician should do this test three times in a row in order to completely test the set and the Central Office.

The Station Ringer Test can be performed on the customer's premises with no involvement of the Central Office personnel.

SET UP PROCEDURES

With the handset on-hook and all Liquid Crystal Display (LCD) indicators off, press a loop key and dial the Ring Back Test code. Normally, this code will be 979 or 977 followed by the last four digits of the telephone directory number from which the call is originated. If the last four numbers are incorrect, a REORDER tone will sound which makes it necessary to press the RELEASE key and start again. If all the digits are correct, all LCD indicators on the set will light up. The test can now proceed according to Chart 1.

STATION RINGER TEST - KEY SEQUENCES (CHART 1)

Note 1: Perform operations in the order as given in Chart 1. Operate key or switch as given in the "Key" or "Switch" column. The response must be as given in the "Response" column. The column headed "Messages Used" indicates the messages generated to produce the correct response.

Note 2: If 20 button add-on units are present, Step 17 and 26 inclusive must be repeated for each strip of 10 numbers of each unit.

Note 3: The only messages which are not tested are "Turn On/Off Handsfree Control" and "Open/Close Echo Mode" which are not used by call processing.

CHART 1
STATION RINGER TEST - KEY SEQUENCES

STEP	KEY OR SWITCH OPERATED	RESPONSE OBSERVED	MESSAGES USED
1	Handset Off-Hook	All LCD Flash	LCD Indicator Flash
2	Handset On-Hook	All LCD Wink	LCD Indicator Wink
3	Handset Off-Hook	All LCD On	LCD Indicator On
4	Handset On-Hook	All LCD Off	LCD Indicator Off
5	Dial Pad Key 1	Set LCD 0 On	Soft Reset, LCD On
6	Dial Pad Key 2	Set LCD 1 On	Soft Reset, LCD On
7	Dial Pad Key 3	Set LCD 2 On	Soft Reset, LCD On
8	Dial Pad Key 4	Set LCD 3 On	Soft Reset, LCD On
9	Dial Pad Key 5	Set LCD 4 On	Soft Reset, LCD On
10	Dial Pad Key 6	Set LCD 5 On	Soft Reset, LCD On
11	Dial Pad Key 7	Set LCD 6 On	Soft Reset, LCD On
12	Dial Pad Key 8	Set LCD 7 On	Soft Reset, LCD On
13	Dial Pad Key 9	Set LCD 8 On	Soft Reset, LCD On
14	Dial Pad Key 0	Set LCD 9 On	Soft Reset, LCD On
15	Dial Pad Key *	All Set LCD ON	Soft Reset, LCD On Save Indicator Status
16	Dial Pad Key #	All Set LCD Off	Soft Reset
17	Feature Key 0	Set LCD 0 On	Soft Reset, LCD On
18	Feature Key 1	Set LCD 1 On	Soft Reset, LCD On
19	Feature Key 2	Set LCD 2 On	Soft Reset, LCD On
20	Feature Key 3	Set LCD 3 On	Soft Reset, LCD On
21	Feature Key 4	Set LCD 4 On	Soft Reset, LCD On
22	Feature Key 5	Set LCD 5 On	Soft Reset, LCD On
23	Feature Key 6	Set LCD 6 On	Soft Reset, LCD On
24	Feature Key 7	Set LCD 7 On	Soft Reset, LCD On
25	Feature Key 8	Set LCD 0&7 On	Soft Reset, LCD On
26	Feature Key 9	Set LCD 1&7 On	Soft Reset, LCD On
27	Hold Key	Dial Tone and LCD 0 0 to 4 On Volume Up	Soft Reset, Turn On TIP Ring to Speaker LCD On
28	Vol. Up	Volume Up	None (Test Voice)
29	Vol. Down	Volume Down	None (Volume Control)
30	Handset Off-Hook	Dial Tone from Handset Only and all LCD F1.	Turn Off Tip/Ring to Speaker, Turn Off Handset, LCD Flash
31	Handset On-Hook	Cont. Dial Tone (Alert A), and All LCD Wink	Turn On/Off Alert A, LCD Wink
32	Hold Key	1 sec. of Buzz (Alert B), and LCD 5 to 7 ON	Turn On/Off Alert B, LCD On
33	Hold Key	Ringing	Turn On Tone Ringer
34	Vol. Up	Volume Up	None (Test Alert)
35	Vol. Down	Volume Down	None (Volume Control)
36	Hold Key (Depress Slowly 3 Times)	--	Hard Reset