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BZ-RS
User's Guide

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About this information product

Purpose

This document has the purpose of providing the procedures and major guidelines that support the Operations, Administration and Maintenance of the BZ-RS.

Reason for reissue

Changes required after tests.

Safety Labels

1 System Overview

Overview

Purpose This chapter presents an overview of the BZ-RS, covering from its system architecture to the description of each board.

Architecture

This feature has the purpose of providing the capability for the R/EAIU to support Emergency Standalone (ESA) operations when all primary communication access to the host switch is severed for any reason. This is accomplished with the introduction of the BZ-RS hardware and software package, which takes over call processing for the affected AIU shelf.

NOTE: Only loop start POTS lines will be supported.

The architecture for the BZ-RS in the ESA application is depicted in the figure below:

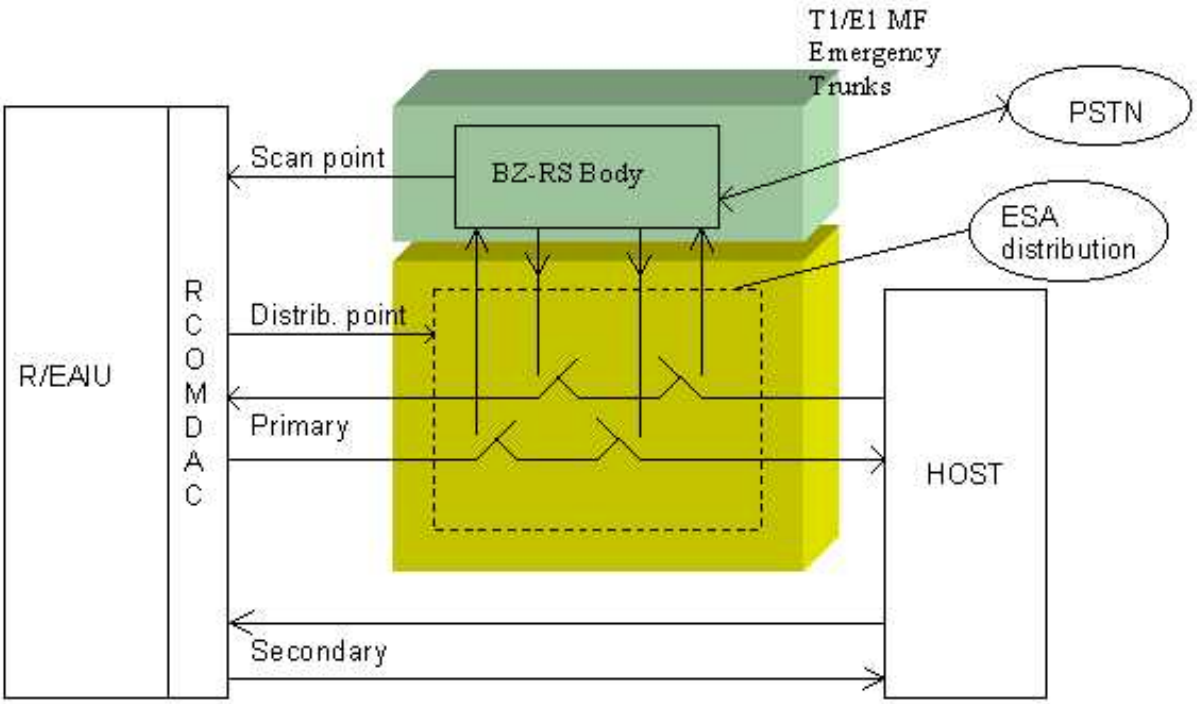


Figure 1-1 - ESA System Architecture

BZ-RS is located outside the R/EAIU shelf, but is physically placed close to it. The transmission facilities are handled by a distribution frame named ESA distribution panel (EDP), where the switches (relays) will also reside. The BZ-RS body is a separate package with connectors where the cabling going to/from the ESA distribution panel can be fixed. In case the BZ-RS body has to be removed for maintenance purposes, the R/EAIU will have its connection to the host preserved. This ESA distribution panel is detachable from the main body.

Primary facilities are defined as the ones that carry the R/EAIU signaling and control channel. Secondary facilities are all other transmission facilities connected to the R/EAIU. The primary transmission facilities go through the ESA distribution panel so that the BZ-RS can have access to the control channel under emergency situation. The secondary facilities do not go through the ESA distribution panel.

In normal operation, the relays are set such that the primary facilities simply pass through the ESA distribution panel, as illustrated in Figure 2. The BZ-RS is in standby.

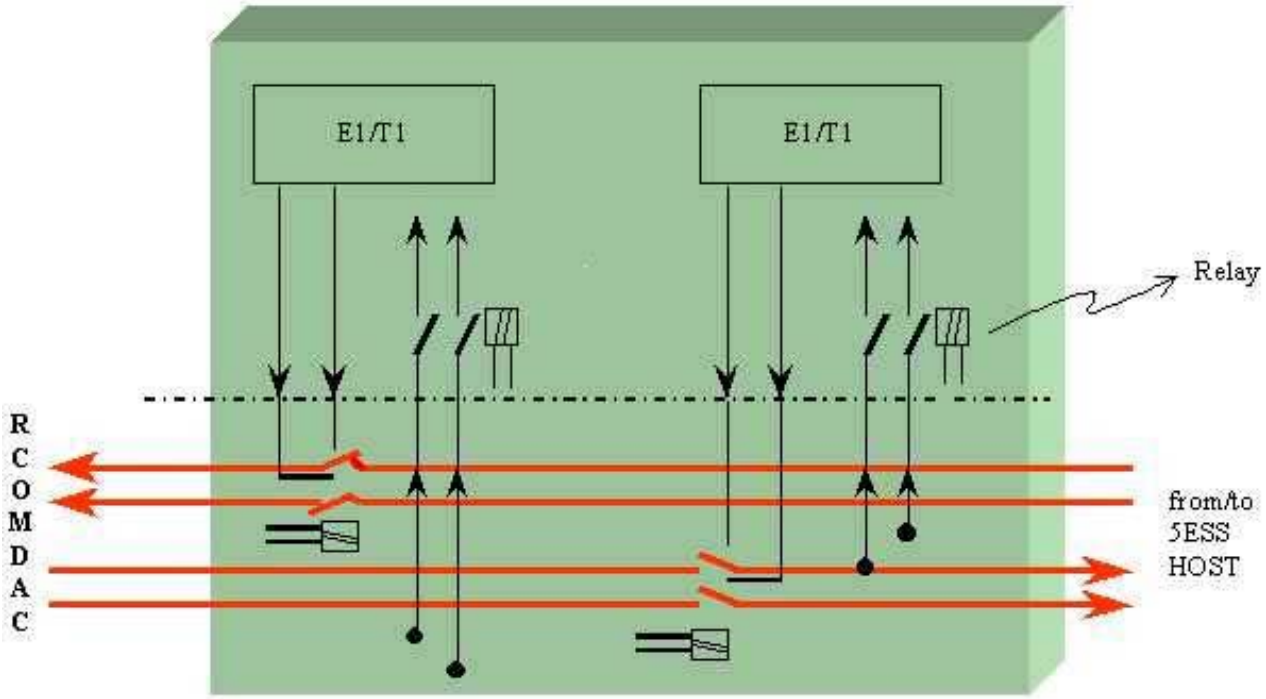


Figure 1-2 - Relay configuration in normal operation

In emergency operation, the switches (relays) are reconfigured. The new situation is depicted in figure 3. The BZ-RS supplies one T1/E1 device in order to connect to the RCOMDAC and an additional T1/E1 device in order to keep monitoring the Host side and detect when transmission gets reestablished.

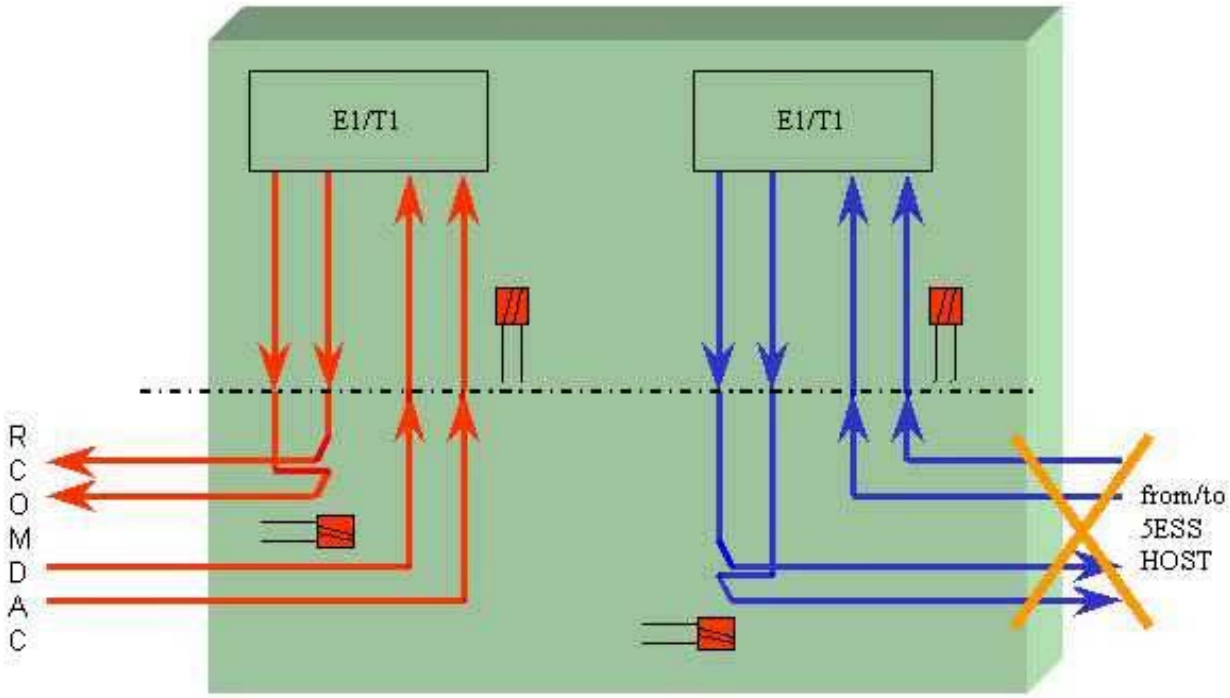


Figure 1-3 - Relays reconfigured for emergency mode

The number of channels available for audio connections is limited to 46 or 58, depending on having T1 or E1, since two primary facilities are available per R/EAIU.

As a consequence of this architecture, the BZ-RS makes it possible to make calls within and between R/EAIU's that are in emergency mode. The other R/EAIU units that are under normal operating conditions will not be able to communicate with the R/EAIU's that are in ESA. Also, the BZ-RS allows for making emergency calls (i.e. 911) through two MF trunks (T1) using R1 signaling.

The operation of the BZ-RS in conjunction with the R/EAIU shelves does not interfere with the existing functionality of the shelf.

□

Management Structure

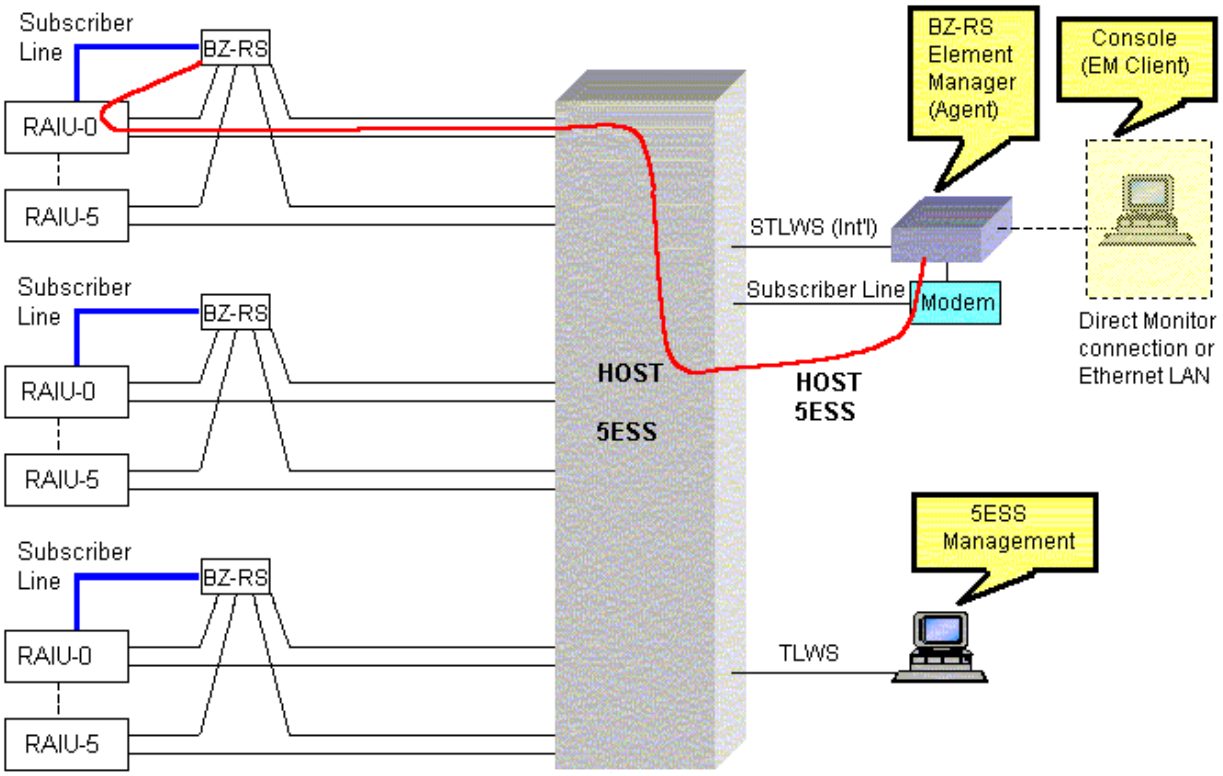
Overview

The BZ-RS has a separate management system, which requires a separate network of management communication links. Each BZ-RS is equipped with a modem that connects to the Element Manager. The connection is done via dial-up lines or semi-permanent lines. For this purpose, one R/EAIU subscriber line must be reserved for the connection of the BZ-RS modem. In case the choice is for the use of semi-permanent lines, there is a pool of modems serving the Element Manager. By choosing dial-up connections, one modem is sufficient.

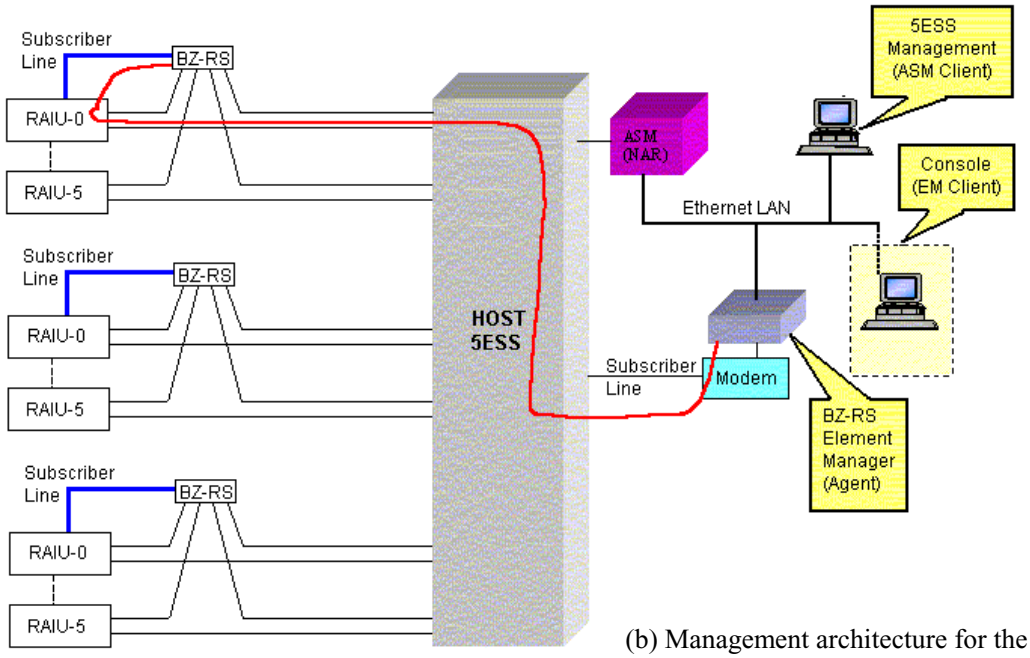
A console is connected to the Element Manager for providing a Human/Machine Interface. There will be only one console for managing all BZ-RSs within a 5ESS switch.

The BZ-RS Element Manager is able to manage up to 20 BZ-RSs in the dial-up mode and up to eight BZ-RSs in the semi-permanent line mode.

The Element Manager is based on a PC running Windows NT as operating system.



(a) Management architecture for the International version



(b) Management architecture for the NAR version

Figure 1-4 - BZ-RS Management Architecture

BZ-RS management will only be available as long as the primary transmission facilities of the R/EAIU where the BZ-RS derives its modem connection from is available.

Subscriber´s Data Base

The BZ-RS has to be aware of the Directory Number x Equipment Number (DNxEN) mapping for all subscribers present in the R/EAIU´s for which it is responsible. The BZ-RS shall also acquire the subscriber billing number. This is the number reported as "Calling Party ID" in Emergency services such as 911. It is also necessary to acquire the information on whether a given subscriber is configured as loop start or ground start.

The acquisition of such data is done by the BZ-RS Element Manager querying 5ESS database in a frequent basis. The frequency of the queries is a configurable parameter, so that it can be adjusted to best meet the user needs.

Note: Information regarding hunting groups is not acquired automatically. This information must be provisioned and updated manually by the operator.

Other subscriber data to be provided is the mapping of service codes to terminal directory numbers serving them (service codes that are known to the user but that require translation to specific terminal directory numbers). It may result that in emergency mode the terminal number normally doing the service is not reachable by the R/EAIU. This is the situation when the terminal doing the service resides in the Host 5ESS for instance. However, it should be possible in emergency situation to define an alternative terminal for serving calls to that given service. That data is provisioned through the BZ-RS Element Manager (via the console). The information to be entered by the operator is grouped in a similar way as in the existing 5ESS console views.

The operator shall inform the EM the Identities of the R/EAIU´s that support the ESA feature. The R/EAIU identity shall be exactly the same as identified at the 5ESS. Based on this information, the EM will query the 5ESS database for these R/EAIU´s.

The operator is allowed for querying parameters from the EM and BZ-RS database. The results of such query are printed on the EM screen. Therefore, the service code translation table as well as the subscriber's database can be audited by the operator if desired.

Miscellaneous Parameters

Other 5ESS parameters are also provisioned to the BZ-RS, such as:

- Ring cadence;
- Audible tone characteristics (ring back tone cadence, busy tone cadence, etc…)
- Timer values such as inter-digit dialing, no answer timer, etc.

Since these data do not change frequently, they are configured directly from the BZ-RS Element Manager console at installation time.

BZ-RS Exclusive Data Base

There are parameters that will be exclusively related to the BZ-RS:

- The mapping of the T1/E1 Facility ID to R/EAIU´s ID
- Identification of Primary facilities
- R1 signaling parameters (for the emergency trunk)
- Recorded announcements (if any)
- Percentage of emergency trunk or RAIU facility channels reserved for priority calls
- Table of destination numbers that shall be treated as high priority (hospital, police, fire dept., etc.)

These parameters are directly provisioned at installation time from the BZ-RS Element Manager console. They are very unlikely to change. When changes are necessary though, they can be done at any time from the console.

□

Switching Structure

Two Ambassador T8105 time slot interchangers perform all switching functions.

Figure 1-5 shows a simplified diagram of this component.

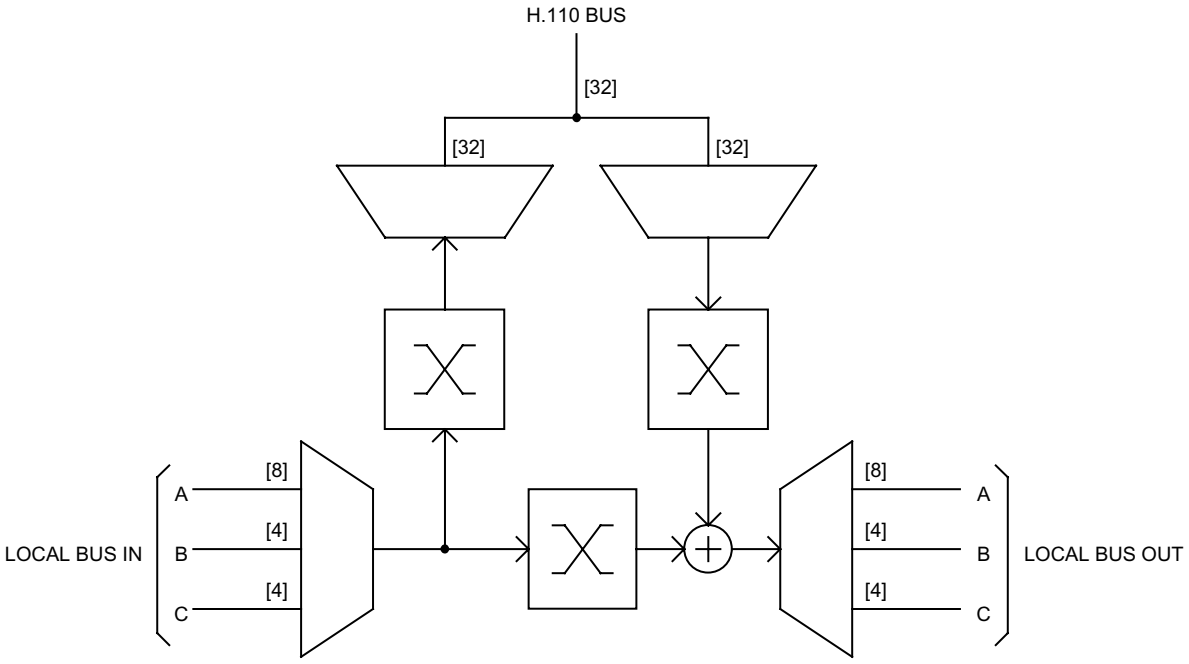


Figure 1-5 - T8105 simplified diagram

Local bus has up to 16 serial inputs and 16 serial outputs programmable for 2.048 Mbits/s, 4.096 Mbits/s and 8.192 Mbits/s operation. These serial streams are divided into three groups being the first one composed of 8 streams (A) and two other groups of four streams each (B and C). Streams may operate at maximum rate (8.192 Mbits/s) on 8 physical inputs and 8 physical outputs (totaling 1024 time slots on the local bus). Choices for slower input or output rates allow enabling of additional physical inputs or outputs.

H.110 bus has 32 bi-directional streams operating at 8.192 Mbits/s each, totaling 4096 time slots.

Two built-in time slot interchangers are included. The first provides a local switching domain with up to 1024 programmable connections between time slots on the local bus. The second supports up to 256 programmable connections between any time slot on the H.110 bus and any time slot in the local switching domain.

Figure 1-6 shows the switching architecture using two T8105.

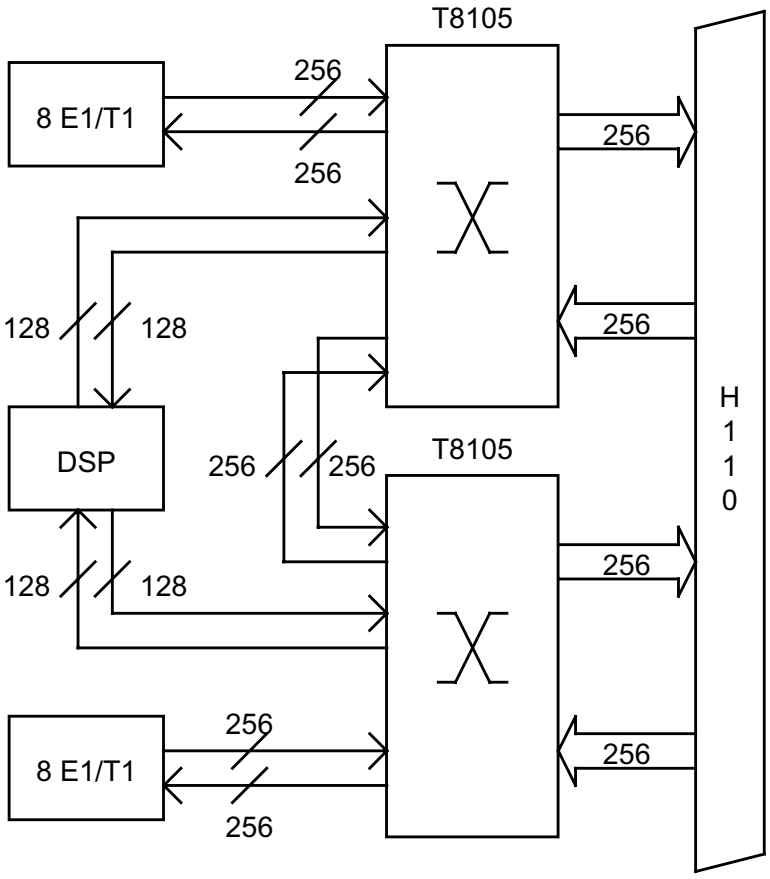


Figure 1-6 - Switching architecture

The numbers in figure 2 depict the amount of time slots on the corresponding connection.

8 E1/T1 framers are connected to each T8105 by means of two streams working at 8 Mbit/s (one stream for each quad framer).

In order to allow for the switching between time slots within the same board without the need to occupy any bandwidth on the H.110 bus, two streams are used to connect one T8105 to the other.

Another two streams are used to connect the DSP one for each T8105.

The remaining streams (3 for each T8105) are left disconnected.

T8105 receive its synchronizing signals from the clock synchronization section. These signals are an 8 MHz bit clock and an 8 KHz frame synchronization signal.

□

Clock Synchronization Structure

The figure bellow shows a simplified block diagram for the clock synchronization architecture used on the H.110 bus.

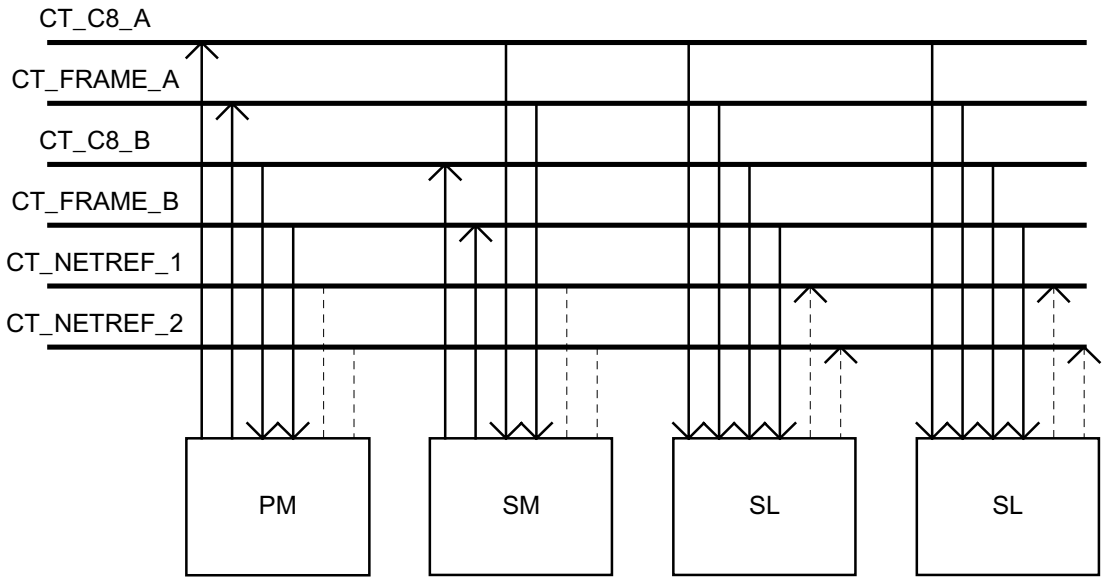


Figure 1-7 - Clock synchronization architecture used on the H.110 bus.

The Primary Master (PM) board is defined as the one that drives CT_C8_A and CT_FRAME_A signals. It receives the corresponding B signals in order to monitor the clocks generated by the Secondary Master (SM) board. The primary master may synchronize to one of the two CT_NETREF signals. If the board is connected to the network via E1/T1 facility, it may drive one or both CT_NETREF signals with the clock derived from the facilities and synchronize to the same clock.

The Secondary Master board is defined as the one that drives CT_C8_B and CT_FRAME_B signals. It receives the corresponding A signals in order to monitor the clocks generated by the Primary Master (SM) board and to synchronize to them. In the event of a failure on the Primary Master, the Secondary Master switches its clock reference to a facility-derived clock (if the board is connected to the network) or to one of the two CT_NETREF signals. Since it was previously synchronized to the Primary Master, no phase hit occurs during this operation.

The Slave (SL) boards receive both A and B signals with the highest priority being given to A signals. These boards may drive one or both CT_NETREF signals.

The following figure shows the architecture that is used for the selection of the reference source for clock synchronization.

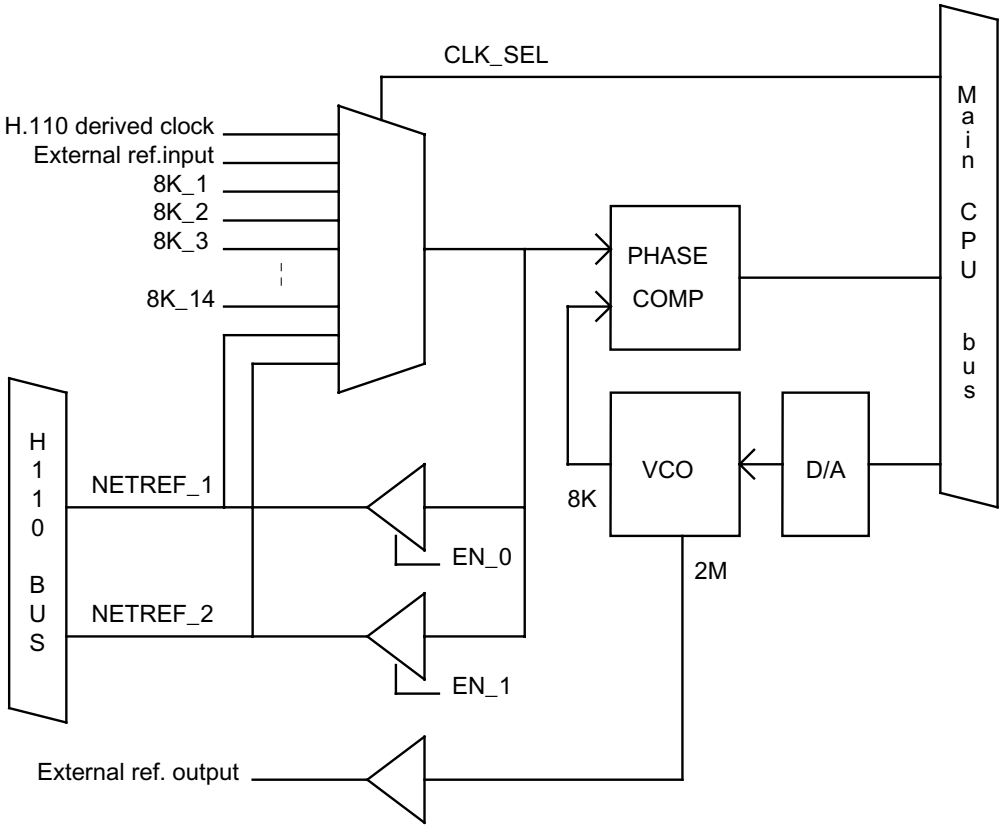


Figure 1-8 - Selection of the reference source for clock synchronization.

This architecture allows for the selection of a clock reference supplied by any framer among the 16 available. In addition, any of the two NETREF signals as well as an external input clock can be used as a reference too. The chosen reference from a framer may be used to drive either NETREF_1 or NETREF_2. The H.110 derived clock is provided to allow for the synchronization between two clock master boards.

The CPU controls the master oscillator (VCO) by reading the phase error from the phase comparator, performing the PLL algorithm and writing the resulting control word to the D/A converter.

One external 2.048 MHz output synchronization signal is available on each MXTS board. This output can drive 75 and 120 ohms loads (2.37 Vp @ 75 ohms / 3.00 Vp @ 120 ohms) and can be set balanced or unbalanced. As to the output signal, the external input clock reference interface has the same electrical characteristics. All these settings are configured at specific pins set connection.

Packs

CPU Pack

Any Intel® X-86 processor based CompactPCI form factor card. It is a commercial off-the-shelf pack, and its requirements are:

- Intel® (based) Pentium 133 MHz or higher;
- 64 Mbytes DRAM or higher;
- 32 Mbytes FLASH Memory or higher;
- 32 bits 33 MHz PCI interface;
- internal watch-dog-timer;
- at least one Ethernet interface;
- at least one RS232 serial interface;
- CompactPCI standard form factor (6U - 4 or 8 HP);
- MTBF higher than 75,000 hours;
- Full passive cooling system;

MXTS Pack

MXTS stands for “Module for Switching, Trunks and Signaling”. It is the main pack of the BZ-RS. It consists of a TDM Switching Fabric H.110 interface compatible, sixteen T1/E1 trunks, one signaling DSP processor, Modem, serial and Ethernet interfaces and a PCI interface.

The MXTS pack is fully controlled by the system main CPU (CPU Pack), via PCI interface; this also includes its DSP processor, which basic function is to operate as MXTS signaling processor (e.g. tone detection/generation). The DSP software is also downloaded by the CPU pack.

The TDM-wise devices in the MXTS have bi-directional TDM paths (8.192 MBPS or 128 DS0 each path) to the TDM Switch Fabric, which is also connected to the external H.110 bus so that MXTSes can form TDM paths among them. Thus, devices (e.g. any trunk interface) in one MXTS can be programmed to obtain a TDM path (DS0) to devices in other MXTS through TDMs Switches and H.110 bus. The main features/characteristics of the MXTS are:

- CompactPCI front card 6U (4 HP) form factor.
- 32 bit 33 MHz target PCI interface with hot-swap capability, PICMG 2.1 compliant.
- 16 T1 or E1 (ITU-T G.703) interfaces – framer type selected by software.
- Texas Instruments® DSP 6x family (TMS320C6202) 2,000 MIPS processor
- 16 Mbytes of external SDRAM

- 8 Mbytes FLASH memory
- H.110 (and internal) non-blocking TDM switch with hot-swap – based on Lucent T8100 family (2 X T8105 IC)
- Synchronization circuitry (Stratum 3E or 4E – depending on the application) from any T1/E1 trunk or the external 2.048 MHz input.
- Clock output 2.048 MHz
- One 10BaseT Ethernet interface
- One Serial interface 16550 compatible
- Modem V.90/K56flex™/V.34/V32bis – Conexant SocketModem Family
- 7 electrically insulated Distribute Points (output control to other equipment)
- 8 Scan Points (external sensor/alarm reading)
- 3 face plate bicolor LED lamps indicators (one controlled by the DSP processor and the remaining by the CPU pack)

STCA

CompactPCI makes use of transition cards in order to connect the front pack signals to outer equipment. Each transition card is plugged on the back of CompactPCI cabinet on the equivalent position (same direction) of the front card so that the signals can be exchanged between them – there are specific pins with this functionality in the CompactPCI standard. STCA (Sub-module "Transition Card" type "A") is the MXTS's customized transition card.

STCA has the following functions related to its MXTS:

- allow MXTS Trunks connection to EDP;
- assign Trunks (E1/T1) impedance depending on the cables used;
- Trunks surge protection;
- make MXTS Ethernet interface connection available;
- allow Scan and Distribute points connection to EDP;
- allow Modem connection (Tip and Ring signal) to EDP;
- program unit identification number – 8 bits dip-switch (factory setting);

EDP

EDP is the "Emergency Standalone distribution Panel". It is connected to the BZ-RS CompactPCI cabinet via specific set cables – one end at EDP, other end at STCAs connectors. Its main function is to allow the facilities (T1/E1) used on E/RAIU survivability as well as other external interfaces (eg. Modem and Scan/Distribute Points) to be connected to the BZ-RS.

Two packs (PEDA and PEDB) and a metallic frame form EDP. PEDA and PEDB are attached to this frame. Six SCESes packs are connected on PEDA and other six on PEDB. In addition, there are two metallic box (one for PEDA and other for PEDB), with the purpose to shield the PEDA and PEDB sensitive parts (e.g. SCESes) from EMI and hold SCESes on their specific positions (see figure below).

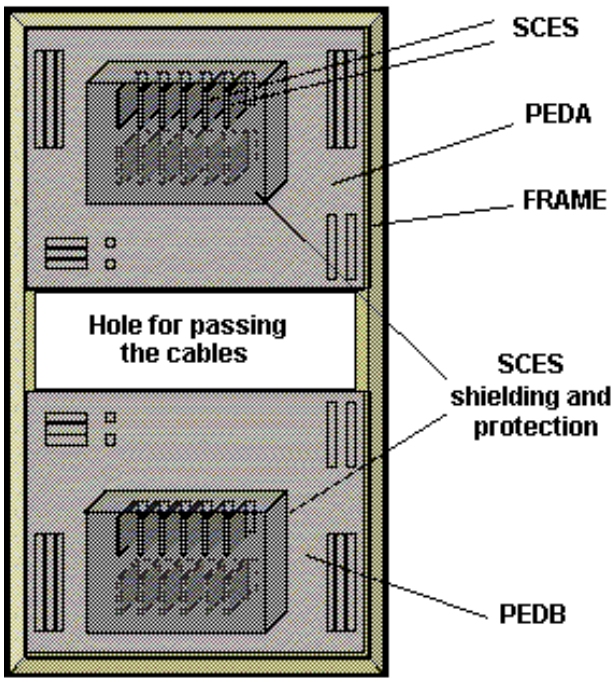


Figure 1-9 - EDP

The next figure shows the CompactPCI cabinet collocated and interconnected with the EDP.

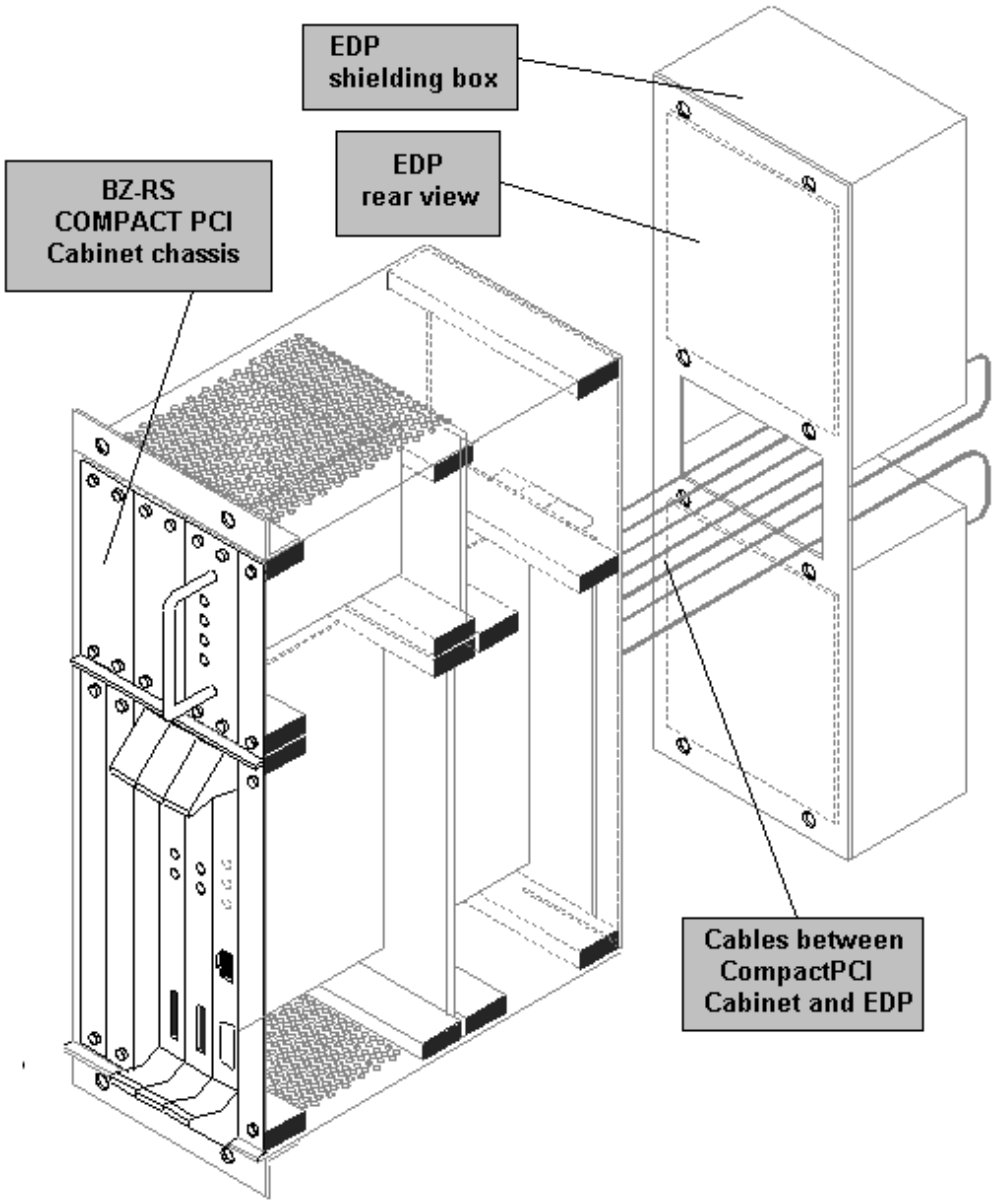


Figure 1-10 - CompactPCI cabinet collocated and interconnected with the EDP

PEDA and PEDB

PEDA and PEDB are the actual packs where all connections of the EDP go. PED stands for Panel for Emergency-standalone Distribution, A for the upper and B for the lower. Both, A and B, have the same functions and number of connectors; they differentiate only in form factor in order to allow better connection disposition.

Figure below shows both packs and their main connections.

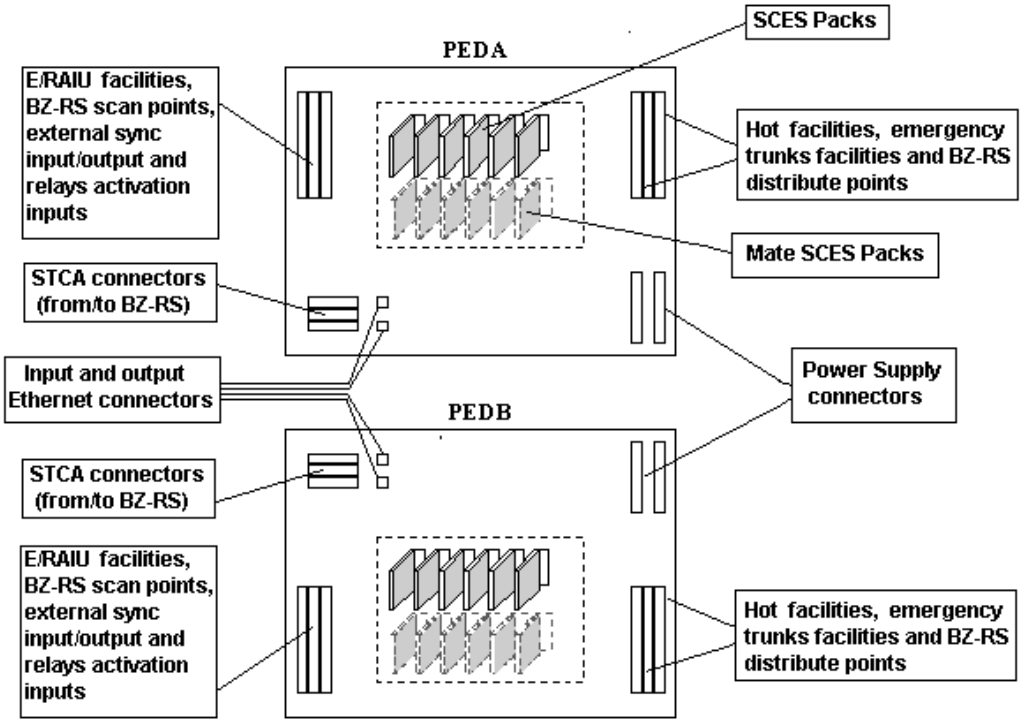


Figure 1-11 - PEDA and PEDB

SCES is PEDA/B daughter boarad. In each one can be plugged up to twelve SCES packs, but actually, only six are current connected. The upper six SCESes connectors are wired in parallel (two by two) with the lower six providing SCESes spare connections. Although connecting a SCES in upper or lower position does not make any difference in the functionality, the lower ones are considered spares. The purpose of the spare connectors is to allow a SCES replacement without any service interruption. Next figure illustrates SCES connectors wiring on PEDA/B.

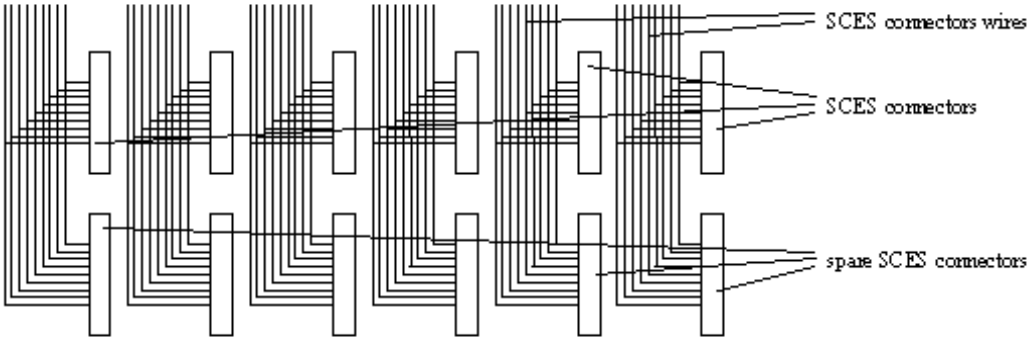


Figure 1-12 - SCES connectors wiring on PEDA/B

SCES SCES (Sub-module for "Connection to ESA") pack function is to connect the facilities (T1 or E1 trunks) to BZ-RS when emergency operation is requested by E/RAIU. For each E/RAIU facility (Tx and Rx) there is one SCES. In normal operation (non ESA) SCES keep the facilities connected between E/RAIU and the host switch. SCES. The figure below illustrates this operation. The SCES relays are powered when the RCOMDAC's Distribute Point is activated (short-circuited), switching the facilities to BZ-RS

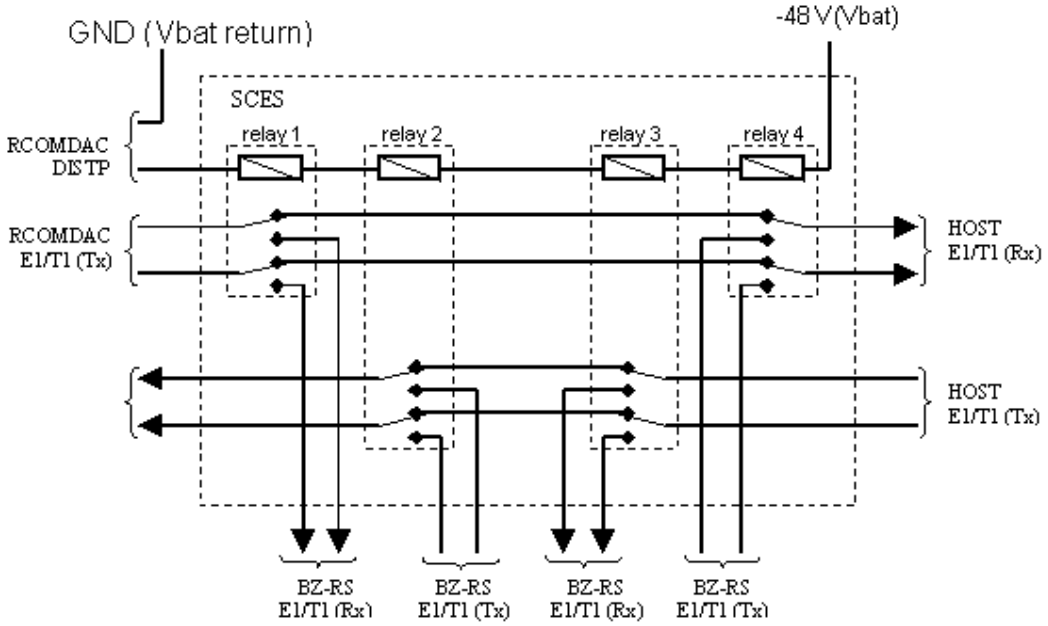


Figure 1-13 - SCES

2 Management (CSR)

Overview

Purpose This chapter describes the installation and use of the management system of the BZ-RS.

General Description

The BZ-RS Element Manager (EM) provides the operation, administration, maintenance and provisioning (OAM&P) features to the BZ-RS system and ensures subscriber database integrity between 5ESS switch and BZ-RS.

The BZ-RS EM is based on the Remote Supervision Center (CSR) program, that is a purpose designed operational control system for the BZ-RS Switches. The CSR software has a client-server architecture. The client and the server portions are implemented by instances of the CSR program working in different modes. The CSR can also be used as standalone program, in which case it establish connections to the switches – one at a time – directly, without the mediation of a server CSR.

NOTE: The *Client* and *Server* CSR are both installed through the installation of the **CSR-IP** software.

The client CSR is the software that presents the EM graphical user interface, as shown in the Figure 2-1.

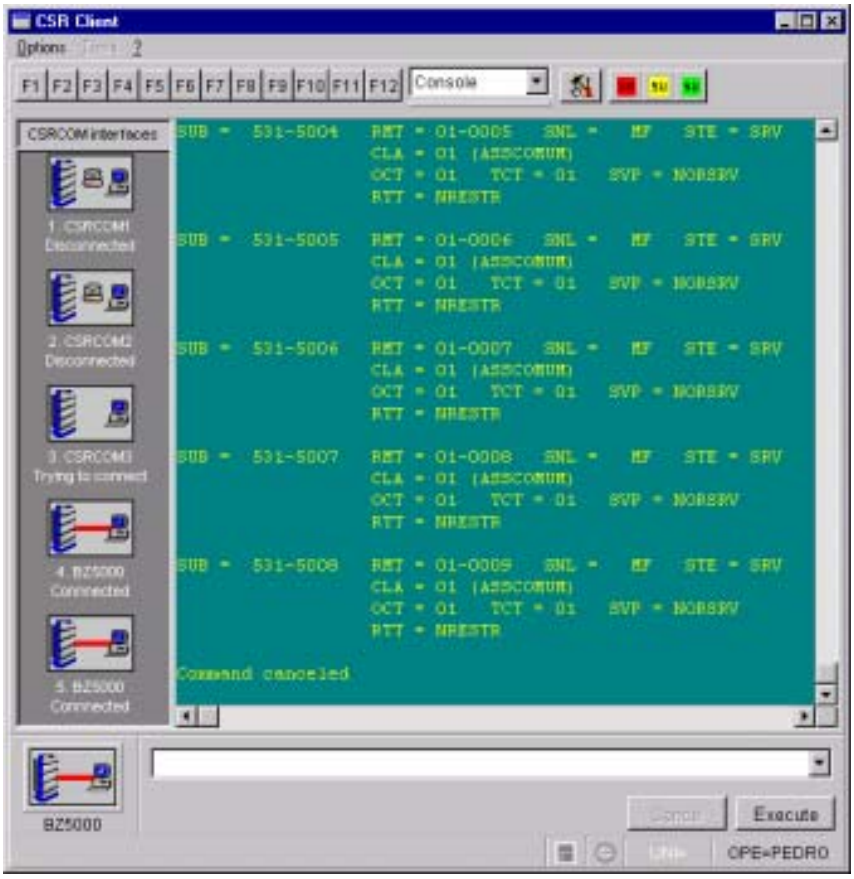


Figure 2-1 - The client CSR user interface

It provides a command line interface and graphical indications of the managed BZ-RS status.

The server CSR is responsible for the communication to the BZ-RS switches and the subscriber data updates with the RAIU subscriber data collected periodically from the 5ESS switch. The communication between the client and server CSR uses the TCP/IP protocol.

Typically, the client and server CSR are installed in different computers, connected through a LAN. When necessary, both may be installed in the same computer. In the R/EAIU Emergency Stand Alone application, the server CSR is located in the EM computer, embedded in one of the 5ESS shelves. The client is installed in a PC connected to the EM computer.

NOTE: In this Manual, the distinction between the *client* and *server* CSR appears only when specifically necessary. The term “CSR” is used whenever the distinction is not relevant.

The CSR provides operating, maintenance and supervision facilities

for:

- Downloading the switch Control Program;
- Programming a switch configuration;
- Querying data on a switch configuration;
- Querying and altering the switch clock and calendar;
- Querying switch alarm conditions;
- Blocking and unblocking switch subscribers and devices;
- Supervising originated and terminated calls;
- Tracing current calls, identifying the engaged parties;
- Marking devices for test calls;
- Supervising subscriber loops;
- Querying the outcome of subscriber line testing;
- Programming Supplementary Services;
- Configuring the announcement machines;
- Scheduling the collection of supervision data;
- Programming switch traffic supervision;
- Querying the outcome of traffic supervision;
- Programming performance supervision of switch devices;
- Querying the supervision outcome of the switch devices performance;
- Programming the supervision of public telephone status (full coin-box) ;
- Querying the outcome of public telephone status supervision (full coin-box);
- DTMF receiver failures;

- Help function.

The CSR allows operating the switch both locally and remotely. The remote CSR-to-switch communications run over a dialed or private (dedicated) telephone line, an analog modem connecting the equipment to the Public Telephone Network. The local connection is set up by connecting the CSR Program microcomputer serial port to the serial port on the switch CPU.

The CSR should be active in full time to signal alarm situations detected in the switch and sent to it.

The CSR was designed for a supervision capacity of up to 150 registered switches and can active 16 interfaces simultaneously. Each interface can establish communication with one switch. The following interfaces are available: Local, DRL (Dial Remote Line) and PRLP (Private Remote Line)

Each switch should be prior registered, with the information of its installation-site name and an access password. The password is applied whenever a connection is established between the CSR and a switch, in order to deny unauthorized accesses.

The interaction with the operator is carried out by means of a Command Language designed according to ITU-T Recommendations Z.301-Z.341 ("Man-Machine Language: MML").

The operator ID must be registered in the system and he/she must have an individual password. The use of passwords is intended to restrict system access only to authorized personnel.

The system allows selecting the range of commands each operator is entitled to use, thus permitting operator specialization on a functional basis. The set of commands accessible by each operator is defined on an operator-class basis.

□

Software Installation

Requirements

The server CSR requires an IBM-PC® compatible microcomputer with:

- Pentium III Processor or later
- At least 128 Mbytes RAM,:
- CD-ROM disk drive;
- Hard disk with at least 150 Mbytes free space;
- Video monitor;
- WINDOWS/NT or WINDOWS/2000 environment;

The client CSR requires an IBM-PC® compatible microcomputer with:

-
- IBM-PC compatible microcomputer;
- At least 64 Mbytes RAM,
- CD-ROM disk drive;
- Hard disk with at least 80 Mbytes free space;
- Video monitor;
- WINDOWS/NT, WINDOWS/2000/1998/1995 environment.

The client and server CSR installations follow the same process, which starts with the CSR executable installation through the InstallShield program, cli_setup.exe and srv_setup.exe respectively.

Also, the client CSR can be installed in a SUN workstation with:

- Platforms Supported: Sun Ultra[tm] 5, Sun Ultra 10, Sun Ultra 60, Sun Ultra 80 workstations; Sun Blade[tm] 100, Sun Blade 1000 workstations; Sun Enterprise[tm] 220R, Sun Enterprise 250, Sun Enterprise 420R, Sun Enterprise 450 workgroup servers; Sun Fire[tm] 280R workgroup servers.
- CD-ROM disk drive.
- A SUNPCi [tm] II pro Coprocessor card.
- Ethernet node with TCP/IP protocol to SUNPCi card.
- One PCI slot required (a second slot will be used if the serial or parallel port on second backplate is required).
- Operating System: Solaris 2.6, 7 and 8 Operating Environment.
- Memory: 128 Mbytes SODIMM SDRAM, one free DIMM slot, maximum configuration of 1 Gbytes SDRAM.
- Disk Space Required: 40 Mbytes for SUNPCi drivers and DOS and: ~250 Mbytes (WINDOWS 98), ~825 Mbytes (WINDOWS NT), ~1 Gbytes (WINDOWS ME), ~2 Gbytes (WINDOWS

2000).
- Power Required: 25W.
- WINDOWS 2000, WINDOWS 98 second edition, WINDOWS ME, or WINDOWS NT 4.0 environment.

NOTE: The client and server CSR are both installed through the installation of the **CSR-IP** software.Typically, the Client and Server CSR are installed in different computers, connected through LAN network. However, when necessary, the Client and Server CSR software can run at the same computer.

There are two installation files: one to Server CSR and another to Client CSR.

The following procedures show the installation steps.

Server CSR Installation Procedure

For installing Server CSR, insert the installation CD in the CD-ROM drive and run the srv_setup.exe program. The following window will appear:

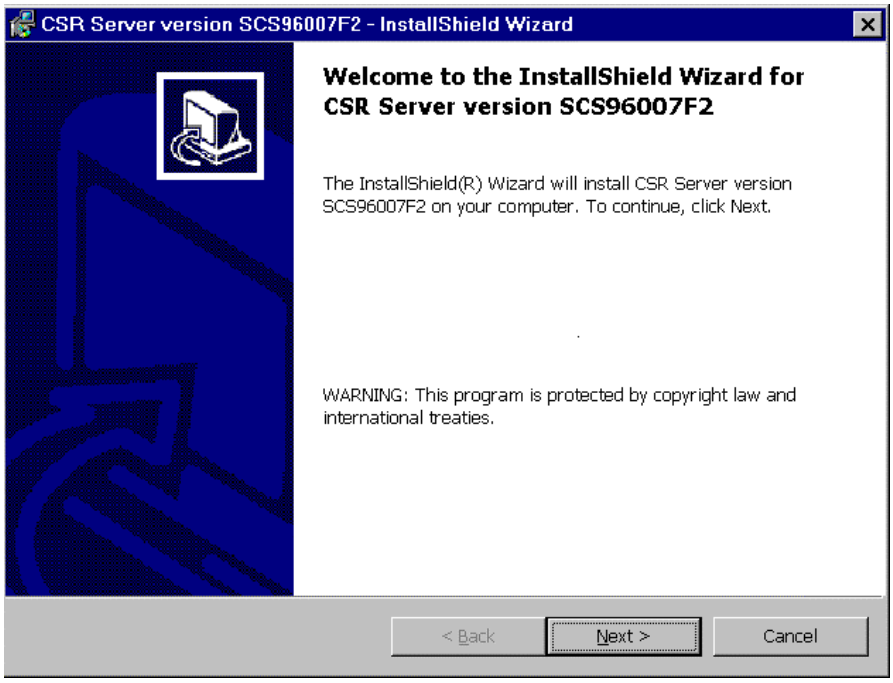


Figure 2-2 - InstallShield Wizard for Server CSR

This software should be installed in the server machine. The installation wizard will guide you during the installation process. Just follow the instructions.

The Server CSR installation automatically configures some Windows shortcut on the desktop area: CSR Server, CSR Client, Help of CSR and AGBD.

The Server CSR shortcut specifies the CSR.EXE program as its executable “target”, with additional parameters specifying the server mode (MODO=AT) and the number of CSRCOM interfaces the server will activate (NCSRCOM=*nn*), as in:

```
C:\CSR\CSR.EXE     MODO=AT    NCSRCOM=4
```

NOTE: The example presume that the user has chosen “C:\CSR” as

CSR's main directory.

In the example above, 4 CSRCOM interfaces will be activated when the server CSR boots up. Up to 16 CSRCOM interfaces can be configured.

Depending on the server CSR configuration, the number of CSRCOM interfaces (NCSRCOM=*nn*) has to be modified. Before the software is executed for the first time, immediately after the installation, this parameter has to be configured accordingly. In subsequent executions, it will assume the configuration used in the last time it was executed. If necessary, in order to modify the shortcut executable target, please do the following:

1. Click on the server CSR shortcut, with the mouse's right button;
2. Select the "Properties" item of the popup menu that appears.
3. In the properties dialog, select the "Shortcut" tag;
4. Edit the "Target" field, specifying the correct number of CSRCOM interfaces (NCSRCOM=*nn*).

NOTE: The target parameters must be specified using CAPITAL letters.

The Client CSR shortcut provide access to the user interface.

The Help for CSR shortcut provide access to help facility for querying switch commands and operating/maintenance functions.

The AGBD shortcut provide access to the *Data Base Agent*. This software is used by server CSR to actualize subscriber parameters in BZ-RS exchange.

Note: The Server CSR and AGBD software are automatically inserted in Windows StartUp.

Client CSR Installation Procedure

For installing Client CSR, insert the installation CD in the CD-ROM drive and run the cli_setup.exe program. The following window will appear:

Figure 2-3 - InstallShield Wizard for Client CSR

This software must be installed in the user machine. The installation wizard will guide you during the installation process. Just follow the instructions.

The Client CSR installation automatically configures two Windows shortcuts on the desktop area: CSR Client and Help of CSR.

The CSR Client shortcut specifies the CSR.EXE program as its executable "target", with additional parameters specifying the client mode (MODO=CLI):

```
C:\CSR\CSR.EXE     MODO=CLI
```

Note: The target parameters must be specified using CAPITAL letters.

Client CSR SUN Installation Procedure

Follow the next steps to install CSR client in a Sun workstation.

1. Insert CD-ROM with client SW on CD drive.
2. Open a terminal window in the workstation
3. Type **`pc`** and hit return. (This will open a new window named SUNPCi. After a few seconds the Windows logon screen will appear in it.)

4. From this point forward, the installation procedure is identical to the procedure completed in a Windows PC (BZ-RS User's Guide Chapter 2).
5. Login on Windows and open File Manager. Under the CD-ROM drive run the cli_setup.exe program.
6. The Windows installer will guide you through the SW installation.

After the installation is completed run the client SW by clicking on the icon created on the Taskbar. (Note that this is different from the Windows PC installation, where the icon is created by default in the desktop rather than in the taskbar)

NOTES: The CSR software always follows "DOS rules" to create names of files and folders.

The installation error messages are in Portuguese and the language will change only after the first successful installation and configuration.

The CSR uninstall keeps configuration and registration files, in order to have the setups and users already registered available for the next installation.

Help Function

The CSR includes a Help facility for querying switch commands and operating/maintenance functions with the CSR program on-line. The CSR Help uses the Windows help program interfaces.

Access to the CSR Help is obtained by setting the mouse cursor on menu item "?", at the top left corner of the CSR Main Screen. The Help Program includes Hypertext facilities. Accordingly, by clicking on underlined text in the Help Program, a new page is opened or a dialog box is displayed. Explanations on the parameters used for running commands via the CSR are given in dialogue boxes, as shown in the Figure 2-4 and 2-5.

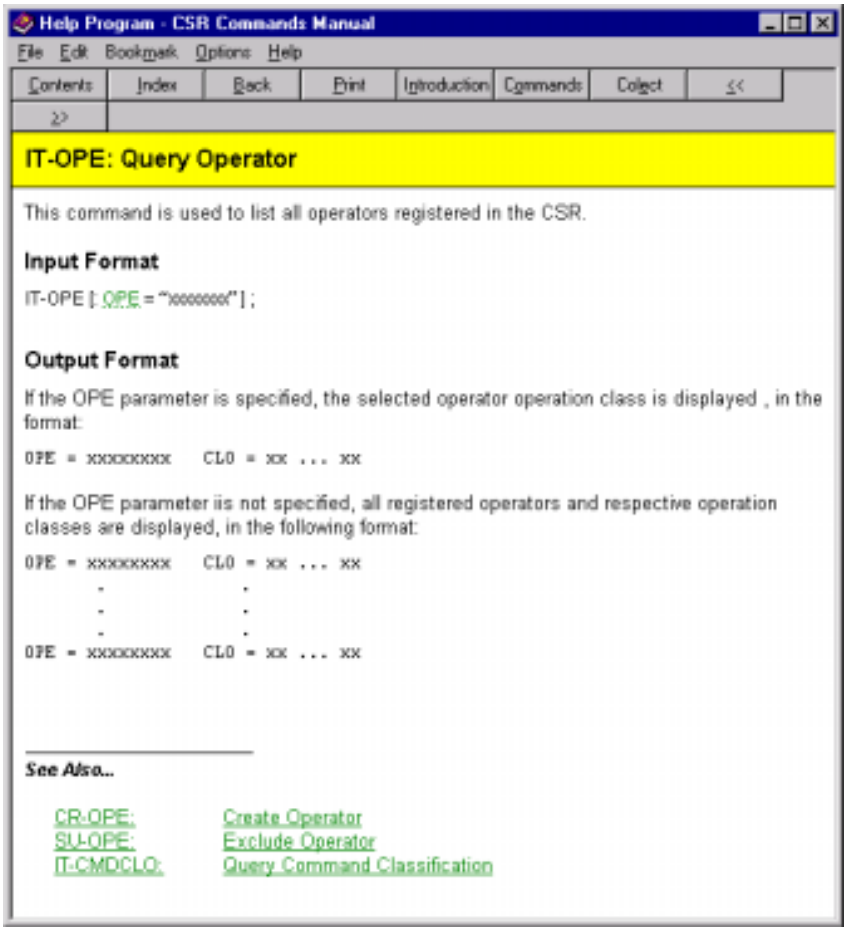


Figure 2-4 - The CSR Help On Line facility

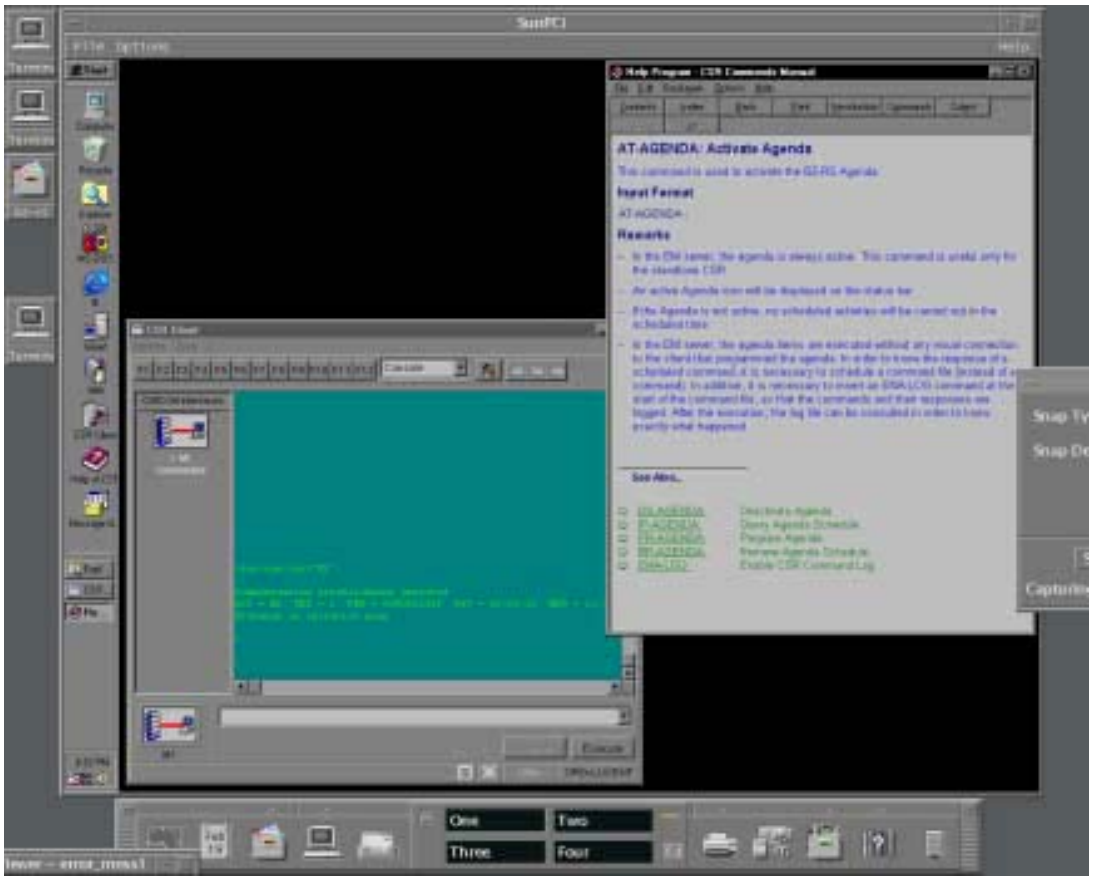


Figure 2-5 - The CSR Help On Line facility and CSR interface in Sun

Another way of consulting the description and syntax of a command to be run is by pressing shortcut Crtl+F1 after entering the command. The Help Program will then open to a window displaying the information related to the command entered.

Operating Environment

The operator-system dialog is carried out via commands and symbols on the CSR Program display. A command is executed in the following steps:

- Reading the operator-edited command;
- Interpreting and executing the command;
- Displaying the command response.

Besides command responses, the system provides autonomous outputs, informing the status of connection/disconnection of the supervision equipment to the switch and the reception of alarms or messages.

As the CSR was designed for running on Windows, its display consists of the widely known features of this OS, such as, for instance: buttons, editing area, title bars, screen scrolling bar and fields. The Figure 2-5 and 2-6 shows the CSR interface elements.

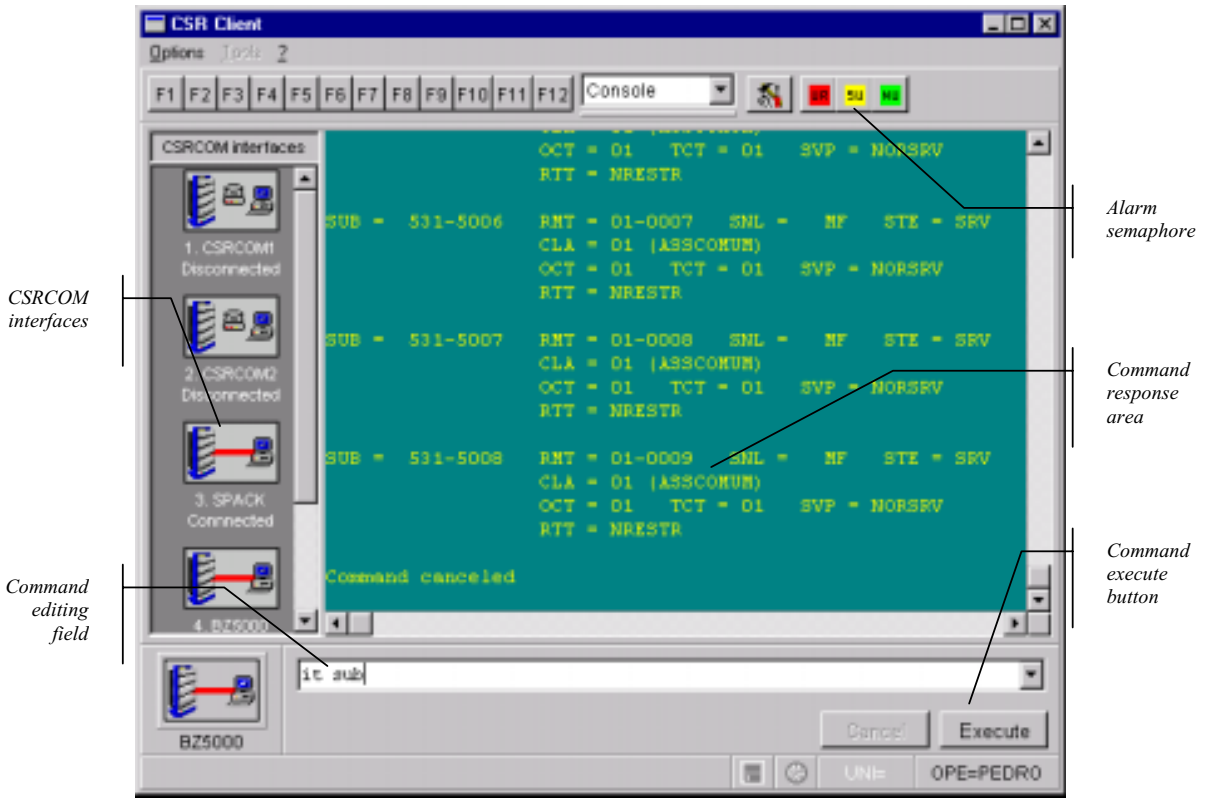


Figure 2-6 - CSR interface elements

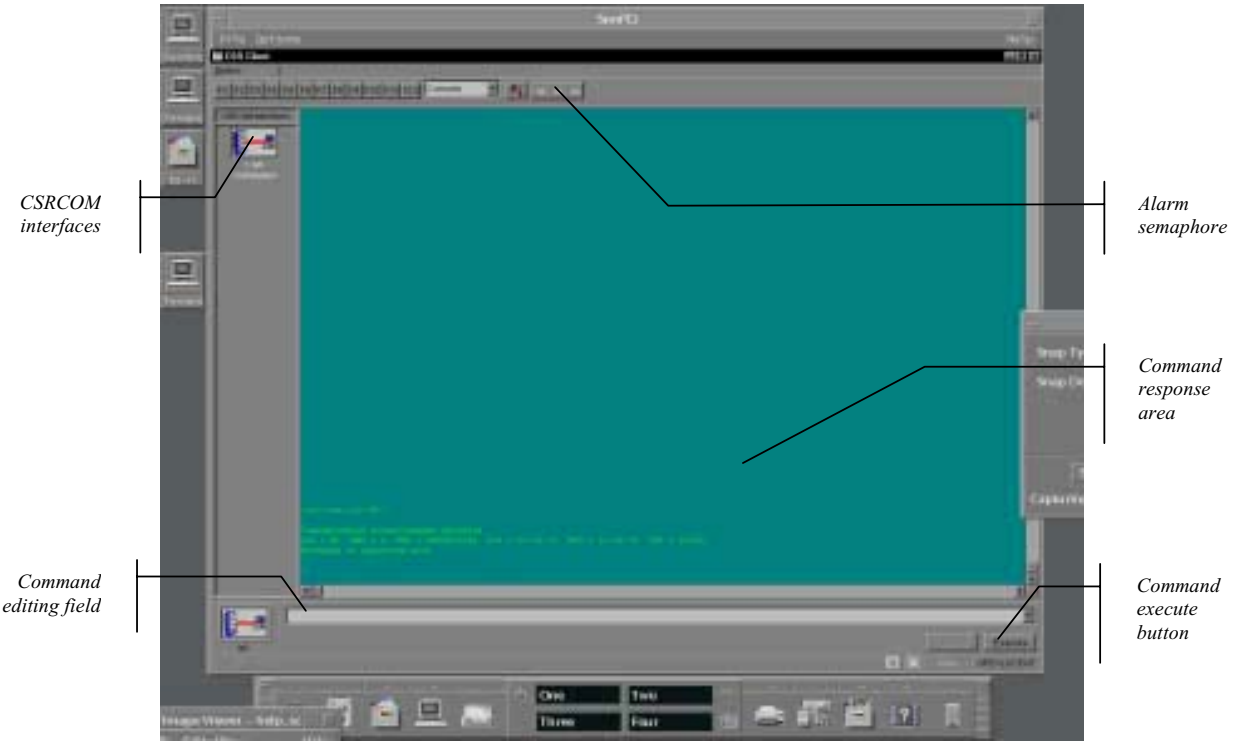


Figure 2-7 - CSR interface elements in Sun

Command Execute Button

A command entered can be run either by pressing the <ENTER> key or clicking the mouse on button **Execute**. When running query-type commands, the data displayed may take up the entire screen, requiring a pause to allow the operator to see responses. Accordingly, button **Continue** will replace button **Execute**, to allow the operator sufficient time to read the subsequent responses.

Command Editing Field

An area for editing commands before running them. The field includes an arrowhead (command scrolling button) that accesses the last 31 executed commands in the session. To access, click on the arrowhead, keep the mouse button pressed, scroll until reaching the required command and then release it. The selected command will be displayed in the editing field, and it can be altered and then executed.

Alarm Semaphore

Indicates alarms on an urgency basis, allowing querying them. It is displayed in three colors, according to the degree of urgency.

□

Configuration

First Operating Session

The CSR is supplied with a single registered operator, with "LUCENT" as ID and "LUCENT" as password, and these data should be used to open the system first operating session. In the first operating session, a class 1 operator should be registered, who will become in charge of system-access control. The system sets the operator password, which is the same as the entered operator ID. After registering, the operator should conclude the session and open it again, using the newly registered operator data.

Operator "LUCENT" should be deleted (through the SU-OPE command) immediately after registering (CR-OPE command) the new operator, thus preventing an "operator" with a generally-known ID and password from residing in the system.

Entering Commands

A command can be entered directly (via the keyboard), by means of a file or through a command macro.

To enter commands in the direct mode, the operator should type the required command in the command-editing field every time he submits it to the system. Commands are entered by typing their code and parameters and pressing key ENTER or clicking on button **Execute** when ready.

Keys ENTER and ESC are respectively used for confirming and canceling an edited command.

The CSR is prepared to execute command files. This facility should be used to run a list of commands rapidly and safely.

Each command takes one line in the file and should be concluded by character ";" (semicolon). The characters between ";" and the end of a line are considered comments and ignored.

The following example shows a command line to execute a command file.

```
<EX CMD FIL = "C:\CSR\LUCENT1"
```

Parameter FIL indicates the path in which the command file should be found (C:\CSR\) and the file name (LUCENT1). If no file extension is specified, the CSR will look for a file with the same name and extension ".CMD". If the path is omitted, the system will look for the file in the current drive and directory.

The commands in the file are executed in sequence. Each command is displayed on screen, followed by the corresponding response. Pressing key ESC interrupts the command file execution.

Function keys F1 to F12 can be associated to a command or series of commands. A text can be assigned to each function, indicating the programmed command. This text can be identified by placing the mouse cursor over the function key. To select the programmed function for each macro, press the corresponding function key or click the button. The PR-MACRO and other xx-MACRO commands can be used for this functionality.

The programmed text for each macro is displayed by placing the mouse cursor on the respective function key (F1 to F12) button. These texts are defined via parameter TXT.

Important Note: Client and Server File Systems

The EM software follows the client/server model. The CSR program carries on these two roles: CSR Client and CSR Server. In the BZ-RS application, the server CSR runs on the computer installed in a 5ESS Switch shelf. The client CSR may run on the same server computer, or on another computer connected to it through a LAN.

There are many commands that have parameters where a file name must be specified (typically, the FIL parameter is used for this purpose). When the client and server CSR are installed on different computers, it is important to know that the file system that must be considered is the one where the server CSR is installed. In other words, ***all file references are interpreted according the server file system***.

For example, in the command

```
EX-CMD : FIL = "C:\CSR\CONFIG1.CMD"
```

the file "CONFIG1.CMD" is searched in the directory "\CSR" on the drive "C:" of the server file system.

This implies that some operating system features may be necessary in order to access the file involved. Considering that the client and server CSR run on the same operating system (Windows 2000 or Windows NT) and communicate using TCP/IP protocol, there are some alternatives ready to be used for sharing the client and server file systems, when necessary. Mapping a network drive on the client computer, for example, is a reasonable one. For this, do the following:

1. On the server computer, share the directories (if more than one) where you intend to store the files;
2. On the client computer, map a network drive that points to the server directory that is being shared.

Interpreting and Running Commands

A command should have the proper syntax and contain all the required data for its interpretation, in order to be properly executed. The command syntax and semantic are checked via the following tests:

- Checking that the command input format meets the command language rules;
- Checking the proper assignment of parameters to the command;
- Checking types and value limits of parameters arguments.

An improper command is rejected by the system, which will then display the corresponding error message.

Programming or altering the switch configuration data is always done under the Maintenance Unit control. No switch configuration data can be altered with the Maintenance Unit out of service.

System Response

The system can respond to an operator-edited command in three ways:

- An error message, in case of trouble in interpreting or executing the command;
- Message "OK" for successfully processed commands;
- Data on the switch configuration or operation, in response to commands run successfully.

In case of certain query commands, the data volume in the command response will overflow the screen. In such cases, when the screen is full, the operation pauses and button **Continue** overwrites button **Execute.** To display the remaining query-response data, press ENTER.

All commands receive immediate responses. Nevertheless, blocking a subscriber or trunk can be commanded in such a way as to come into effect only when they are idle. In this case, if the subscriber or trunk is idle at the time of blockage, the command response will be OK and the blockage is immediate. If they are busy, the response will correspond to “Pending Blockage”, and they will be blocked as soon as they are idle.

Log File

The CSR allows logging of all commands executed by operators and their responses in a file.

Logging is enable and disabled via ENA-LOG and DSB-LOG commands, respectively. In the following example, the log will be recorded in the file TESTE of directory C:\LUCENT.

```
<ENA LOG FIL = "C:\LUCENT\TESTE"
OK
```

All commands executed after the ENA-LOG command will be logged in the specified file. In order to stop logging commands, the DSB-LOG command must be used:

```
<DSB LOG
OK
```

Log files use .LOG extension, but log files can be set up with other extensions.

If parameter FIL is not specified, the file will be named LUCENT.LOG, in the CSR directory.

When this command is issued from the client CSR, the path specified in the FIL parameter must be on the EM (server CSR) file system.

Log files are accumulative, so that every ENA-LOG command run will append the commands entered by the operator to the existing file.

The contents of a log file can be seen issuing the IT-LOG command:

```
<IT LOG FIL = "C:\LUCENT\TESTE"
OK
```

To erase a log file, use command RV-LOG, followed by the file name.

Using a Printer

Printing facilities in the CSR can be accomplished combining the command logging facility (please, see section above) with the operating system (Windows) printing facilities.

In order to print an execution report (a set of commands and their respective responses), it is necessary:

1. Open a log file using the ENA-LOG command.
2. Execute the commands (typing them or issuing an EX-CMD command for command file execution);
3. Close the log file using the DSB-LOG command.
4. Print the log file using operating system's (Windows) printing facilities.

System Access Control

System access is controlled by:

- registering newly-authorized operators;
- defining their operating class;
- registering the switches to be supervised.

The system admits up to 32 registered operators. Registry is carried out via command CR-OPE (Create Operator), specifying the operator's ID and operating class.

On registry, the operator's password is the same as his ID. To change this password, apply command MD-OPEPAS (Modify Operator Password). An operator can be deleted through command SU-OPE (Suppress Operator from Registry). Command IT-OPE (Query Operator) provides a list of system operators and their respective operating classes.

```
<IT OPE
OPE = JOSE OCL = 01

<CR OPE OPE = "JOAO", OCL = 01
OK

<MD OPEPAS PAS = "OPER1"
OK
```

NOTE: Command MD-OPEPAS modifies the operator's password who opened the active session. It cannot be used to alter any other operator's password.

Command SU-OPE does not apply to suppress the operator who opened the active session.

The system uses operating class to specify the range of commands available to each operator.

In order to know if a determined operational class operator can execute a certain command, this operator should know his operating class and executes the IT-CLACMD command, if his class allows it.

In the example below, an operator is querying the system to check whether operator "JOAO" is allowed to run command IT-OPE.

```
<IT OPE OPE = "JOAO"
OPE = JOAO OCL = 1

<IT CLACMD CMD = IT OPE
CMD = IT-OPE OCL = 1
```

The system provides 16 operating classes, identified by numbers 1 to 16. The commands available to each operating class are defined by using the MD-CLACMD command successively (Modify Command Classification), in order to specify, for each system command, the operating classes authorized to use it.

In the following example, the operator assigns commands IT-OPE and IT-CLACMD for use by operating classes 1, 2 and 3:

```
<MD CLACMD CMD = IT OPE, OCL = 1&&3
OK

<MD CLACMD CMD = IT CLACMD, OCL = 1&&3
OK
```

The following commands are available in all operating classes and are not accepted as an argument for parameter CMD in command MD-CLACMD:

INI-CON (Open Connection to the Switch);

END-CON (Close Connection to the Switch) ;

EX-CMD (Run Command File);

MD-OPEPAS (Modify Operator Password);

END-CSR (Close Down CSR);

IT-CSRCOM (Query CSR Communication Parameters);

MD-CSRCOM (Modify CSR Communication Parameters);

PR-MACRO (Program Command Macro):

RP-MACRO (Remove Command Macro Programming);

IT-MACRO (Query Command Macro Programming);

IT-LOG (Query Log);

ENA-LOG (Enable Log);

DSB-LOG (Disable Log);

RV-LOG (Remove Log File) ;

ENA-LOG (Enable Paging);

DSB-LOG (Disable Paging).

Operating class 1 is the system maximum level of authority. All commands are available for class 1, even if not listed in the command operating class.

The list of operating classes authorized for each system command is displayed via command IT-CLACMD (Query Command Classification).

Registering Switches

A switch is registered via CR-EXC (Create Exchange) command, informing its installation site name, access password number and data directory path. The access number is used by command INI-CON (site name) when the CSR must establish a dial up connection to the exchange. To query registered exchanges, use the IT-EXC.

```
<CR EXC LOC="BRASIL", PAS="BR", PATH="C:\CSR\BRASIL\",
NUM="0313896000"
OK

<CR EXC LOC="LUCENT", PAS="LUCENT", PATH="C:\LUCENT\",
NUM="0313896400"
OK

<CR EXC LOC="BZ5000", PAS="ELC", PATH="C:\CSR\BZ5000\",
NUM="0313896001"
OK

<IT EXC
LOC = BRASIL DSB-ALARM PATH = C:\CSR\BRASIL\ NUM =
0313896000
LOC = LUCENT DSB-ALARM PATH = C:\LUCENT\ NUM =
0313896400
LOC = BZ5000 DSB-ALARM PATH = C:\CSR\BZ5000\ NUM =
0313896001
```

In the standalone CSR, when running the switch registry command, the system inquires whether it should create a directory for storing log, alarm and switch configuration files.

When the CR-EXC command is issued from the client CSR, the exchange directory (PATH parameter) is created automatically.

The system sets up a directory named as specified in command CR-EXC. If not, the directory should be set up outside the CSR Program and named by the operator.

After registering the switch, the operator can change its site name, password, directory path, access number or suppress the switch.

The switch site name and access password should be programmed in the switch during its initial configuration, via MD-EXCLOC (Modify Exchange Code) and MD-EXCPAS (Modify Exchange Password) commands. These commands should also be used to change the switch site name or password, if required.

The switch should be connected when running these commands.

```
<MD EXCLOC LOC = "LUCENT001"
OK

<MD EXCPAS PAS = "LUC001"
OK
```

In the example above, the connected switch receives a new code site (LUCENT001) and new password (LUC001).

If the programmed site name or access password is altered, the same alteration should be made to the CSR switch registry, in order to ensure switch-CSR intercommunication.

If just the access password is changed, the corresponding alteration to the switch registry may be done via command MD-EXC (Modify Exchange).

If the site name is altered, the old name should be deleted from the switch registry and the switch should be registered again under the new name.

To query the switch registry, use command IT-EXC (Query Exchange). A directory with the same name as its site code should be created for each switch registered in the system.

```
<SU EXC LOC = "BRASIL"
```

```
OK

<CR EXC LOC = "LUCENT001", PAS=" LUCENT001", NUM =
"0313856680", PATH = "C:\CSR\TESTE\LUCENT001"
OK

<MD EXC LOC = "LUCENT001", PAS = "LUC001"
OK

<MD EXC LOC = "LUCENT001", PATH = "C:\CSR\TESTE\LUC001"
OK
```

To query the switch record, use command IT-EXC (Query Switch). Each switch registered in the system should have its own directory, housing the files containing the switch configuration data.

Switch Command Log

The BZ-RS switches allow logging of the last 1000 commands successfully run by the operator to a file stored in the switch. The file is automatically written, i. e., the operator cannot enable or disable command logging.

The files can be read through the IT-LOGEXC command. This command has optional parameters DAT (date) and PORT (CSR-switch communication port), as shown in the following example:

```
<IT LOGEXC DAT = 06-26-98
```

In the above example, the command log is queried from June 26, 1998 on.

LOGEXC file cannot be directly printed, but only queried via the CSR. To delete LOGEXC, use command RV-LOGEXC.

CSRCOM Interfaces

The CSR Server can activate up to 16 CSRCOM interfaces. Each CSRCOM can establish communication with one BZ-RS switch.

The CSRCOM interfaces attributes are configured according to the physical connection used in the BZ-RS communication. The following CSRCOM types are available:

- RDL – Serial interface connection, with a modem, using a dial up line;
- RPL – Serial interface connection, with a modem, using a semi-permanent line;
- LOC – Serial interface connection (no modem – local RS-232 connection);
- TCP – LAN (Ethernet) connection using the TCP/IP protocol.

Typically, the RDL and RPL CSRCOM types are used in the BZ-RS system.

Programming CSR Communication Parameters (CSRCOM interfaces)

The CSRCOM configuration is accomplished using the following steps:

1. Run the server CSR;
2. Run the client CSR, logging in the server CSR;
3. Inquiry the configured CSRCOM interfaces using the following command:

```
IT-CSRCOM;
```

Remark: The command execution response shows the CSRCOM interfaces activated by the CSR SERVER.

The next step is the configuration of the attributes of each CSRCOM:

1. Connect the client to a CSRCOM interface through the command:

```
INI-CON: LOC="CSRCOMn"
```

   where ***n*** is the CSRCOM number id; for example, in order to configure the second CSRCOM interface, the command should be:

```
INI-CON: LOC="CSRCOM2"
```

2. Configure the CSRCOM interface through the MD-CSRCOM command (which syntax is described bellow).

Steps 1 and 2 must be repeated for each CSRCOM interface. The MD-CSRCOM command syntax has some variations, depending on the BZ-RS connection type. The following sections present some examples of how to configure CSRCOM interfaces. The examples presented are supposed to be used in step 2 above.

CSRCOM interface using dial up line

To configure a CSRCOM interface using:

- Dial up line,
- COM1 port,
- 9600 bps,
- 1 stop bit,
- no parity,
- file EQ.MDM with modem initialization commands

the command must be:

```
MD-CSRCOM: TYP=RDL, PORT=COM1, SPD=9600, STOP=1,
PARIT=NPA, NFIL="EQ.MDM";
```

Note: the file EQ.MDM must be used only when the EM is equipped with the Equinox Modem, which has four or eight modem ports. For others configurations the file to be used must be MODEM.MDM, so the command will be as following:

```
MD-CSRCOM: TYP=RDL, PORT=COM1, SPD=9600, STOP=1,
PARIT=NPA, NFIL="MODEM.MDM";
```

CSRCOM interface using leased line

To configure a CSRCOM using:

- Leased (private) line,
- COM2 port,
- 19200 bps,
- 1 stop bit,
- no parity,
- file MODEM.MDM with modem initialization commands

the command must be:

```
MD-CSRCOM: TYP=RPL, PORT=”COM2”, SPD=19200, STOP=1,
           PARIT=NPA, NFIL="MODEM.MDM";
```

BZ-RS Element Manager (EM) maintenance procedure

The BZ-RS Element Manager (EM) installation and maintenance procedures are described below. The following topics are explained:

- How to connect a client Telnet program to the EM computer
- How to activate and deactivate the VNC server. The VNC server is the software that exports the video and keyboard resources of a computer (the EM computer) to a remote client
- How to activate the VNC client
- How to change the EM IP address
- How to update the EM software (implemented by the CSR-IP program)
- How to backup the information stored in the EM computer.

In order to execute these operations a notebook computer and a crossover LAN cable are required.
The notebook computer will also require the VNC Viewer software, this software is produced by AT&T and can be downloaded from:

http://www.uk.research.att.com/vnc/start.html

When downloading the VNC software the **Windows 9x/2000/NT (Intel Win32)** binary package must be chose.

Connecting a client Telnet to EM computer

The EM computer installation requires a notebook. The notebook must be connected to the EM computer through a crossover LAN cable that link the respective LAN adapters.
The EM also must be configured with a fixed IP address. The following address will be used:

192.168.1.2

Following are showed the steps to configure this in Windows 9x, Windows 2000 and Windows NT.

Windows 9x

1. Open the Control Panel (menu Start | Settings | Control Panel);

2. Select and open the Network. The Figure 2-8 shows the displayed window;

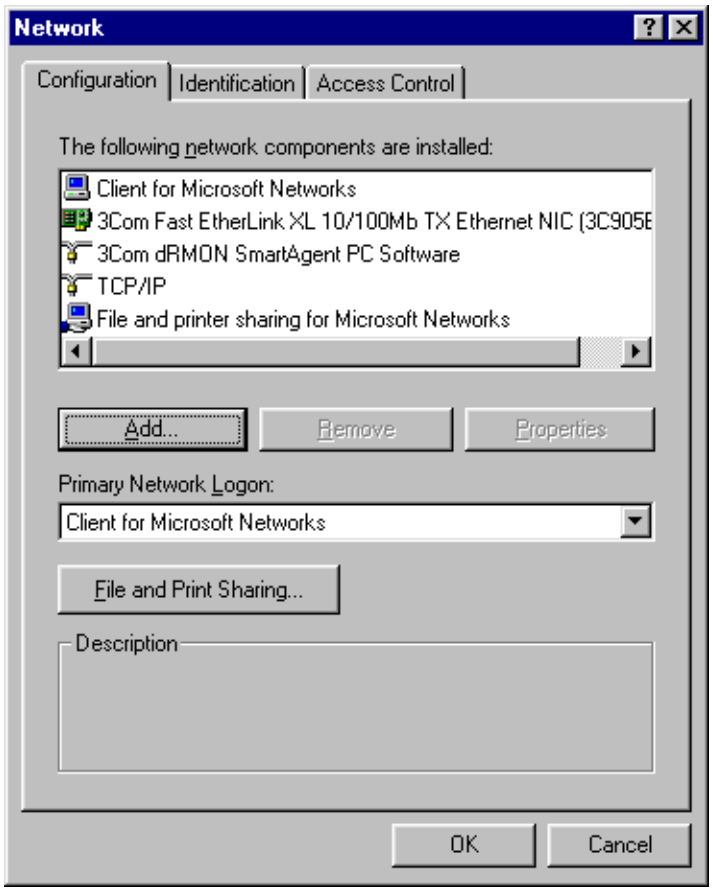


Figure 2-8 - Windows 9x - Network Window

3. Select TCP/IP and then Properties, the window shown in the Figure 2-9 will appear;

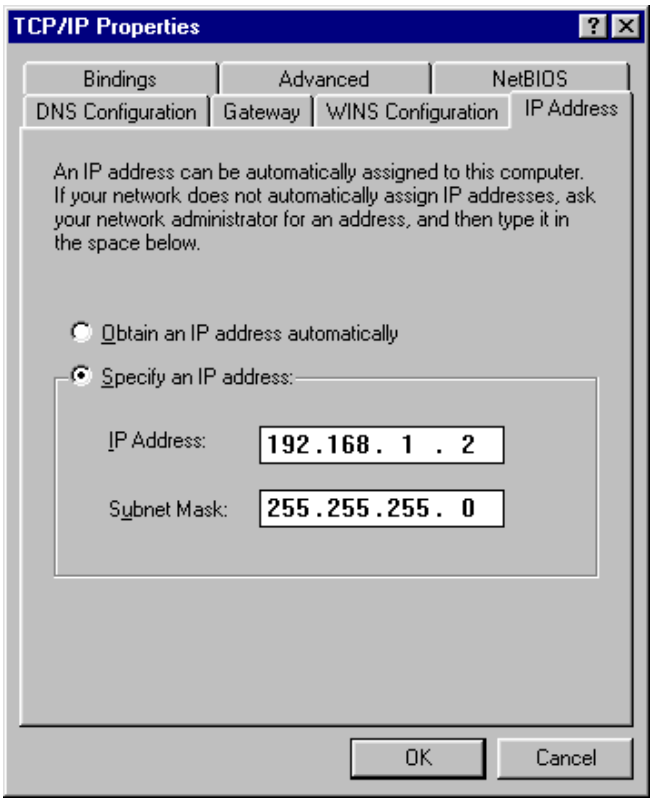


Figure 2-9 - TCP/IP Properties Window

4. Select the option labeled “Specify an IP address” and fill the IP address and Subnet mask fields respectively with:

```
192.168.1.2
255.255.255.0
```

5. Click OK twice. The window shown in the Figure 2-10 will appear;

Figure 2-10 - System Settings Change Window

6. Click “Yes” and the IP address configuration will be completed.

Windows 2000

In order to proceed the following steps the user must be configured as an Administrator on the Windows 2000.

1. Open the Control Panel (menu Start | Settings | Control Panel);

2. Select and open the Network and Dial-up Connections. The Figure 2-11 shows the displayed window;

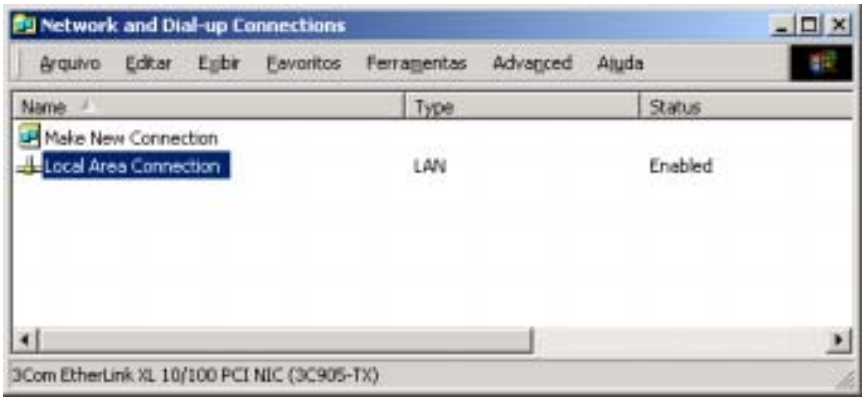


Figure 2-11 - Network and Dial-up Connections Window

3. Select the Local Area Connection item (or the LAN adapter that is being configured) and, with the right mouse button, select Properties. We assume that the basic EM computer configuration has at least one LAN adapter. The properties window appears as indicated in theFigure 2-12;

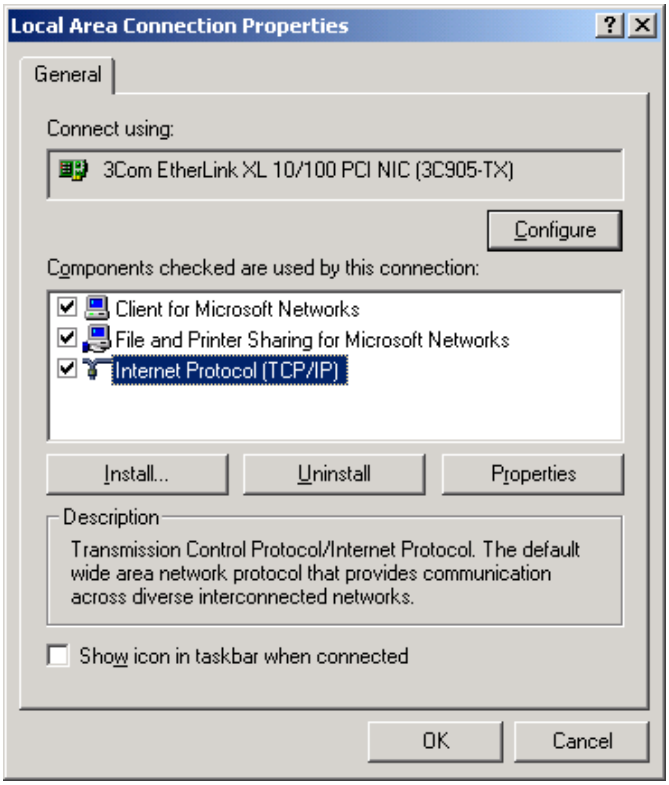


Figure 2-12 - Local Area Connection Properties Window

4. Select Internet Protocol (TCP/IP) and click the Properties button. The window shown in the Figure 2-13 will appear;

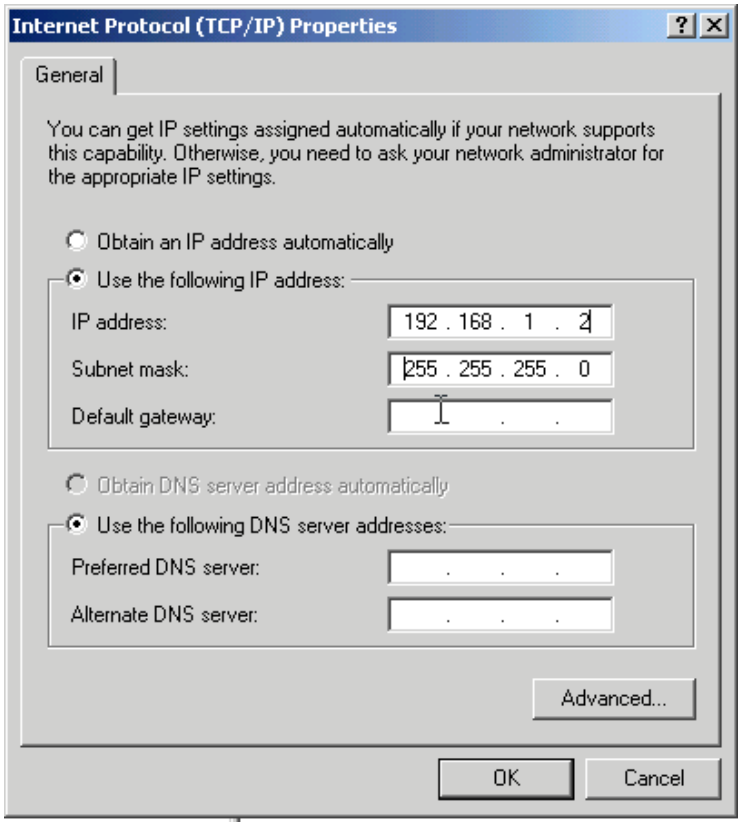


Figure 2-13 - Internet Protocol (TCP/IP) Properties Window

5. Select the option labeled “Use the following IP address” and fill the IP address and Subnet mask fields respectively with:

```
192.168.1.2
255.255.255.0
```

The default gateway and DNS configuration can be left blank.

6. Click OK twice. The IP address configuration will be completed.

Windows NT

In order to proceed the following steps the user must be configured as an Administrator on the Windows NT.

1. Open the Control Panel (menu Start | Settings | Control Panel);

2. Select and open the Network. The Figure 2-14 shows the displayed window;

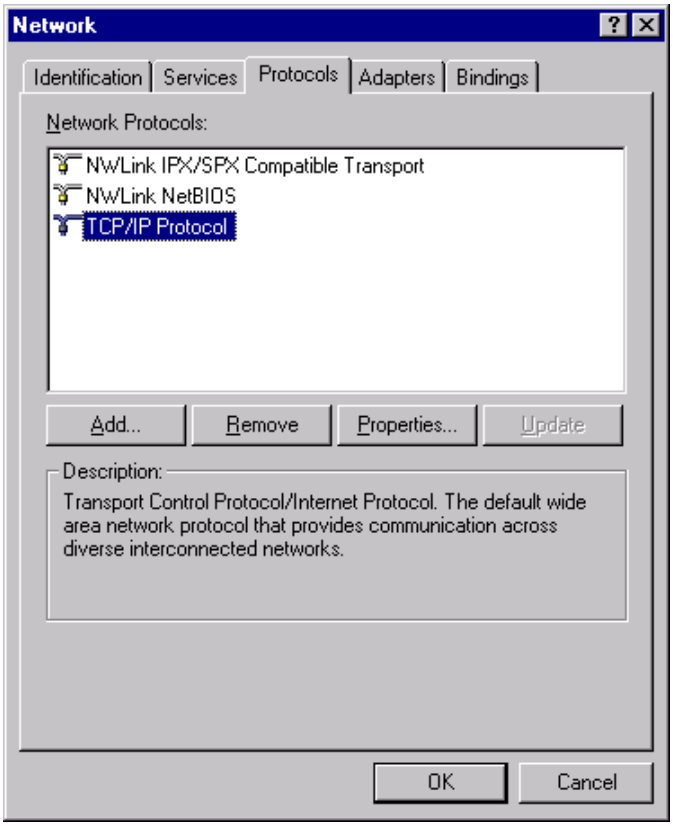


Figure 2-14 - Windows NT - Network Window

3. Select TCP/IP and then Properties, the window shown in the Figure 2-15 will appear;

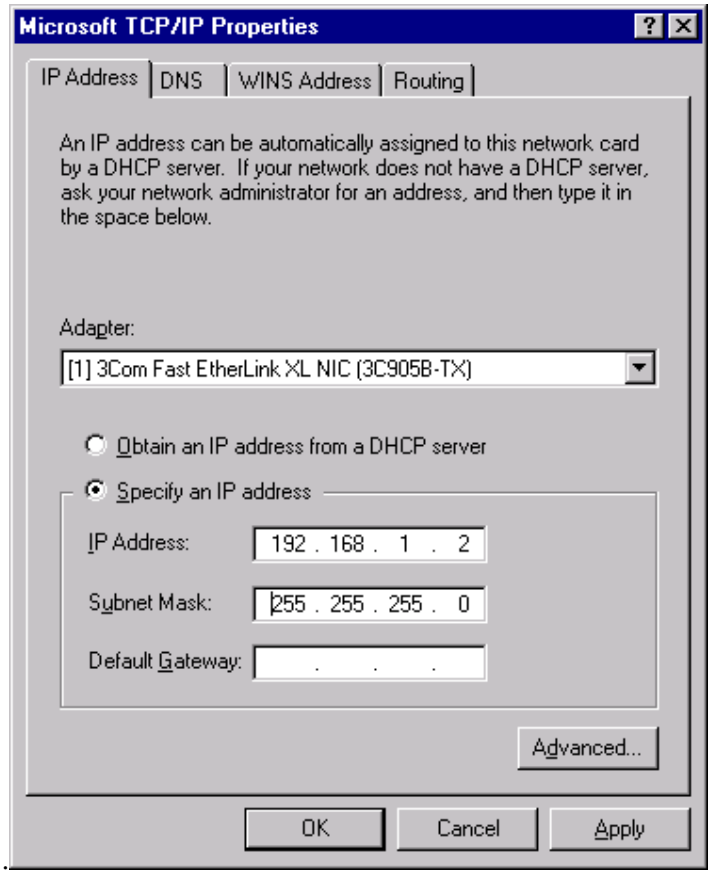


Figure 2-15 - Microsoft TCP/IP Properties Window

4. Select the option labeled “Specify an IP address” and fill the IP address and Subnet mask fields respectively with:

```
192.168.1.2
255.255.255.0
```

The default gateway and DNS configuration can be left blank.

6. Click OK and then “Close”. The IP address configuration will be completed.

Starting the Telnet Connection

Once the notebook is connected to the EM, the client Telnet program must be executed on the notebook and, through it, a connection to the EM computer must be established. In order to do this, the following steps must be performed:

1. Open the Run window (menu Start | Run);

2. Type the command

```
telnet 192.168.1.1
```

3. Give the logon information required, the user is Administrator and the password must be left in blank.

Login: Administrator
Password:

The Figure 2-16 shows the client Telnet after the connection.

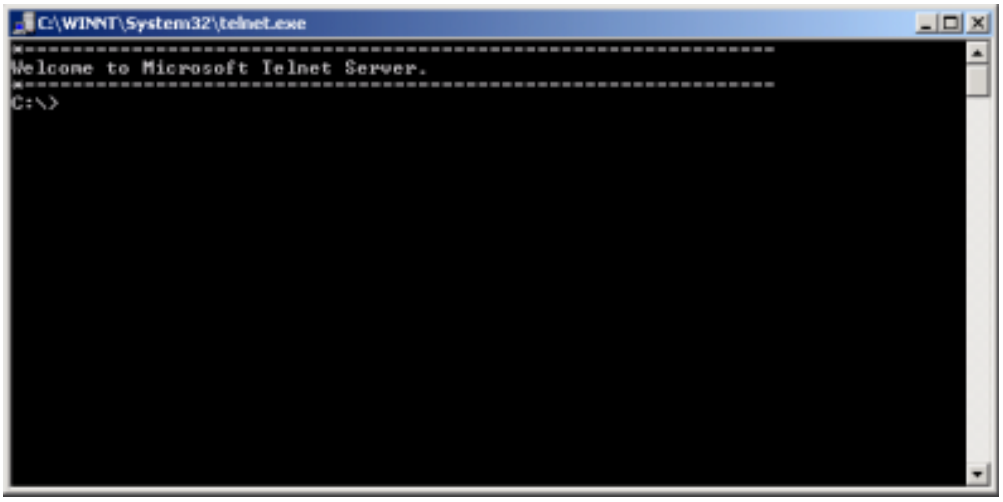


Figure 2-16 – Telnet Server Window

Activating and deactivating the VNC Server

The EM computer is installed inside a 5ESS Switch shelf, without keyboard and video monitor. Some EM software parameters can be configured more easily through a software that exports to a remote client program the keyboard and video resources of the EM computer. This functionality is implemented by the VNC software, produced by AT&T.

The VNC Server must be activated by commands issued through the client Telnet connected to the EM computer. In order to activate the VNC Server:

1. Connect the client Telnet to the EM computer;

2. At the command prompt ("**C:\>**"), type the command:

```
net start WinVNC
```

Activating the client VNC (VNC Viewer)

The client VNC is implemented through the VNC Viewer program (menu VNC | Run VNCViewer). The window shown in the Figure 2-17 appears, and it is necessary to provide the server IP address and password.

I.P. address: 192.168.1.1
Password: Lucent

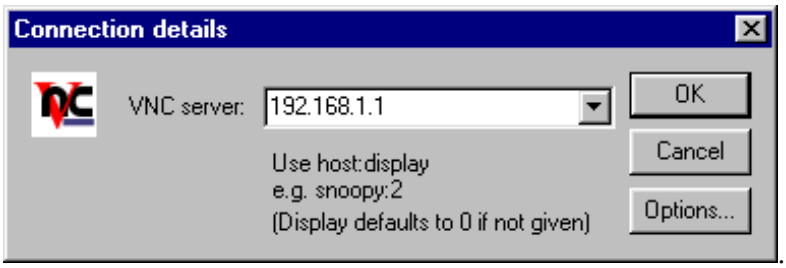


Figure 2-17 - Connection details Window

When the VNCViewer is activated, all the EM computer resources are available. The Figure 2-18 shows an example of the VNCViewer during execution.

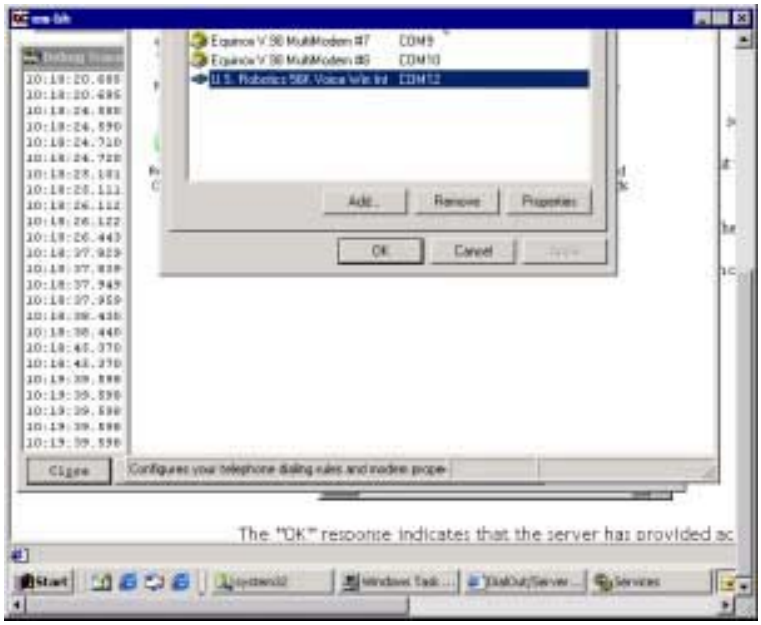


Figure 2-18 - Example of the VNCViewer during execution

This program basically opens a window showing the work area of the VNC Server computer. Any action executed inside this window (with the keyboard or mouse) is actually executed on the server computer.

Changing the EM IP address

The Windows 2000 TCP/IP protocol installed in the EM computer must be configured in order to connect to the customer network and/or to the 5ESS Switch ASM network.

CAUTION

We recommend the use of a fixed IP address for the EM computer. Using a fixed IP address, circumstantial connection problems can be resolved, considering that the EM computer has no video or keyboard.

In order to configure this address, the following steps must be performed:

1. Open the VNC Viewer (please, see section “Client VNC activation”, above);

2. Inside the VNC viewer window, open the Control Panel (menu Start | Settings | Control Panel);

3. Select and open the Network and Dial-up Connections. The Figure 2-19 shows the displayed window;

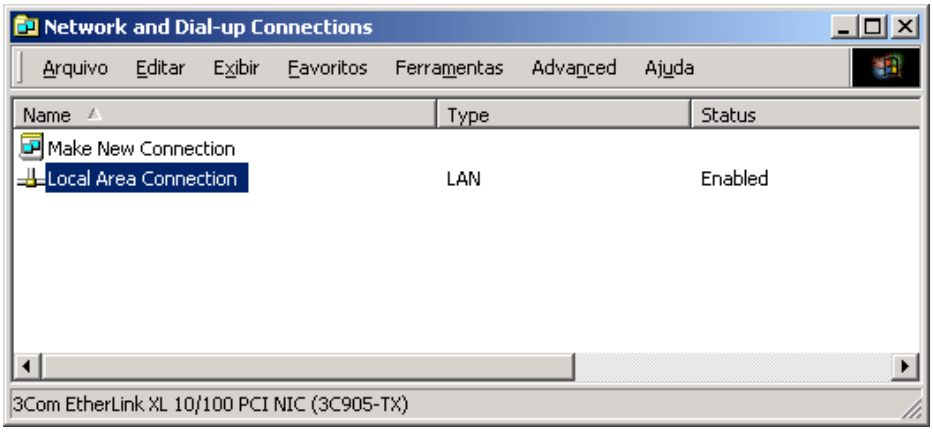


Figure 2-19 - Network and Dial-up Connections Window

4. Select the Local Area Connection item (or the LAN adapter that is being configured) and, with the right mouse button, select Properties. The properties window appears as indicated in the Figure 2-20;

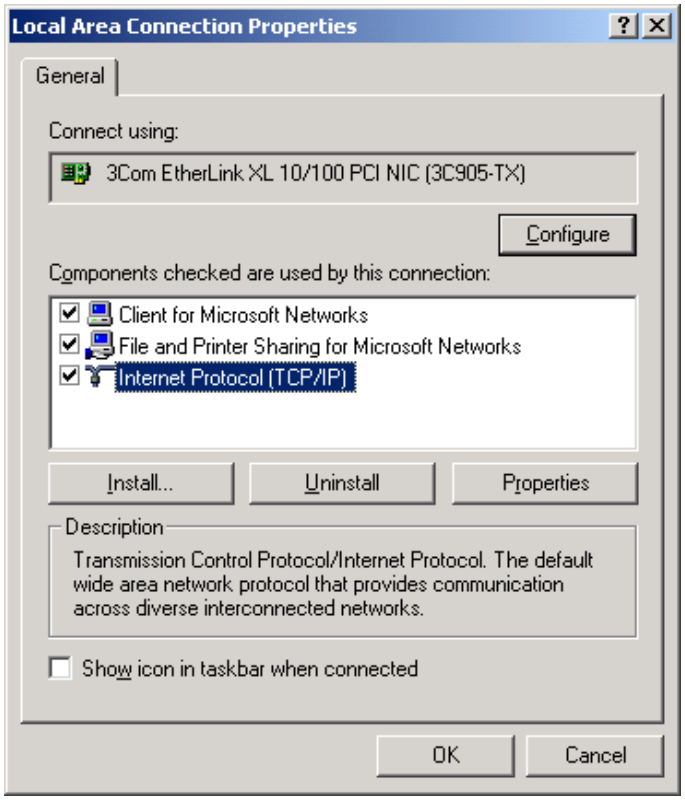


Figure 2-20 - Local Area Connection Properties Window

5. Select Internet Protocol (TCP/IP) and click the Properties button. The window shown in the Figure 2-21 will appear.

Figure 2-21 - Internet Protocol (TCP/IP) Properties Window

6. Select the option labeled “Use the following IP address” and fill the IP address and Subnet mask fields respectively with the values supplied by the network administrator;

7. Click OK twice.

CAUTION

With the new IP address configured, the current connection will break. In order to connect to the EM computer, the new IP address must be used.

8. Connect the EM network board in the DRM LAN.

9. Access the EM through the TELNET using a computer connected at the corporate or DRM LAN.

10. Stop the VNC, typing the command

```
net stop WinVNC
```

After that, close the Telnet client.

CAUTION

It is recommended to use the VNC Server exclusively when necessary. After using it, the VNC Server must be deactivated using the instructions above.

Updating the EM Software

A new version of the EM software must be installed through the following steps:

OBS: The following steps are described in more details in the sections above.

1. Insert the new software CD in the EM computer CD-ROM drive;

2. Using a computer in the EM network, connect a client Telnet to the EM computer;

3. Through the Telnet, activate the VNC server;

```
net start WinVNC
```

4. Run the VNC client (VNC Viewer), connecting it to the EM computer;

Through the VNC Viewer, the EM software can be installed using the current installation procedures. The EM software is implemented by the CSR program. Before installing the new version, the CSR server must be closed.

After installation, activate the new EM software, running the CSR program. You should verify if the new version configuration (including all CSRCOM interfaces) is correct.

At the end of this process, you should:

1. Close the VNC client;

2. Stop the VNC service by typing the following command in the client Telnet window:

```
net stop WinVNC
```

3. Close the client Telnet.

Copying the Switches Database

The EM computer has a removable (ZIP) drive that can be used for backup purposes. Each registered switch has a database directory, where statistics and other information are stored. In order to make a copy of these data, the following steps must be performed:

1. Insert the removable (ZIP) disk in its respective drive in the EM computer;

2. Using a computer in the EM network, connect a client Telnet to the EM computer;

3. Through the Telnet, activate the VNC server;

```
net start WinVNC
```

4. Run the VNC client (VNC Viewer), connecting it to the EM computer;

Through the VNC Viewer, the files can be copied to the removable drive using the Windows Explorer application.

After copying all the files, you should:

1. Close the VNC client;

2. Stop the VNC service by typing the following command in the client Telnet window:

```
net stop WinVNC
```

3. Close the Telnet client.

EM Virus Protection

Although the Element Manager is not deployed with virus protection we strongly suggest the customer to install their corporate antivirus in the EM. They should also update the antivirus in the same regular base as the other computers in their network.

3 Operation

Overview

Purpose This chapter describes the operation of the BZ-RS, including a systematic configuration procedure.

NOTES

1. Always wear a properly grounded wrist strap for ESD protection when inserting or removing any removable media in the Element Manager or doing anything with its front cover opened.
2. Be aware that the BZ-RS takes approximately 1’ 30” (one minute and thirty seconds) to begin its operation, after the link with the R/EAIU has been established.
3. Back-up and SW update Operation must not be done, using ZIP Drive, CD-ROM and Floppy Disk peripherals, while temperatures upper to 45 degrees Celsius.

Starting Up

The following steps will describe how to start up and configure the BZ-RS, supposing the first software version and a default configuration are already applied. The CSR-EM software must be already installed also, to do it follow the instructions in the corresponding section.

This section will be sub divided in two sub sections, one about the starting up and another one about general configuration for the BZ-RS parameters and the specifics parameters in the BZ-RS for the R/EAIUs.

LED's Description

After powering up the BZ-RS the status of the system can be observed by the LEDs in MXTS boards, as follows:

Led 1: DSP Status

Green ON - DSP running normally

Red ON - DSP fail

Orange ON - DSP software load (initialization)

Led 2: Board Status

OFF - Board not initialized

Green ON - Board initialized

Led 3: System Status

OFF - System without link data

Green flashing - System running normally

Orange flashing - Diagnostic running (system in stand-by)

Red ON - Diagnostic fail

Orange ON - At least one link in ESA mode

Enter the **User Name, Password** and **IP Server Address** on the CSR-CLI.

The first step is to define, in the EM, how the subscriber database will be queried. There are three ways to do this, and it depends on the 5E configuration. Following we will describe these ways and also indicate what must be configured on the 5E in order to allow the queries.

TCP/IP connection using ProxyDB (NAR Market):

1) In the 5E ODD, the following secured features (SFIDs) must be turned on:
322 (RC Front End on ASM)
539 (Proxy DB 5ESS Proxy DB)
570 (Proxy Database - Recent Change and SQUAL)

2) In the ASM, Recent Change and ProxyDB must be enabled with command ‘dsappenable’.

3) Command ‘passwd’ must be used in the ASM to define password for the standard user to be used (RCOS1 to RCOS8). It is also advisable, if possible, to disable the password aging, in order to avoid any future connection error from the EM to the 5E due to password expiration, during the subscriber’s database download from the 5E to the EM.

4) This user and password must be provisioned in the BZ-RS EM with the following command:

MD-RAIUDAT : OPE=”xxxx”, PAS=”xxxx”;

5) In the BZ-RS EM, the Proxydb scenario must be chosen using command:
MD-RAIUDAT:NAR, RCOS,TYP = TCP, IP = *asm_ip_address*

For more complete information about the BZ-RS EM commands, please refer to Chapter 5 of this document.

Remark: If the ASM is also to be accessed by the ConnectVU System, make sure it uses an RCOS login different than the one chosen for the BZ-RS EM. For more information about the

ConnectVU System, these links are available:

http://poohbear.cvu.lucent.com/
http://spg.web.lucent.com/doc/2001_CVU_FAQs.html?MIvalObj=6206&MItypeObj=text/html&productID=3&fileName=2001_CVU_FAQs.html
http://www.lucent.com/livelink/128955_Brochure.pdf

TCP/IP connection without ProxyDB – DRM scenario (NAR Market):

1) Non shared Virtual terminal (vtty) has to be created in the ASM for BZ-RS connection. The procedure to create these terminals can be found in document ASM User's Guide (235-200-145) of June issue, session 6.1.7 – Growing in A Virtual TTY. The grown vtty will have to be (manually) provisioned in the BZ-RS EM, through pairs 'tty-node', inside the command CR-PS.

2) To create a unique login and password to be used by the BZ-RS EM, command 'addnusr' shall be used, making sure the same login and password are created for all node(s). The use of this command is described in document ASM User's Guide (235-200-145) of June issue, session 3.8.2.4 - Creating A User-Defined Login. After creating the user, it is necessary to change its password, logging into the ASM once. When logging in again, the operator will be prompted for the login password and then for a new password. This is the password that must be provided further to the BZ-RS EM, inside the command MD-RAIUDAT. It is also advisable to disable the password aging on the BZ-RS account, created in the ASM, in order to avoid any future connection error due to password expiration, during the subscriber's database download from the 5E to the EM.

3) In the BZ-RS EM, the DRM scenario must be chosen using command:

MD-RAIUDAT:NAR, DRM,TYP = TCP, IP = *asm_ip_address*

4) The user created in step 2 must be provisioned in the BZ-RS EM with the following command:

MD-RAIUDAT : OPE="xxxx", PAS="xxxx";

5) Make sure that the secured features 523 (Improved Recent Change/Verify) and 322 (RC Front End on ASM) are turned on.

This should be deployed in the ODD.

6) In order to prevent failures caused by the worst query speed performance, the following parameters shall be verified in the CSR.INI file, this file is located in the Element Manager in the same folder where the CSR is installed:

SockRdTimeOut=150

SockMaxTries=5

WaitForFile=20000

7) Restart the AGBD, CSR Server and Client after change these parameters.

For more complete information about the BZ-RS EM commands, please refer to Chapter 5 of this document.

Creating the BZ-RS into the EM:

```
CR-EXC : LOC= "locname" , PAS="password",
NUM="phoneaccessnumber", PATH="directorypath";
```

Parameter:

LOC: BZ-RS installation site code (up to 8 alphanumeric characters in quotes).
PAS: BZ-RS access password (up to 8 alphanumeric characters in quotes).
NUM: BZ-RS access number (if a dial up connection will be used).
PATH: Name of directory in which all BZ-RS data files are to be written.

Connect to the BZ-RS, using the default locname:

INI-CON : LOC="LUCENT" ;

If a dial up modem is being used, the BZ-RS modem number must be provided:

MD-EXC LOC="LUCENT", NUM="bz_rs_modem";

Verify if the software version is the right one:

IT VER;

If not, apply the correct software version following the instructions in the Software Update Section.

Changing the BZ-RS status to configuration mode:

INI-CNF;

At this time the BZ-RS will be re-started and the connection will be dropped. After that, re-connect to the BZ-RS:

INI-CON : LOC=”LUCENT” ;

Serial port connection (International Market):

1) In the 5E ODD, the parameter GLRCTEXT must be set to ABBRFORM or the command used by the BZ-RS EM to query the database will not be recognized by the 5E.

2) Regarding the terminal where the serial port cable is to be

connected:

2.1) this terminal has to be defined as a NON-DAP terminal, using field DAP set to ‘no’ in the OFFICE DATA ADMINISTRATION ECD TERMINAL ASSIGMENT form (ecdtty)

2.2) this terminal has to be programmed to perform authority check before giving access to a new dialogue session. The procedure to do this involves forms ‘getty’ and ‘eaiopt’ and references to it can be found in the Operation Procedures Manual/Subject 0260 (5OP/0260 - V200b), Chapters 1 and 2 – Authority Management.

2.3) the dialog characteristics for this terminal must be programmed as shown below:

Character used to request initiation of a dialog session (dlg_req_char field) must be set to x7 (control-G)

Layout of dialog header must be left as initially delivered (dlg_header field):

“\n+++ %s %d %t #%n /*%i*/ >\n”

Layout of dialog trailer must be left as initially delivered (dlg_trailer field):

"\nEnd of dialogue #%n ++-\n"

Field 'sep_user_code' must be set to yes so the user will be prompted for the user code and password at the start of the dialogue.

Character used to terminate the user code (user_code_term field) must be set to ";".

Character used as password termination for dialogue shell (password_term field) must be set to "\r".

2.4) the fields 'min_psswd_chg' (Minimum time -in weeks- before a password change is required) and 'max_psswd_chg' (Maximum time -in weeks- before a password change is required) must be provided.

After this time the password will have to be changed in the 5E and also in the EM. The password change in the 5E can be done through the hyper-terminal software installed in the EM, and the password change in the EM itself will be done through the MD-RAIUDAT command. It is also advisable, if possible, to disable the password aging for the BZ-RS account, in order to avoid any future connection error from the EM to the 5E due to password expiration, during the subscriber's database download from the 5E to the EM.

Besides the 5ESS Manual listed above, the 5ES - ECD/SG Database Manual can also be used to find more information regarding the TTY/TLWS port setup.

2.5) to define the user and password and assign them to the terminal, refer to documents:

5CR - Commands and Reports Manual/Subject 5005 (5CR/5005-V35f),

Chapter 2 - Password Management Commands and Reports

Chapter 4 - Terminal Management Commands and Reports

Software Manual/Subject 1507 (5SW/1507 – V36f),

Chapter 7 - Authority Checking

Software Manual/Subject 2515 (5SW/2515 – V36f)

Chapter 7.3.4 - Authority Checking

System Functions Manual/Subject 7004 (5SF/7004 - V14c)

Make sure the following command groups are allowed to the profile to be created:

SUPERUSR, GDBQ, SPECRCV, SUBM, SUBR

2.6) In the first login using this tty, the 5E will ask for a password change. In order to perform it, use the hyper-terminal software installed in the EM, following the steps bellow:

2.6.1) Open the hyper-terminal, through the “Start” button. It is under the Programs/Accessories/Communication path.

2.6.2) Choose the serial port that will be used to make the connection between the EM and the 5E. The cable should be already connected.

2.6.3) Configure the baud rate (bits per second), data bits, parity and stop bits with the same data provided during the configuration of the tty in the 5E. The flow control must be Xon / Xoff and the terminal type must be VT100.

2.6.4) At this time, you should see in the hyper-terminal screen the data sent by the 5E. The “terminal in service” message should be in the bottom.

2.6.5) Press “Control-G” and a prompt (> signal) should appears asking for the user code.

2.6.6) Provide the user code created in the 5E and finish the line with a “;” (semi-colon) rather than “return”.

2.6.7) The 5E will ask for the password. Provide the password created in the 5E and finish with a “return”.

2.6.8) The 5E will ask for a new password. Provide it and take note of this new password.

3) The user/password created in the previous steps must be provisioned in the BZ-RS EM with the following command:

MD-RAIUDAT : OPE=”xxxx”, PAS=”xxxx”;

4) Parameters defined for the terminal in the ECD (serial port, speed, number of stop bits, parity, word size) must be provisioned to

the BZ-RS EM with the following command:

MD-RAIUDAT: TYP = LOC, PORT = COM1, SPD = xxxxx, STOP = x, PARIT = xxxxx, WORD = x, INT, RCOS;

Obs: The documents referenced here are in Lucent Technologies 5ESS-2000 Switch International Online Documentation System, Viewer Software Release 2.7, November 1998.

Creating the BZ-RS into the EM:

```
CR-EXC : LOC= "locname" , PAS="password",
NUM="phoneaccessnumber", PATH="directorypath";
```

Parameter:

LOC: BZ-RS installation site code (up to 8 alphanumeric characters in quotes).
PAS: BZ-RS access password (up to 8 alphanumeric characters in quotes).
NUM: BZ-RS access number (if a dial up connection will be used).
PATH: Name of directory in which all BZ-RS data files are to be written.

Connecting with the BZ-RS, using the default locname:

INI-CON : LOC="LUCENT" ;

If a dial up modem is being used, the BZ-RS modem number must be provided:

MD-EXC LOC="LUCENT", NUM="bz_rs_modem";

Verify if the software version is the right one:

IT VER;

If not, apply the correct software version following the instructions in the Software Update Section.

Changing the BZ-RS status to configuration mode:

INI-CNF;

At this time the BZ-RS will be re-started and the connection will be dropped. After that, re-connect to the BZ-RS:

INI-CON : LOC=”LUCENT” ;

Note: to finish the communication between the EM and the BZRS use the command END-CON.

□

Configuring the BZ-RS

This section will be divided in two sub sections, one about general configuration for the BZ-RS parameters and another one about the specifics parameters for the R/EAIUs.

The configuration is done by preparing a configuration file and executing the following command:

```
EX-CMD : FIL="filename";
```

Parameter:

FIL: directory path and filename.

The configuration file is in text form but the extension **.cmd** must be used in the filename. All command lines must be ended with a semicolon (**;**). The characters between the semicolon and the end of the line are considered comments and are not executed.

Below is an example of configuration file containing all commands needed to perform a general configuration of the BZ-RS. The parameters are in italic with a brief explanation added as a comment.

General Configuration

```
; ----------------------------------------------------
; BZ-RS example of configuration
; ----------------------------------------------------

; --------------------------------
; Name of Site and Access Password
; --------------------------------
MD-EXCLOC : LOC="locname";
MD-EXCPAS : PAS="password";
; Parameters:
; LOC = BZ-RS installation site code (up to ;8
;alphanumeric characters in apostrophes).
; PAS = BZ-RS access password (up to ; 8 alphanumeric
characters in ;apostrophes).

; ---------------------------
; Creating the Exchange Unit
; ---------------------------
CR-UNIT : UNI=1, TYPUNI = USP;

; -------------------------
; Creating the MXTS boards
; -------------------------
CR-BOARD : BOARD=01-01, TYP=MXTSA, [T1=1&&16];
```

```
CR-BOARD : BOARD=01-02, TYP=MXTSA, [T1=1&&16];
; The parameter T1=1&&16 is not necessary if E1 format
;will be  used.

; ---------------------------------------------------
; Temporization (in minutes) to activate the alarm
;distribution  point
; ---------------------------------------------------
MD-EXCTME : TIAC=3;

; ----------------------------------------
; Programming the alarm distribution points
; ----------------------------------------
PR-PEMALA : EMP=1-1-1, ASE=UR;
PR-PEMALA : EMP=1-2-1, ASE=UR;

; ----------------------------------------
; Creating the MF senders (NAR market only)
; ----------------------------------------
CR-MFC : MFC=01-01-01&&-last;
CR-MFC : MFC=01-02-01&&-last;
; Parameter:
; last: the last MF sender to be created (1 to 60). It
;means the  number of MF senders created on the ;BZ-RS.

; ----------------------------------------
; Changing the MF senders operational status
; ----------------------------------------
MD-MFCSTE : MFC=01-01-01&&-last, STE=SRV;
MD-MFCSTE : MFC=01-02-01&&-last, STE=SRV;

; -------------------------------
; Creating DTMF senders/receivers
; -------------------------------
CR-DTMF : DTMF=01-01-01&&-last;
CR-DTMF : DTMF=01-02-01&&-last;
; Parameter:
; last: the last DTMF to be created (1 to 60). It means
;the  number of DTMF created on the BZ-RS.

; ------------------------------------
; Changing the DTMF operational status
; ------------------------------------
MD-DTMFSTE : DTMF=01-01-01&&-last, STE=SRV;
MD-DTMFSTE : DTMF=01-02-01&&-last, STE=SRV;

;The number of MF and DTMF senders/receivers, together,
;must not exceed 60 for each MXTS.

; ---------------------------------------------------
; Creating the outgoing emergency route and assign the
;trunks to  this route
; ---------------------------------------------------
CR-ROUT ROUT=S1, NAM="EMERGENCY";
CR-TRK TRK=1-1-cic&&-cic, snl=R1, rout=S1;
CR-TRK TRK=1-2-cic&&-cic, snl=R1, rout=S1;
; Parameter:
; cic: trunk circuit ID code number. See this specific
;command on  the section 05 for more details.
```

```
; ----------------------------------------
; Configuring the frame format of the trunk
; ----------------------------------------
MD-TRKINT BOARD=01-board, TRKINT=trunk, TYP=type,
FRM=format;
; Parameters:
; board: 01 or 02 (MXTS)
; trunk: 01 to 16.
; type: T1 or E1.
; format: SF (super frame) or ESF (extended super
;frame)

; ------------------------------------
; Routing plan for the emergency calls
; ------------------------------------
INI-ORP ORP=1;
MD-ORP SEQ = seq, TYP=EME, ROU1=S1-3-1, CHCL=NTF;
MD-ORP SEQ = seq, TYP=LSS, CHCL=NTF, CLA=1&&32;
COP-ORP ORP=1;
AT-ORP ORP=1;
END-ORP;
; Parameters:
; SEQ: sequence number to be dialed (e.g. 911).
; TYP: must be EME for outgoing calls and LSS for
;internal calls
; ROU1: used only on outgoing calls. See this specific
;command on  the section 05 for more details.

;-----------------------------------------------
; Creating the hunting group and emergency number for
; internal calls
;-----------------------------------------------
MD SUBSTE SUB=xxxxxxx, STE=BLK
; Parameters:
; SUB – key subscriber (same of 13.1.2)
MD SUBSTE SUB=xxxxxxx, STE=BLK
; Parameters:
; SUB – subscriber to be include in the
hunting group
; Repeat this step for each subscriber
included.
; CR CPCT: KEY=xxxxxxx, SUB=xxxxxxx&xxxxxxx
MD SUBSTE SUB=xxxxxxx, STE=SRV
; Repeat this step for all subscribers above.
; Is advisable that each EAIU have at least one
; subscriber in the hunting group.
CR LSS SEQ=seq_defined_on_the_routing_plan,
SUB=key_subscriber;


;-----------------------------------------------
; Creating the subscribers class
;-----------------------------------------------
CR-CLA CLA=1, NAM="NORMAL", OCT=10, TCT=1,
RTT=NRESTR, SVP=NORSRV;

; ----------------------------------------------
; Creating the synchronization clock on the BZ-RS
```

```
; ------------------------------------------------
MD-OPPSYNC : CLKTYP=R2;

; ------------------------------------------------
; Programming the T1 MF trunk that will be the clock
;reference
; ------------------------------------------------
CR SYNCREF REF=1, BOARD=1-1, TRKINT=trunk_number;
CR SYNCREF REF=2, BOARD=1-2, TRKINT=trunk_number;
; Paramenter:
; TRKINT: trunk number on the MXTS board (1 to ;16).

; ----------------------------------------
; Configuring the serial communication ports
; ----------------------------------------
MD-EXCCOM : PORT=01-COM1, TYP=LOC, SPD=19200 ;
MD-EXCCOM : PORT=01-COM3, TYP=TYP, SPD=19200 ;
; Parameter:
; TYP: type of exchange communication port. Must be RDL
;for dial  up connection or RPL for leased line
;connection.

; ----------------------------------------
; Configuring the ESA mode
; Case OPP= ESA ; Enable survivability feature to the exchange
; Case OPP = ESA NOAC; Enable survivability feature for ten digits
; to the exchange
; Case OPP = NCINTRA; Disable internal calls
; ----------------------------------------
MD-EXCOPP : OPP = ESA;

; ------------------------------------------------
;  Programming the frequencies and cadences of the call
progress tones
; ------------------------------------------------
MD TON TON=DT, CAD = on-off-on-off, FREQ = freq;
MD TON TON=BS, CAD = on-off-on-off, FREQ= freq;
MD TON TON=CCS, CAD = on-off-on-off; FREQ = freq;
MD TON TON=CGTT, CAD = on-off-on-off; FREQ = freq;
MD TON TON=UNT, CAD = on-off-on-off; FREQ = freq;
; Parameters:
; CAD: cadences of the control tone (in milliseconds).
;For the NAR market the following values apply:
;     Dial tone (DT): 0-0-0-0
;     Busy tone (BS): 500-500-500-500
;     Ring back cadence (CCS): 2000-4000-2000-4000
;For the INDIA market the following values apply:
;     Dial tone (DT): 0-0-0-0
;     Busy tone (BS): 750-750-750-750
;     Ring back cadence (CCS): 400-200-400-2000
;     Congestion tone (CGTT): 250-250-250-250
;     Inaccessible number tone (UNT): 2800-200-2800-200
; FREQ: frequencies that form the tone. The following
; values are allowed:
;        HZ400 for 400 Hz
;        HZ425 for 425 Hz
;        HZ440 for 440 Hz
;        HZ480 for 480 Hz
;        HZ350e440 for 350/440 Hz
```

```
;        HZ440e480 for 440/480 Hz
;        HZ480e620 for 480/620 Hz
;        HZ392e417 for 392/417 Hz;        HZ25
for 25 Hz
;       For the NAR market the following configurations
; apply:
;       Dial tone (DT): HZ392e417
;       Busy tone (BS): HZ400
;       Ring back cadence (CCS): HZ392e417
;       Congestion tone (CGTT): HZ400
;       Inaccessible number tone (UNT): HZ400
; ---------------------------------------------------
; Program the temporization timing for the exchange
; operation.  These temporization have a default;value,
; you should change  only the ones that have ;a
; different value according the local  standards. If
; needed it can be changed after the initial
; configuration.
; ---------------------------------------------------


END-CNF;
```

Specific Parameters for the R/EAIUs

```
; ------------------------------------------------
; BZ-RS – Creating R/EAIUs
; ------------------------------------------------

; ------------------------------------
; Creating a Peripheral Stage (R/EAIU)
; ------------------------------------
CR-PS : PS=01, NAM="name", PRO=RAIU, RAIU=raiu_id,
TERM="vtty_term", NOD="sm_node" ;
; Parameters:
; PS: Peripheral Stage number (1 to 6).
; NAM: R/EAIU designation (up to 8 alphanumeric
;characters in quotes).
; RAIU: R/EAIU identification, on the format SM-R/EAIU.
; TERM: name of vtty to be used on 5ESS.
; NOD: which network node the SM-EAIU are located.
; The parameters TERM and NOD are used only if a DRM
; is been used to query the subscribers database.
; ------------------------------------------
; Creating the R/EAIU interface with the BZ-RS
; ------------------------------------------
CR-RAIUINT : INT=1,  PS=01;
; Parameters:
; INT: R/EAIU interface number (1 to 6).
; PS: Peripheral Stage number (1 to 6).

; ------------------------------------------------
; Creating the voice channels between the RCOMDAC and
;the BZ-RS
; ------------------------------------------------
; RCOMDAC0 – MXTS1
CR-TER : TER=01-01-cir&&-cir, PS=01, CIC=cic;
; RCOMDAC1 – MXTS2
CR-TER : TER=01-02-cir&&-cir, PS=01, CIC=cic;
; Parameters:
; cir: circuit ID code number. See this specific
;command on the section 05 for more details.
; PS: Peripheral Stage number (1 to 6).
; CIC : Sequence number in the T1/E1 systems. The rule
for creating CICs is:
; First system of MXTS_1 – 1
; Second system of MXTS_1 – 65
; Third system of MXTS_1 – 129
; Fourth system of MXTS_1 – 193
; Fifth system of MXTS_1 – 257
; Sixth system of MXTS_1 – 321
; First system of MXTS_2 – 513
; Second system of MXTS_2 – 577
; Third system of MXTS_2 – 641
; Fourth system of MXTS_2 – 705
; Fifth system of MXTS_2 – 769
; Sixth system of MXTS_2 – 833
; See annex A.


; ----------------------------------------
; Creating the signaling and monitoring links
; ----------------------------------------
; PCM 01 Signaling ///// PCM 02 Monitoring - MXTS 1
```

```
CR-RAIUENL LNK=01, INT=1, SNLT=01-01-cir, NENL = 1-1,
TSNLM=01-01-cir, PRO=RAIU;
; PCM 01 Signaling ///// PCM 02 Monitoring - MXTS 2
CR-RAIUENL LNK=17, INT=1, SNLT=01-02-cir, NENL = 2-1,
TSNLM=01-02-cir, PRO=RAIU;
; Parameters:
; LNK: Link number (1 to 32).
; INT: R/EAIU interface number (1 to 6).
; SNLT: RAIU signaling terminal number. For NAR Market
;cir must be 002 and for INTL Market cir must be ;001.
See this specific command on section 05 ;for more
details.
; NENL: Link on RCOMDAC board. See this specific
command on section 05 for more details.
; TSNLM : 5ESS signaling terminal number (used to
;monitoring the5ESS signaling terminal). For NAR
;Market cir must be 034 and for INTL Market cir ;must
be 033. See this specific command on section 05 for
more details.

; ------------------------------------------------
; Modifying the operational status of the interface
; ------------------------------------------------
MD-RAIUINT : INT=1, STA=ATV;
; Parameter:
; INT: R/EAIU interface number (1 to 6).

; ----------------------------------------------
; Modifying the operational status of the link
; ----------------------------------------------
MD RAIUENL LNK=01, STA=ATV;
MD RAIUENL LNK=17, STA=ATV;
```

When finished creating or growing the R/EAIUs, the BZ-RS must be restarted to correctly update the new data. It could be done with the command EX-RESET UNI=1.

Once the EX-CMD : FIL="filename" ; finishes, perform the following steps manually:

Acquire the subscriber database from 5ESS:

RE-RAIUDAT : LOC="*locname*" ;

Verify the result of the query. It may take few minutes until complete:

IT-RAIUDAT: LOC="*locname*" ;

. Transfer the acquired subscriber data to the BZ-RS:

INI-CON: LOC="*locname*" ;
COP-RAIUDAT ;

The steps above are used to provide the initial subscriber database in the BZ-RS. The subscriber database update should be done using the scheduling.

Command Scheduling

The agenda is used to schedule commands that should be done daily, sometimes in non-working hours, and could be done without a technician around. The BZ-RS will use the following schedule:

Diagnostic test of the BZ-RS:

```
PR-AUTEST : HOU = hh [-min], PST = xx ;
```

Parameters:

```
HOU  : Time of start, where:
Hh   – hour (0..23)
Min  – minutes (optional – 0..59), default 00
PST  : Periodicity in days (1..7)
```

Acquisition of the subscriber data from the 5ESS:

```
PR-AGENDA : NAGD = 1, CMD = ‘RE-RAIUDAT : LOC =
“locname”’, HOU = hor ;
```

Parameters:

```
LOC  : BZ-RS installation site code.

HOU  : Time of start, where:
Hh   – hour (0..23)
Min  – minutes (optional – 0..59), default 00
```

Transferring the acquired subscriber data to the BZ-RS:

```
PR-AGENDA : NAGD=2, FIL=’path_and_file_name’,
HOU=hou;
```

The file to be executed by the NAGD=2 should be a text file, with the .cmd extension and should contains the following commands:

```
ENA-LOG FIL='agenda_2.log';
INI-CON LOC="locname", NATMP=3, INT=30;
COP-RAIUDAT;
END-CON;
DSB-LOG;
```

The NAGD=2 will enable the command log in the

```
EM, connects the EM to the BZ-RS, transfer the
subscriber database from the EM to the BZ-RS
and disable the log.

Parameters:

LOC  : BZ-RS installation site code.

HOU  : Time of start, where:
Hh   - hour (0..23)
Min  - minutes (optional - 0..59), default 00
```

The subscriber's database update, which is the agendas with the commands RE-RAIUDAT and COP-RAIUDAT, must be done during a non-rush hour. Is advisable that the technician checks the time of the reports generation already scheduled in the 5E, in order to program the EM agendas in a different time and avoid any conflict in the 5E.

Back-up and Restore

The BZ-RS system back-up must include the Element Manager back-up and the BZ-RS configuration database back-up. The BZ-RS Element Manager itself does **not** perform back up operations. It must be used an external back-up tool.

On the other hand, the Element Manager recovery procedure consists of recovering these data files.

Element Manager Back-up

The Element Manager back-up procedure consists of making a copy of the BZ-RS Element Manager installation disks and CSR data files. The CSR data files are listed here:

- CSR.INI: file containing the mapping between software versions and needed DLLs, information about the language, macro definition for special keys, font style and other general configurations for the BZ-RS Element Manager.
- AGENDA.DAT: file containing the scheduled activities for the BZ-RS Element Manager.
- CADCEN.DAT: file containing the information about the elements controlled by the BZ-RS Element Manager.
- CADOPE.DAT: file containing the information about the operators that are able to use the BZ-RS Element Manager.
- CADCMD.DAT: file containing the mapping between commands and operator category that allows their use for that BZ-RS Element Manager.

BZ-RS Database Back-up

For a full back up of the BZ-RS databases, the following procedure is proposed:

- Periodically execute the command REP-CNF for all BZ-RSs managed by a BZ-RS Element Manager to obtain the configuration data files;
- Back up each BZ-RS directory, making sure the CNFxxx.DAT files are present.

The REP-CNF command should be used to request BZ-RS configuration data files that are the source for generating a BZ-RS command script file that allows its database recovery.

The command REP-CNF can be used as the following:

```
REP-CNF : REP = xxxx;
```

Where xxxx is the configuration report code and defines the configuration subset of data that is being requested from the BZ-RS:

UNIT Exchange units
SYNC Synchronism
PDT External Alarm Detection Points
EMP External Alarm Output Points
SUB Numbering Plan
CLA Terminal Classes
CPCT PABX Groups
SSV Supplementary Services
ROUT Routing Plan
AUX Auxiliary Equipment
ORP Originated Routing Plan
CHA Charging Plan
OPP Exchange Operating Parameters
TOE Exchange Operating Timing
MEX Work Shift Modality
SNL Signaling

If the REP parameter is not specified, all exchange configuration data will be stored.

The configuration files generated by REP-CNF are stored in the switch directory (defined by the operator through the PATH parameter of the Create Exchange - CR-EXC- command).

To each of the managed BZ-RSs, the operator must schedule a periodic execution of the command REP-CNF. This can be done programming a CSR AGENDA schedule as the following:

```
PR-AGENDA : NAGD = xxx, FIL = "BACKUP.CMD", HOU = xx[-
xx];
```

Where NAGD is an agenda schedule number (1..100) and HOU is the time in the ho[-mi] format when the command file "BACKUP.CMD" must be executed.

The BACKUP.CMD file should be created as the following example:

```
; ====================================
        ; Connect to the BZ-RS switch "xxxx"
; ====================================
     INI-CON LOC="xxxx";
; ====================================
        ; Obtain the complete BZ-RS configuration data
; ====================================
     REP-CNF;
; ====================================
        ; Disconnect from the BZ-RS switch "xxxx"
; ====================================
       END-CON;
```

For a better description of this command, refer to the Command Description chapter.

The PR-AGENDA command will cause the configuration files to be requested from the BZ-RS every day in the specified hour, by executing the command file. The command output is a set of binary files named CNFxxx.DAT. Those are the files that must be backed-up.

Element Manager Recovery

In case of a defective BZ-RS Element Manager, the following recovery procedure must be used:

- Re-install the BZ-RS Element Manager from its installation disks
- Copy the CSR data files mentioned above, that must have been backed up previously.

BZ-RS Configuration Recovery

In case of a defective BZ-RS configuration, the following recovery procedure must be used:

- Run the CNF.EXE application (which is part of the BZ-RS Element Manager installation package and uses the CNFxxx.DAT files as input) to obtain the command script files for each damaged BZ-RS ;
- Execute the command script files generated by the CNF.EXE.

The CNF application is described in the following topics.

The command script files must be executed using the EX-CMD command:

```
EX-CMD : FIL = "xxx..xxx";
```

Where "xxx.xxx" specify the full name of the command script file to be executed.

The execution of the command script files set the BZ-RS in the state it was when the REP-CNF command was last executed for it.

After that execute the COP-RAIUDAT command, preferable after RE-RAIUDAT command.

CNF – Configuration Support

The CNF program is intended to support the configuration of the BZ-RS switch.

From the switch configuration files, the program allows to:

- Automatically generate configuration command files;
- Generate switch configuration reports.

The *configuration files* of the switch are the CNF01.DAT to CNF09.DAT files, generated by means of the REP-CNF command of the CSR. They store the data corresponding to the switch configuration image.

The *configuration command files* are ASCII files with the necessary configuration commands to configure a switch, according to the image stored in the configuration files that originated it.

The *configuration reports* show the switch configuration according to the image stored in the configuration files that originated it.

By means of the CNF program interface, the operator chooses to generate the command files or the configuration report, selecting the site and configuration type.

Note: the command file generated by the CNF program may present some commands that are not applicable to the BZRS. They are part of the BZ family product and may support some

future enhancements in the BZRS. Currently they do not have any action in the BZRS and do not harm the system operation as well.

CNF Operation

The CNF program is activated from Windows. The CNF Icon is available in the CSR Program Group. When activated, the CNF displays a window with the same name. This window has a menu and a tool bar. All the program commands can be accessed via Menu and some by means of the Icons of the Tool Bar or even by means of Hot Keys.

When the cursor is placed on a Menu Item or an Icon on the Tool Bar, a text appears on the Status Bar, indicating the function of the associated command. The Status Bar is the lowest line of the program window.

The CNF interface allows the following operations:

Menu Option	Accessed by means of Icon	Hot Key	Function
File			
Generate commands file	Yes		Allows the definition of the generation parameters of the configuration commands file.
Generate configuration report	Yes		Allows the definition of the generation parameters of the configuration report.
Preview printing	Yes		Allows previewing the report.
Print	Yes	Ctrl+P	Prints the report.
Configure printer	Yes		Modifies the printer configuration.
Exit		Alt+F4	Exits the program.
Fonts			
Header			Changes the font of the header and footer.
Contents			Changes the font of the contents.
All	Yes		Changes the font of the header, footer, and contents.
Page			
Previous Page	Yes	Page Up	Moves to the previous page.
Next page	Yes	Page Down	Moves to the next page.
?			

Contents	Yes	F1	Displays Help contents.
How to use Help			How to use Help.
About CNF...			Displays information about the program.

Table 3-1 - Configuration Window Operations.

- Generating the configuration command file

To generate the configuration commands file, just select the *File*|*Generate commands files* menu option, answer the displayed dialogue and press the *OK* button. The commands file will be generated with the name defined by the operator.

- Generating the configuration command report

To generate the configuration report on the screen, just select the *File*|*Generate configuration report* menu option, answer the displayed dialogue and press the *OK* button. The first page of the report will be displayed in the program background window. To select a new page, just use the Page Up and Page Down hot keys, the options on the *Page* menu or the corresponding icons on the Tool Bar.

To print the configuration report, the operator shall generate it on the screen as described above, and then select the *File*|*Print…* option, answer to the dialogue which is displayed and press the *OK* button. The report will be printed according to the current printer configuration.

- Changing the character font used in the report

The character font used in the report display, both on the screen and on the printed report, may be changed by means of the *Fonts* menu option. After selecting one of the options displayed on the *Fonts* menu – *Fonts*|*Header, Fonts*|*Contents* or *Fonts*|*All* – a dialogue will be displayed for the selection of the available fonts for the current printer. The operator should select a font and press the *OK* button.

- Printer configuration

The printer can be selected and configured by means of the *Configure Printing* dialogue. This dialogue may be opened by means of the *File*|*Configure printer* menu option, by means of the icon of the Tool Bar, or by means of the *Configure* button of the *Printing* dialogue.

Menu Options

This item describes the menu options for the CNF program.

- File|Generate command file Option

This option displays the *Generate configuration command file* dialogue, by means of which the operator defines the parameters to generate the command file.To generate the configuration command file, the parameters are:

  - the current directory;
  - the site code;
  - the type of configuration (and the originated routing plan to be used, if it is the case);
  - the site access password;
  - the site name;
  - the carrier name;
  - the operator name;
  - the command file name to be generated.

The site is selected via a list of site codes, named *Site*, displayed by the dialogue. When the dialogue is opened, the CNF searches for the CADCEN.DAT site registering file in the current directory. Initially, the current directory is the directory from which the CNF program was activated. This directory can be redefined to any other directory by means of the control group named *Current Directory*.

If CADCEN.DAT is found, the CNF displays in the *Site* list the list of the site codes registered in this file. Otherwise, the CNF assumes that the configuration files are in the current directory. In this case, the CNF searches all the configuration files, obtains the site codes stored in them and displays them in the *Sites* list. Then, the site can be selected from the list.

Once the site is selected, the CNF identifies the most recent version of the site configuration files and assumes this as the current version. Done this, the CNF selects in the *Configuration type* group the types of configuration for which there are configuration files in the current version, and disables the other types. The operator should cancel the selection of the types which are not of interest. There is a button that allows the cancellation of all the selections. Optionally, the operator can redefine the other parameters.

The *Name of file* field, which indicates the name the command file

to be created, is initiated with the name made up of the site code with the .CMD extension. This name can be freely changed and its complete path is made up starting with the directory defined as the current directory, followed by the defined name.

The fields in the *Commentary* group are optional.

Once the definitions of the parameters are confirmed by means of the dialogue *OK* button, the CNF will generate the configuration command file with the defined name.

- File|Generate configuration report Option

This option displays the *Generate configuration report* dialogue, by means of which the operator defines the parameters for the generation of the configuration report.

To generate the configuration report, the parameters are:

  - the current directory;
  - the site code;
  - the type of configuration (and the originated routing plan to be used, if it is the case).

These parameters are selected in the same way as in the *Generate configuration command file* dialogue described previously.

Once the definition of the parameters is confirmed by means of the dialogue *OK* button, the CNF will generate the corresponding configuration report on the program background window.

From there, the operator can opt either to visualize the program or to print it, including to the file.

- File|Preview printing Option

This option is not available in the current version.

- File|Print Option

This option displays the *Print* dialogue, by means of which the

operator defines the printing parameters for the report displayed in the program background window.
The operator can:

- Configure the printer;
- Redefine the printing quality;
- Define the number of report copies;
- Opt to either organize the copies or not;
- Opt to print the report to a file.

Once the definition of the parameters is confirmed by means of the dialogue *OK* button, the CNF will download the configuration report displayed in the background window to the configured printer. This option is only enabled when there is a report displayed in the program background window.

- File|Configure printer Option

This option displays the *Configure Printing* dialogue, by means of which the operator configures the printer to be used, the paper feed, size and type, besides the printing quality. These options are confirmed by means of the *OK* button.

- File|Exit Option

When selected, this option finishes the execution of the program.

- Fonts|Header, Fonts|Contents, and Fonts|All Options

These options are displayed in the *Fonts* dialogue, by means of which the operator defines the character font to be used in the printing of the report. The *Fonts*|*Header* option defines the font of the report header and footer. The *Fonts*|*Contents* option defines the font of the rest of the report. The *Fonts*|*All* option defines a single font for the header, footer and contents.

The fonts defined are valid both for the printed report and for the report displayed in the program background window.The operator can select:

- The font;
- The font style;
- The font size.

The font selection must be confirmed by means of the *OK* button. From then on, this will be the font used for the generation of a report during this execution of the program.

The available fonts depend on the selected printer. After selecting a new font, the operator should verify if the report layout is as desired.

- Page|Previous Page and Page|Next Page Options

These options allow the page of the report displayed in the program background window to changed. When selected, they cause the report to be moved to its the previous or next page.

These options are only enabled when there is a report displayed in the program background window.

- ?|Contents Option

This option activates the program *Help*, displaying its list of contents. From this list, it is possible to access all the *Help* items.

- ?|How to use Help Option

This option activates *Help,* which explains how to use *Help* itself.

- ?|About CNF Option

This option activates a window that displays information about the program. By means of it, the operator can identify the program version.

Dialogues

This item *describes* the dialogues of the CNF program.

- Generate configuration command file Dialogue

This dialogue is displayed when the *File*|*Generate command file* menu option is selected. Its fields are as follows.

- Current Directory Field

This group of fields allows the definition of the current directory. The CNF program assumes that the CADCEN.DAT site register file is located in this directory or, in the absence of such file, the site configuration files. The *Directory* list, the *Drivers* list, and the *Directories* static field make up this group. The current directory is shown in the static field.

- Site Field

This group of fields allows the definition of the switch site code (see the explanation in item *File*|*Generate command file* Option). The code is composed of up to 8 alphanumeric characters and its definition is mandatory.

The *Site* list and the static field with the same name make up this group. The selected site is shown in the static field.

- Configuration type field

This group of fields allows the selection of all or some types of configuration. The configuration command file or the configuration report will be generated from the types of configuration selected.

This group is made up of a set of buttons which allows to select or not each of the types. Initially, the group is displayed with all the previously-selected types enabled (see the explanation in item *File*|*Generate command file* Option*).*The types of configuration (which correspond to the REP parameter of the REP-CNF command) are the following:

- UNIT Units
- SYNC Synchronism
- SUB Numbering Plan
- CLA Terminal Classes
- CPCT PABX Groups

- SSV Supplementary Services
- AUX Auxiliary Equipment
- PDT External Alarm Detection Points
- EMP External Alarm Issuing Points
- CHA Rate Plan
- ROUT Route Plan
- ORP Originated Routing Plan
- OPP Switch Operation Parameters
- TOE Switch Timeout
- MEX Access Mode
- SNL Signaling number 7 parameters

- Password Field

Editing field of the *Generate configuration command file* dialogue, which allows the definition of a site access password. This password will be used in the making up of the MD-EXCPAS command, which is inserted in the command file together with the MD-EXCLOC command when the operator opts to generate a command file with a complete configuration.

This field is only considered when all the configuration types are selected, that is, when the operator chooses to generate a command file with a complete configuration. In this case, it is initiated with the site code. Even when it is considered, this field is not mandatory. In this case, when the operator can define a password but does not do so, the MD-EXCPAS command is created with a password that is equal to the site code.

The password is composed of up to 8 alphanumeric characters.

- Site name Field

Editing field of the *Generate configuration command file* dialogue, which allows the site name to be defined. This name is used for

documentation purposes in the prologue comments of the configuration command file. It is not mandatory and, when not defined, displays blank in the prologue comments. Initially it is displayed with the same contents as the site code.

The site name is composed of up to 20 alphanumeric characters.

- Carrier Field

Editing field of the *Generate configuration command file* dialogue, which allows the definition of the name of the company responsible for the switch. This name is used for documentation purposes in the prologue comments file of the configuration commands. It is not mandatory and, when not defined, displays blank in the prologue comments.

The name of the company is composed of up to 20 alphanumeric characters.

- Operator Field

Editing field of the *Generate configuration command file* dialogue, which allows the definition of the name of the operator responsible for the configuration. This name is used for documentation purposes in the prologue comments of the configuration command file. It is not mandatory and, when not defined, displays blank in the prologue comments.

The operator name is composed of up to 20 alphanumeric characters.

- Command File Name Field

Editing field of the *Generate configuration command file* dialogue, which allows the definition of the name for the configuration command file to be generated. It is a mandatory field which, after the definition of the Site field, is filled in automatically with a file name made up of the site code with the CMD extension. A *path* can be defined together with the file name. When the *path* is not defined, the file is recorded in the site directory that originated it.

The command file name is composed of up to 80 alphanumeric characters.

- Generate configuration report Dialogue

This dialogue is displayed when the *File|Generate configuration report* menu option is selected. Its fields are a subset of the *Generate command file configuration* dialogue fields described above.

It has the following fields:

  - Current directory;
  - Site;
  - Type of configuration.

- Print Dialogue

It is a standard dialogue of the CSR programs, which allows to print the report displayed in the program background window, as described in item *File|Print* Option.

- Configure printing Dialogue

It is a standard dialogue of the CSR programs, which allows the configuration of the printer, as described in item *File|Configure printer* Option.

- Fonts Dialogue

It is a standard dialogue of the CSR programs, which allows the selection of the character font to be used to print the report, as described in item *Fonts|Header, Fonts|Contents and Fonts|All* Option.

Displaying the reports on the screen

When a report is displayed in the program background window, its page is dimensioned to totally fit in the window, according to the size of the latter. Thus, if the size of the window is altered, the page continues with the same dimensions. However, when the report is printed, the page displayed in the window is re-dimensioned to the size of the printed page, remaining with these dimensions until a

new report is generated.

Reports Format

The date and time on the report header indicate when it was generated.The code on the report footer indicates the communication language version of the CSR program that generated the report origin file.

Files

The CNF01.DAT to CNF09.DAT *configuration files* have an internal format that is not available to the user. There are different formats of configuration files. These different formats exist because of the different versions of the Control Program of the BZ-RS switch. Each different format characterizes a different version of the set of files. One CNF version is able to handle all configuration files existing at the time of its launching.

The *configuration command file* is a readable ASCII text file, which presents a list of the commands as the operator would enter them. This file can have any name.

Message Generator Platform

Message Generator Platform

Introduction

This program allows you generate message files for loading in the MXTS card from Lucent Technologies.
Message file must be in wave format. To record wave files, you may use any program such as Cool Edit, Sound Blaster Creative, Wave Studio, Sound Recorder and others.

Recording wave files

The Sound Recorder requires a computer with a multimedia kit and Windows operational system available. Run the Sound Recorder program through of the menu **Start/Programs/Acessories/Entertainment/Sound Recorder** (Figure 3-1).

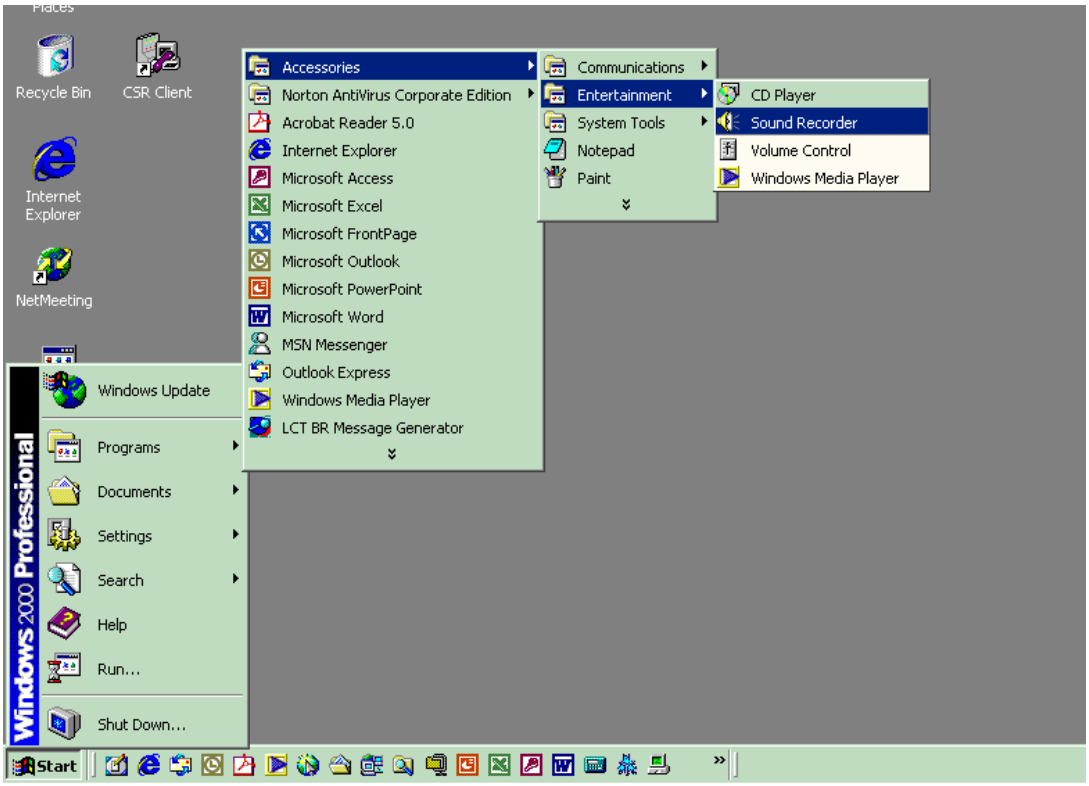


Figure 3-1 - Sound Recorder Access

The option **File/New** must be used for each different message and the **Record/Stop** buttons for start or stop the recorder Figure 3-2.

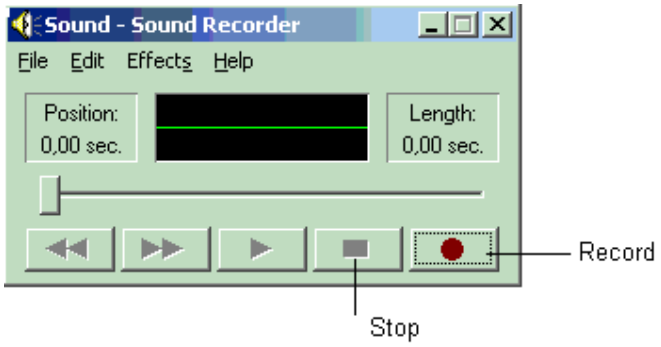


Figure 3-2 - Sound Recorder

The message records must be saved in wave format through the **File/Save as** option. (Figure 3-3).During this procedure must be used the **Change** option to set the PCM format and the following recording attributes: sampling frequencies 8000Hz, Mono (not stereo) and 16 bits per sample. (Figure 3-4)

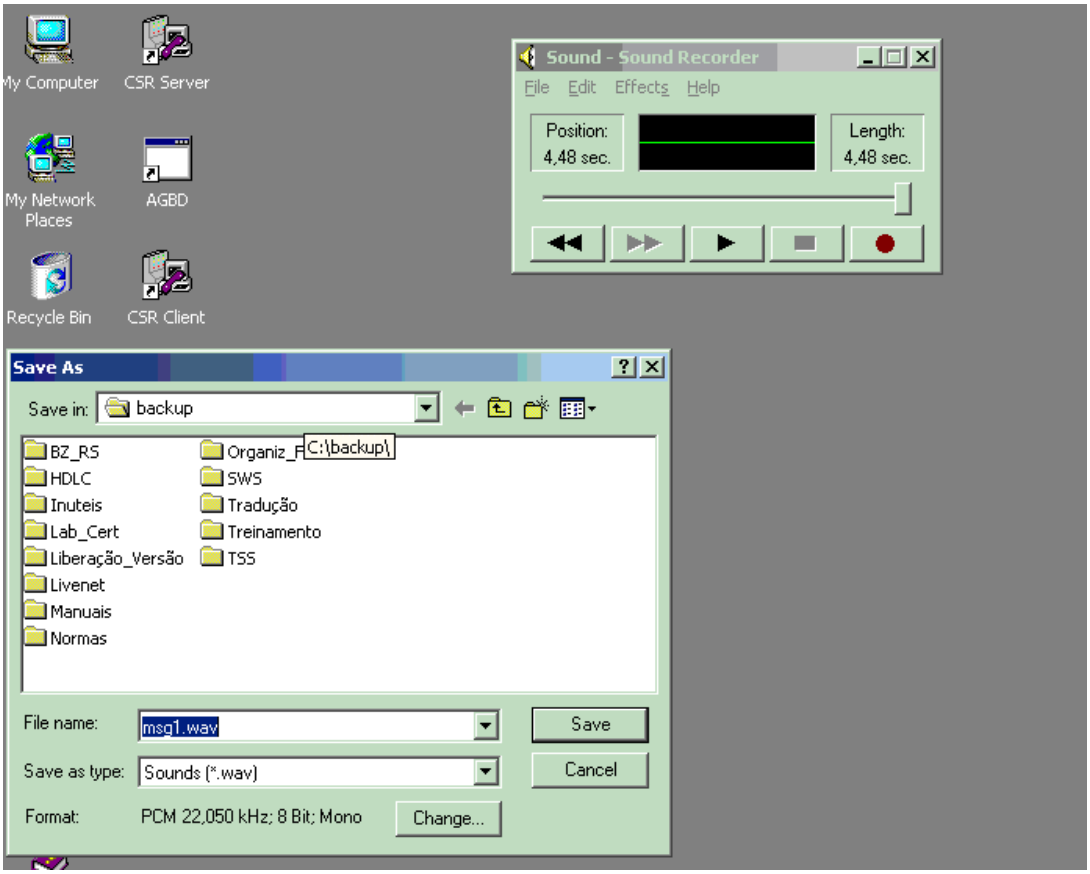


Figure 3-3 - Saving the Messages

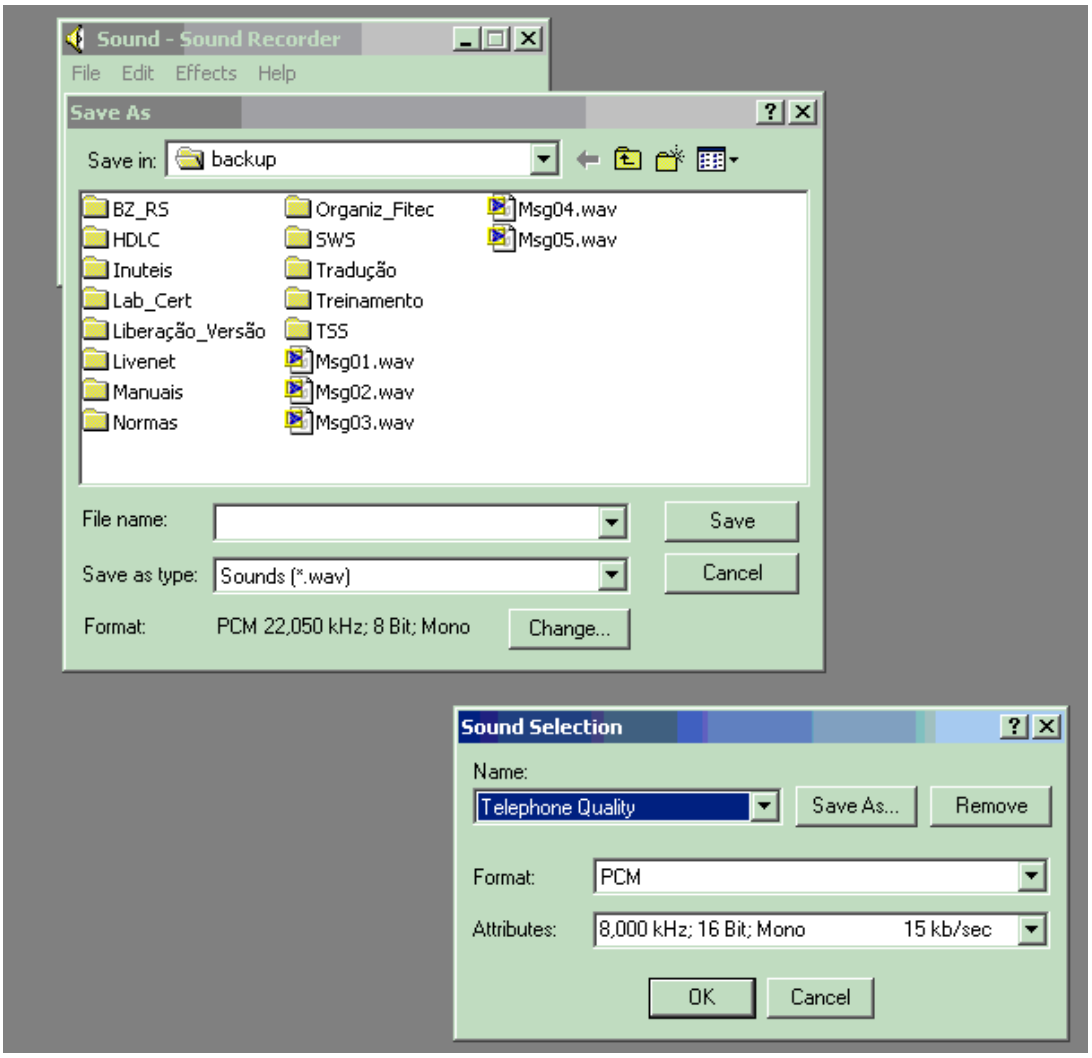


Figure 3-4 - Sound Selection

Installation

The Message Generator program runs on Windows Platform (95,98, 2000 and NT). In order to install the Message Generator program, you should execute the Message Generator Setup through the menu **Start/Programs/CSR/Message Generator Setup** or double-click on the icon available on the computer´s desktop where the installation of the CSR program was done. (Figure 3-5). If the icon is not available in the desktop , install the software through double-click on MessageGeneratorSetup.exe file available in the CSR directory.

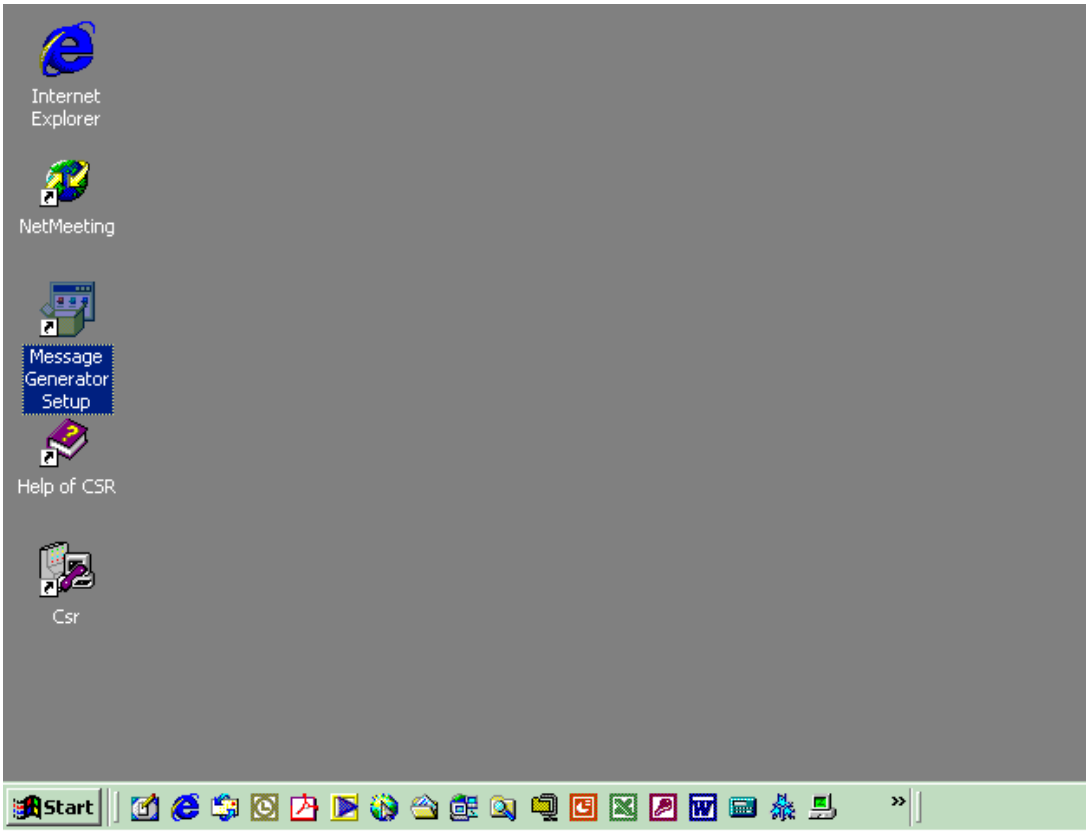


Figure 3-5 - Installation

The Wizard will make questions during the installation and the sequence **Continue, Next** and **Close** will must be selected. There is a on-line help with aid the user to operate the program

Message File Generator

Execute the Message Generator program through of the menu **Start/Programs/LCT BR Message Generator**. (Figure 3-6).

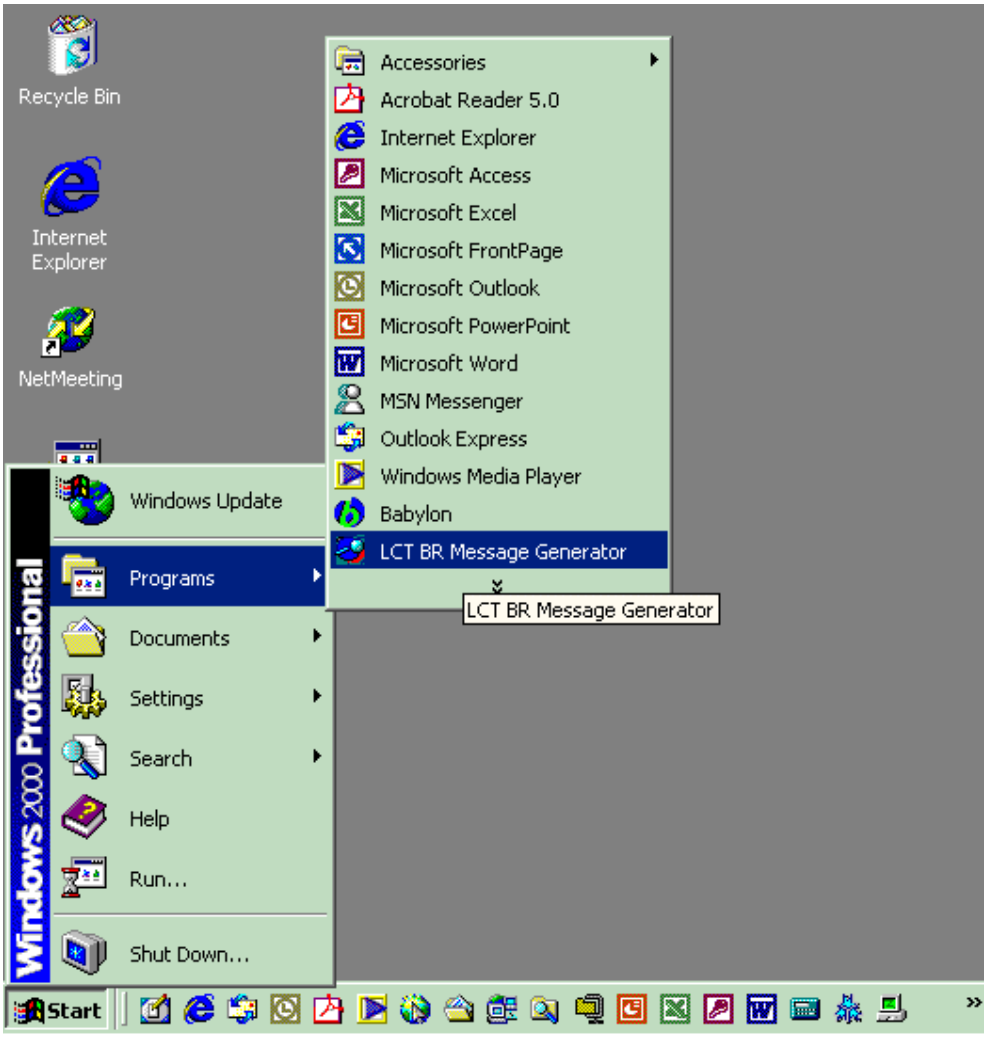


Figure 3-6 - Message Generator

In the initial screen select the **Next** option. (Figure 3-7)

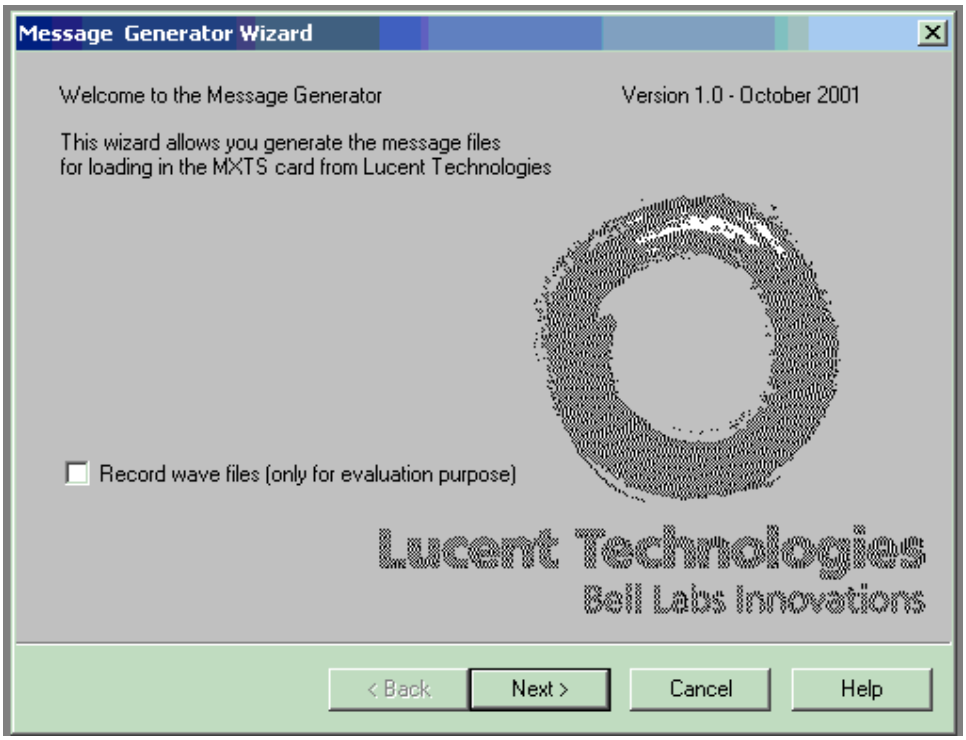


Figure 3-7 - Message Generator Wizard

In the next screen must be defined the directory where it was stored the message files in the wave format. Click in the **Next** button to continue. (Figure 3-8). All the files in this directory will be stored in the binary file.

Note: due to a characteristic of the system, we suggest the operator to include in the binary file at least four identical messages to the dial tone event. It is, have four identical wave files with different names for the message to replace the dial tone event. The commands **COP-MSGDSP** and **CR-JMA**, in section 5, describe how to transfer the binary file to the BZRS and also how to associate the announcements to its specific events.

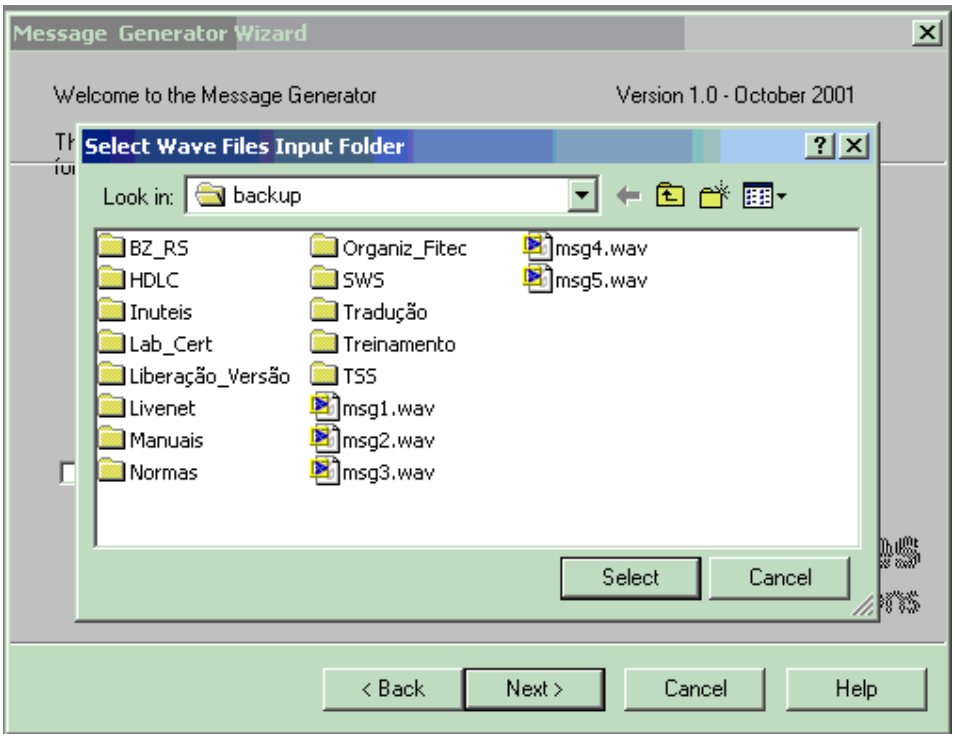


Figure 3-8 - Selecting Wave Files

This next page allows you to change the order of the messages. First you select a message with the blue line, then using **ALT-D** you move down the message or **ALT-U** you move it up. Note that the message indexes remain the same (Figure 3-9).
To change an index number, click two times on any index with left button and enter a new one. The allowed range is 100 to 355. You can not use the same index to two different messages.
To delete a message, select the line and press **DEL.**

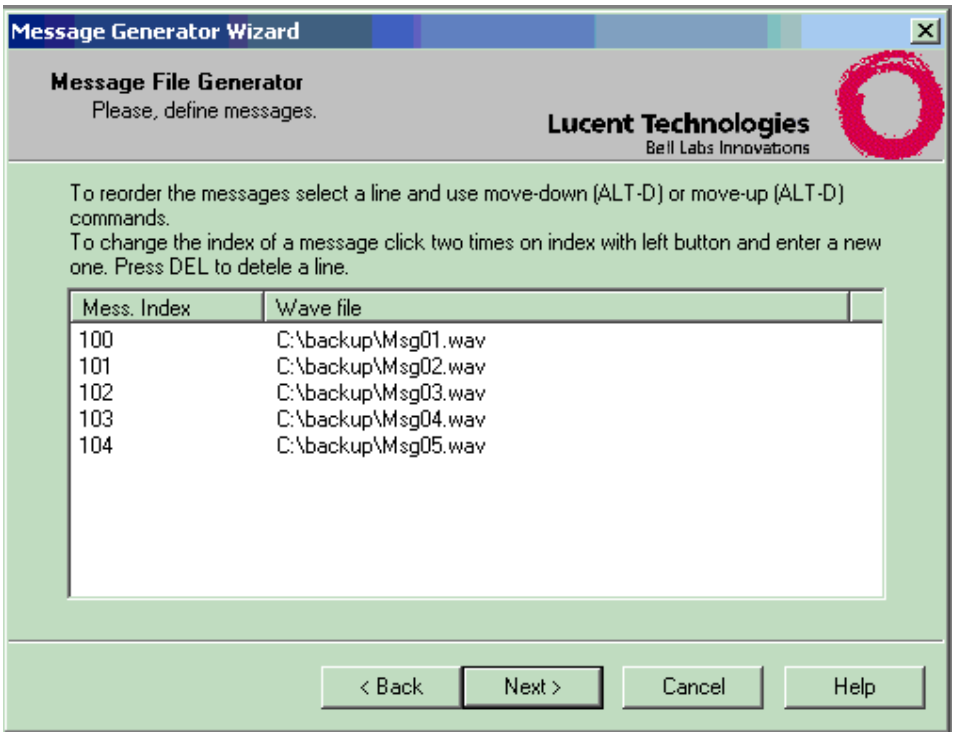


Figure 3-9 - Messages Index

Select the appropriated companding law for the country where the equipment will be installed. (Figure 3-10).

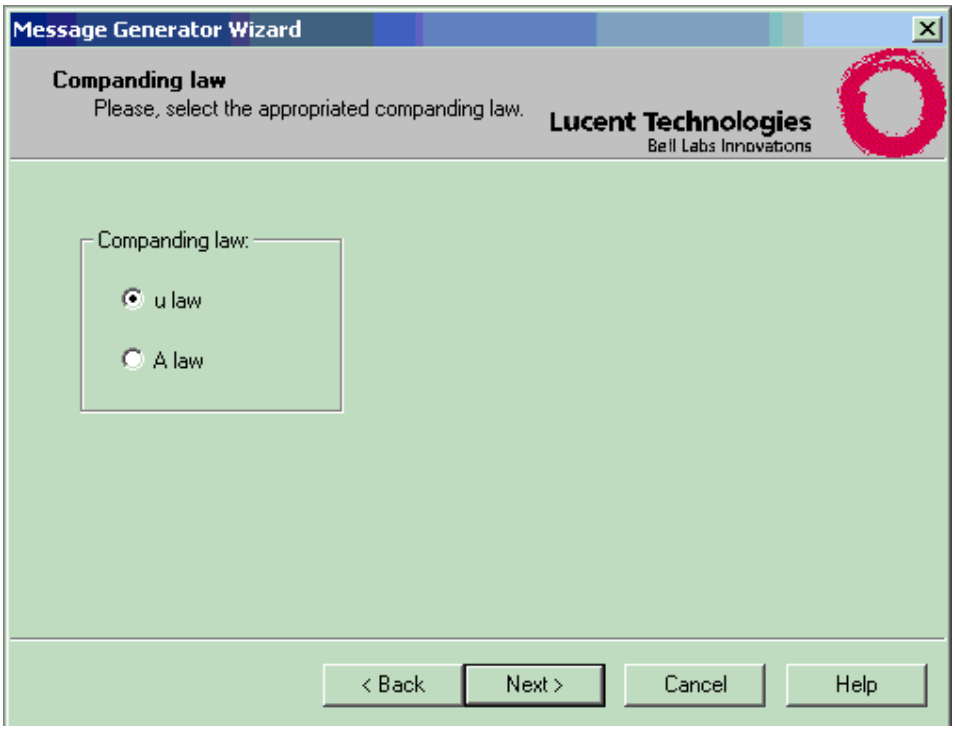


Figure 3-10 - Companding Law

Click in **Finish** button to conclude the creation of the MXTSMssg.bin file with the messages.(Figure 3-11)

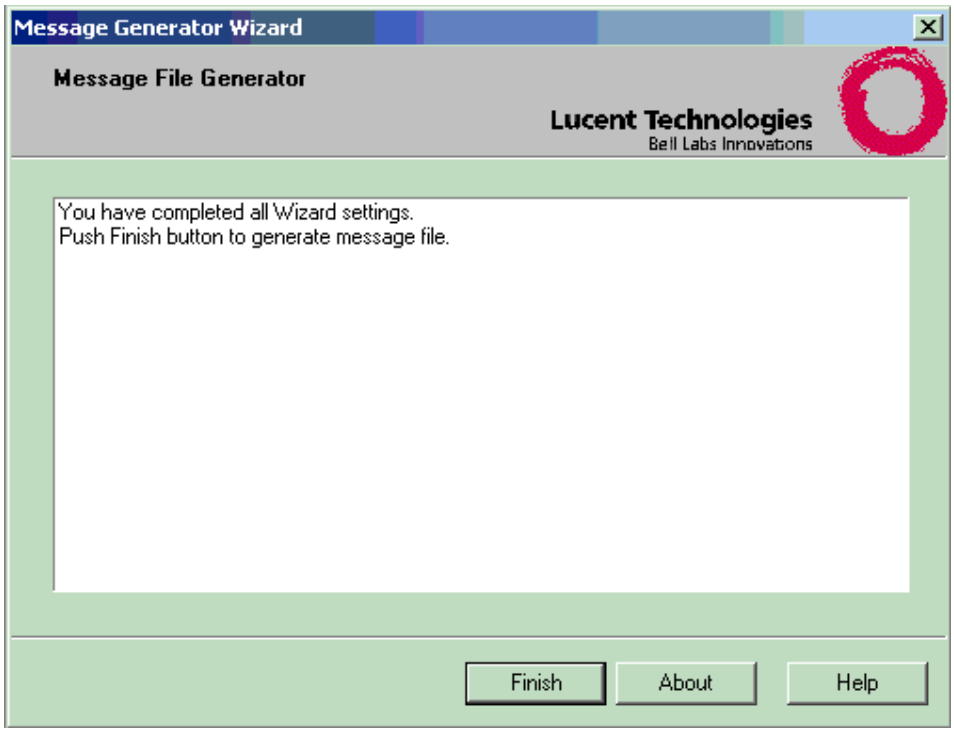


Figure 3-11 - Finishing

The Wizard shows the messages being processed and at the end it displays the size of binary file in bytes.
The MXTSMssg.bin file will be created in the same directory where it was stored the messages in the wave format. (Figure 3-12)

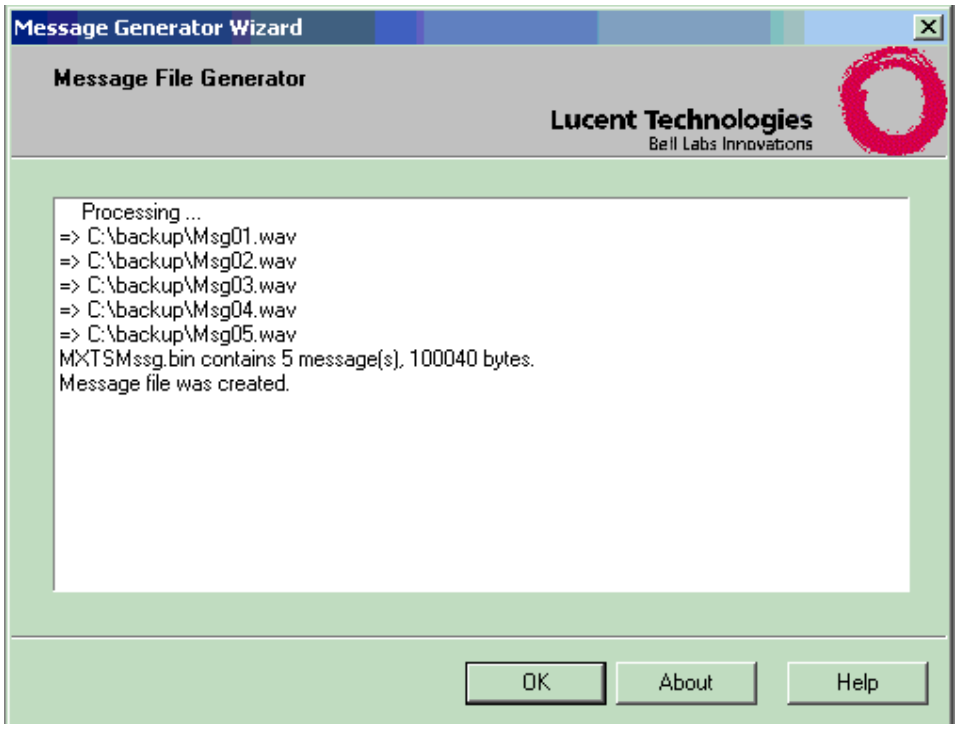


Figure 3-12 - MXTSMssg.bin File

BZ-RS Downloading

To download the binary file to the DSP processor in BZ-RS DSP, use the Element Manager command COP-MSGDSP . To execute this command you have to specify the BZ-RS DSP address (MXTS board) and the binary file path and filename. (MXTSMssg.bin)

4 Maintenance

Overview

Purpose This chapter presents the procedures for performing the diagnosis routines, the software update and the CPU replacement.

Diagnosis

BZ-RS can carry out a series of tests to verify the correct operation of all functional blocks of the boards. Diagnostic tests can be carried out only when BZ-RS is not in ESA (emergency) mode, since these tests use important resources for BZ-RS operation during ESA.

The diagnostic-test can be turned on immediately or through a periodic scheduling. The result of the last test (immediate or scheduled) is always available through CSR command.

CSR Command related to diagnosis

- `PR-AUTEST : HOU = XX-XX, [ TSP=X];`

Program time and frequency, days (1..7), of automatic diagnostic-tests.

- `RP-AUTEST;`

Remove diagnostic-tests scheduling

- `IP-AUTEST;`

Examine scheduled tests

- `AT-AUTEST : TYP = XXX, [,UNI = X][,FLASH][,EPE];`

Activate an immediate diagnostic-test

TYP parameter can be FAB or DIAG.

FAB argument indicates manufacturing tests and DIAG indicates usual diagnostic tests

FLASH argument indicates all FLASH memory of DSP.

EPE argument indicates tests of emergency trunks.

If DIAG argument is specified in TYP parameter, FLASH parameter can not be used.

If FAB argument is specified in TYP parameter, EPE parameter can not be used.

If UNI parameter is specified, only MXTS boards of the indicated unit will be tested.

- `IT-AUTEST : [UNI = X];`

Examine results of diagnostic-test.

If UNI parameter is specified, only the results of MXTS boards of the unit into consideration will be showed.

Following an example of exit format of IT-AUTEST Command:

```
BOARD = 01-01
DATE= 01-04-26   HOU= 14:33:23   DAY = THU
CPU                                - Ok
Access and Identification          - Ok
DSP Processor                      - Ok
DSP RAM memory                     - Ok
DSP Flash memory                   - Not tested
DSP Links                          - Ok
MODEM                              - Not Ok
Serial Interface                   - Ok
Serial Interface (with external cable) - Not tested
Switch Matrix                      - Ok
H110 Interface                     - Ok
Emergency PCM Link                 - Not tested
Scan Point                         - Not tested
Relay                              - Not tested

BOARD = 01-02
DATE= 01-04-26   TIME= 14:33:27   DAY = THU
CPU                                - Ok
Access and Identification          - Ok
DSP Processor                      - Ok
DSP RAM memory                     - Ok
DSP Flash memory                   - Not tested
DSP Links                          - Not Ok
MODEM                              - Ok
Serial Interface                   - Ok
Switch Matrix                      - Ok
Switch Matrix (with external cable) - Not tested
H110 Interface                     - Ok
Emergency PCM Link                 - Not tested
Scan Point                         - Not tested
Relay                              - Not tested
```

NOTES:

1. When a diagnostic-test is required and BZ-RS is already in ESA mode, the test will not be carried out. An error message is given to the operator.

2. In failure of diagnostic-tests, an URGENT alarm is registered "DIAGNOSTIC FAIL BOARD=XX-XX" for the MXTS board in failure. This alarm only will be reset when a new diagnostic-test indicates the end of the failure or when the CPU of BZ-RS is reset. A red luminous indicator (led) of the board in failure stays

turned on.

3. Some tests depend on the perfect operation of the other tests; for example, the matrix test depend on the result of access test; in these cases, the second test can not be carried if the prior test fails.

4. The IT-AUTEST command presents always the last test result. If it is issued during a diagnostic test execution the system will wait until the test is finished to present the result to the operator, thus it may hold the prompt up to 30 minutes, when the parameter FLASH is used.

Description of tests

Tests that are carried out when TYP parameter is DIAG or FAB:

1. **CPU** – Verify CPU board to confirm its correct operation using POST test available in the BIOS of the board.
2. **Access** - It verifies the possibility of reading/writing and the version of the main controlling chips of MXTS boards.
3. **Matrix/Framers** - It tests the chips operation of the framers and matrix through the use of loops and data commutation in the chips.
4. **H110 interface** - It verifies if all the links available in H110 bars are in good condition, through the loops and commutation using chips of the matrix and framers.
5. **CPU DSP Test** - It verifies CPU operation and peripherals contained in the DSP.
6. **Test of DSP Memory** - It verifies the operation of DSP memories (internal e external) through random writing and reading. The test is not destructive.
7. **DSP Links** - It verifies the links between DSP and the matrix through the use of DTMF signal between the chips.
8. **Modem** - It verifies if the modem can answer correctly to the specific commands to the modem.
9. **Serial** – It verifies the operation of the serial interface through an internal loop.

Tests that are executed only if TYP parameter is FAB:

10. **Serial test using external cable** - It verifies through an external loop, the operation of the serial interface, as well as the protection circuits and adaptation of levels.
11. **Framers Tests using external cable** - It verifies the operation

of pcm chips, as well as impedance transformers and protection circuits.

12. **Scan-points Tests** - Through the use of an external test jig (which links the scan-points to the distrib-points), it verifies the operation of the circuits, as well as the speed of the opto-couplers.
13. **Relay Test** - Through the use of an external test jig (which links the scan-points to the PCM links via relays), it verifies the operation of the relays.
14. **FLASH of the DSP** - It verifies the operation through a non-destructive test in the flash memory, with pseudo-random writing and reading. As this is a long test (around 30 minutes), decreasing the shelf-life of the flash memory, it should not be used with frequency.

Note: The parameter TYP=FAB must only be used during the factory test. If the service provider craftsperson uses this parameter without the factory setup the diagnostic will fail and generate an alarm in the BZRS.

Test executed only when the TYP parameter is DIAG:

15. **Test of EPE Interface** - It verifies the operation condition of the emergency links through the alarms identified by peripherical chips.

Software Update

BZ-RS Software Update

Whenever a BZ-RS software update is needed, the following steps should be performed:

- From the command line, execute command REP-CNF to generate binary files that will allow the BZ-RS data recovery. This is needed in case the new BZ-RS software version has different format in its internal data tables.

- With command IT-VER, verify the current software version. This command shows which is the current version and the backup version, if there is one. The meaning of the presented numbers is shown in the following example:

```
IT-VER;
```

SOF00123A1, where:

  - *00* indicates the year
  - *123* indicates which is the application (this is an R&D internal number)
  - *A* indicates the software version. This field is incremented when new features are added to the software.
  - *1* indicates the software edition. It is incremented when previous versions problems are solved.

- Get the CD with the new version. It should contain a compressed file with the name E00123.CHA, where 00 and 123 are the same fields obtained from IT-VER. This file contains:

  - DSP Firmware
  - DSP Tones table
  - Software for the BZ-RS

Please note that the numbers that compose the compressed file name may vary, depending on the software version it contains.

- Transfer the new software to the BZ-RS using the following command:

`COP-PRG : FIL = "D:\Eyy123xx.BIN"` (make sure you choose the correct drive)

Wait for the transfer to finish.

- Check the transferred version with command *IT-VER*. You should see the same current version, but a new version in the backup area.

- Activate the new version with the following command:

TR-PRG;

This will end the communication between the BZ-RS and the Element Manager and force the BZ-RS to reset and boot with the new version.

- If the new version loaded does not have changes in its internal data tables, the BZ-RS is operational after it finishes booting.

- If the new version loaded has changes in its internal data tables, after the BZ-RS finishes booting, the existing data tables will be incompatible with the new format. Should this happen and the BZ-RS software will look for a minimum configuration backup containing information such as the number to call the Element Manager and the modem port configuration. Having found it, the BZ-RS will clear all the internal data tables, copy this minimum configuration from the backup area to the official area and raise an alarm ("corrupted data base"), calling the Element Manager.

- In such situation, the BZ-RS recovery is not automatic. The operator must notice the raised alarm, acknowledge it and download valid data to the BZ-RS. This may be done following these steps:

    - Run the program CNF.EXE, providing as input the files generated in step 1 and choosing option 'File', then 'Generate command file'. This will generate a command script file.
    - The generated command script file should be executed by the operator with command *EX-CMD:FIL="generated_script.cmd*". This will cause the internal data tables to be filled with data that is compatible with the format used by the new software version.
    - After this is done, the BZ-RS is operational.

Element Manager Software Update

Whenever an Element Manager software update is needed, the following steps should be performed.

- There is no need to save the basic CSR configuration files (CSR.INI, AGENDA.DAT, CADCEN.DAT, CADOPE.DAT and CADCMD.DAT) before uninstalling the CSR. After installing the new version, if some change was introduced in the new Element Manager software version, the affected files will be automatically converted and updated, thus preserving local configurations previously made.

- The new Element Manager software version may be installed in a directory different than the previous version. In this case, however, the CSR configuration files will not be automatically converted and updated, unless the user copy these files to the new directory before installing the new version into it.

- Install the new version from the installation disk(s), following the steps described in the Installation session of this manual.

- In case the new version is installed in a directory different than the previous version, make sure that the shortcuts to it (if any) are properly updated.

CPU Replacement

CPU replacement

Wherever necessary to replace the CPU of the system, the operator shall observe the following procedure:

1. Using a CPU pack delivered from the LUCENT factory:

- Generate the command file through the CNF program using the CNFxxx.DAT files previously backed up through the REP-CNF command.
- Replace the CPU in the system.
- Connect to this new CPU using the default name that comes from the factory:

  INI-CON LOC=”LUCENT”

  This exchange shall be registered at the EM. Check with IT-EXC command, if it is not registered use the following command to register the exchange:

  CR-EXC LOC=”LUCENT”, PAS=”LUCENT”

- Check the BZRS load:

  IT-VER

  If it is not the latest one, it shall be updated:

  COP-PRG and then TR-PRG

  At this time the BZRS will reset and the connection will be dropped.Reconnect to the BZRS.

- Set the BZRS to the configuration mode:

  INI-CNF

  At this time the BZRS will reset and the connection will be dropped.

- Reconnect to the BZRS.

- Transfer the configuration file to the BZRS:

EX-CMD FIL=”*file_path”*

- Finish the configuration mode*:*

END-CNF;

At this time the BZRS reset and the connection will be dropped.

Note: This command may be included the end of the configuration file.

- Reconnect to the BZRS and check that the configuration was properly downloaded.

2. Using a CPU pack from with unknown configuration:

This procedure can only be performed locally, using the RS-232 communication path between the BZRS and one PC with CSR software. The 19200 baud rate shall be set to the RS-232 PC port (details in the section 5, MD-CSRCOM command).

- Generate the command file through the CNF program using the CNFxxx.DAT files previously backed up through the REP-CNF command.
- Replace the CPU in the system.
- With the system turned off, pull out the MXTS pack and set the switch 1 of the SW1 to ON. The SW1 is located next to the LED1 in the components layer of the MXTS pack.
- Re-plug the MXTS board and turn the BZRS system ON. At this time the LED3 will be flashing ORANGE for a while and then becomes RED. It will still RED for about 4 minutes and then becomes GREEN. This step is used to clean up the existing configuration in the CPU pack.
- When the LED3 becomes GREEN, switch the BZRS off, pull out the MXTS pack and return the SW1 to OFF.
- Re-plug the MXTS pack and turn the BZRS ON.
- Connect to the BZRS:

INI-CON LOC=”CONFIG1”

- Issue the following commands in the command line:

MD-EXCLOC : LOC = "*loc_name*" ;

MD-EXCPAS : PAS = "*loc_passwd*" ;
CR-UNIT : UNI = 01 ,TYPUNI = USP ;
END-CNF;

At this time the BZRS reset and the connection will be dropped.

- Reconnect to the BZRS, using the new *"loc_name"* and transfer the configuration file:

EX-CMD FIL="*file_path"*

Note: the new "loc_name" has be previously created in the EM through the command CR-EXC (details in section 5).

- Finish the configuration mode*:*

END-CNF;

At this time the BZRS reset and the connection will be dropped.

Note: This command may be included the end of the configuration file.

- Reconnect to the BZRS and check that the configuration was properly downloaded.
- Check the BZRS load:

  IT-VER

  If it is not the latest one, it shall be updated:

  COP-PRG and then TR-PRG

  At this time the BZRS will reset and the connection will be dropped.

- Reconnect to the BZRS and check the right load is running.

General note: after every reset, the BZRS will take about 5 minutes to come up again.

5 Detailed Command Description

Overview

Purpose This chapter presents a detailed description of the commands and related parameters used in the management system of the BZ-RS.

Command Structure

Each command in the CSR Commands Language has a structure and a meaning.

The set of rules-defining the commands structure makes up the Commands Language Syntax, which was designed according to ITU-T Recommendations Z.301 and Z.341 -“Man Machine Language (MML)”.

Command

A command consists of a code, defining the action to be carried out, and a block of parameters specifying additional information required to carry out that action. Some commands require no parameters, consisting merely of the respective code.

The command code is separated from the parameter block by a “:” (colon). The parameters of a block are internally separated by a “,” (comma). The command is terminated by a “;” (semicolon).

```
CR-SUB : SUB = [xxxx-]xxxx, TER = xx-xx-xx, CLA = xxx [, SNL = xxx ] ;
\_____/\_____________________________________________________________/
  code                                  parameters
```

To expedite inputting system commands, the “:” separator may be omitted. The end-of-command indicator “;” may be omitted from keyboard-input commands but must be included in commands contained in a commands file.

Command Code

The command code consists of a verb and a name, in mnemonic form, separated by a “-“(dash), or, optionally, by a blank space. The verbs used in the Commands Language are listed below:

AT Activate	IP Query programming
COP Copy	IT Query

CR Create	MD Modify
DSB Disable	PR Program
DS Deactivate	RV Remove
EX Run	REP Generate report
END End	RP Delete programming
ENA Enable	SU Suppress
INI Initiate	TR Change
RE Record	

Parameters

The additional information required to carry out a command is specified by means of parameters. A parameter consists of two parts: its name, which identifies it, and its argument, containing the datum to be processed. The name and argument are separated by a "=" (equal).

Some parameters do not include an argument, the so called YES or NO parameters. When the parameter name is specified, a YES value is associated to its argument; and when omitted, NO will be associated.

As parameters are defined by their names, they can be specified in any order in the command.

- ***Parameter Name***

  The parameter name is a mnemonic identifying the type and structure of the information contained in its argument. Some parameter names are listed below:

  SUB subscriber directory number
  TER terminal number
  CLA terminal class

- ***Parameter Argument***

  The parameter argument consists of the datum to be processed when running the command.
  The argument may consist of one or more information units, called single or compound arguments, respectively.

Information units in a compound argument are separated by a "-" (dash).

SUB = 1123 single argument
TER = 2-10-5 compound argument in the unit-board-cir format, where:

unit: unit number
board: terminal board number
cir: board circuit number

OBS.:When the argument of a parameter is specified as a string, it must be delimited by single (apostrophe) or double quotes.

In some cases, the argument itself has string information that also also be specified between quotes. In these cases, if you start the argument with a single quote, you must use double quotes delimiting the internal strings, or vice-versa.

Examples:

PR-AGENDA NAGD=1, CMD = "EX-CMD FIL = 'CMD1.CMD' "
PR-AGENDA NAGD=1, CMD = 'EX-CMD FIL = "CMD1.CMD" '

- ***Information Units***

  Each information unit is defined by its type and range of valid values. The type may be, for instance, a decimal number, a hexadecimal number or an identifier.

Designation Value	***Type***
NAGD (1..10)	scheduling the Agenda decimal number
UNIT (1..1)	exchange unit decimal number
CLA (1..128)	terminal class decimal number

MERGING INFORMATION

To simplify inputting commands, the language allows some commands to use a parameter argument that actually consists of a list of arguments. The rules for merging arguments and examples of their application are given below.

- ***Merging Single Arguments***

Several single arguments may be grouped in a parameter, separated by “&”. For instance, specifying 5&10&13 argument corresponds to specifying each of the 5, 10 and 13 arguments. The “&” separator can optionally be replaced by a blank space.

If the parameter arguments form a numeric sequence, they may be specified in a simpler manner, merely stating the first and last arguments of the sequence, separated by “&&”. For instance, specifying 5&&10 argument corresponds to specifying each of the 5, 6, 7, 8, 9 and 10 arguments. Merging single arguments is exemplified below for the CR-CPCT (Create PABX Group) command. The command shown in (1) is equivalent to the commands sequence given in (2).

```
(1)CR-CPCT : KEY = 1200, SUB = 1201 & 1207 & 1209;
(2)CR-CPCT : KEY = 1200, SUB = 1201;
   CR-CPCT : KEY = 1200, SUB = 1207;
   CR-CPCT : KEY = 1200, SUB = 1209;
```

- ***Merging Compound Arguments***

  Several compound arguments may by specified in a single parameter, separated by “&-“. For instance, specifying 1-5-3&-1-7-2 argument corresponds to specifying each of the 1-5-3 and 1-7-2 arguments. The “&-“ separator may optionally be replaced by a blank space.

  If just the last information unit of the compound arguments is different and if they consist of a numeric sequence, then the arguments may be merged by specifying the first argument completely and just the last information unit of the last argument, separated by “&&-". For instance, specifying 1-7-2&&-7 argument corresponds to specifying each of the 1-7-2, 1-7-3, 1-7-4, 1-7-5, 1-7-6 and 1-7-7 arguments.

  The same applies to each information unit in compound arguments. If any unit is a numeric sequence, the separator “&&-“ may be used for each one. For instance, to specify argument 1&&-2-7-6&&-8 corresponds to specifying each argument 1-7-6, 1-7-7, 1-7-8, 2-7-6, 2-7-7 and 2-7-8.

  Merged compound arguments are exemplified below for the MD-SUBSTE (Modify Subscriber Operating Status) command. The command entered via merged arguments, as shown in (1), corresponds to the commands sequence shown in (2).

```
(1)MD-SUBSTE : TER = 1-4-16 & 1&&-2-10-4&&-6, STE
= BLK;
```

```
(2)MD-SUBSTE : TER = 1-4-16, STE = BLK;
   MD-SUBSTE : TER = 1-10-4, STE = BLK;
   MD-SUBSTE : TER = 1-10-5, STE = BLK;
   MD-SUBSTE : TER = 1-10-6, STE = BLK;
   MD-SUBSTE : TER = 2-10-4, STE = BLK;
   MD-SUBSTE : TER = 2-10-5, STE = BLK;
   MD-SUBSTE : TER = 2-10-6, STE = BLK;
```

Blank Spaces And Comments

Blank spaces between command elements are ignored when running a command.

The use of comments is only allowed in commands files and is not acknowledged for commands input via the keyboard. A comment is any character placed between the end of command indicator ";", and the end of the line in the commands file. To insert a line of comments in a commands file, simply begin it with character ";".

□

Command Description

The commands available at the CSR are described below. Commands are listed alphabetically, ordered according to the mnemonic of the command code. A command description may consist of the following parts:

- Title
- Input Format
- Parameters
- Output Format
- Remarks

Title The title consists of the command code and name, followed by a brief description of its function.

Input Format The several command input formats are described with some special characters that indicate mandatory, optional or alternative command parameters. Optional parameters are given in brackets ("[" and "]"), and may or not be specified at command input. Alternative parameters are given in braces ("{" and "}") and separated by "|". Only one of the alternative parameters in the list shown between braces must be specified at command input. This combination of brackets and braces is used to present the several command input formats in a compact manner.

The following example illustrates the description of the commands Input Format. The description of the input formats of the IT-SUB (Query Subscriber) command is provided in (1). The six different input formats valid for this command are given in (2), according to the description provided in (1).

```
(1) IT-SUB [ : { SUB = [xxxx-]xxxx | TER = xx-xx-xx |
STE = xxx | CLA = xxx | SNL = xxx }];

(2) IT-SUB : SUB = 0001 ;

    IT-SUB : TER = 2-12-6 ;

  IT-SUB : STE = BLK ;

    IT-SUB : CLA = 02 ;

 IT-SUB : SNL = DEC ;
```

IT-SUB ;

In the Input Format description, each parameter of the command is indicated by its name and argument. Single arguments are indicated by a sequence of "x", giving the maximum number of characters that may be used in the parameter argument. A list of arguments is indicated by "&..&", as shown in the following example:

```
IT-SUB : TER = 1-3-14&..&8-16-1;
```

Parameters

The description of each command parameter consists of the following information:

- Parameter name;
- Parameter meaning;
- Set of arguments valid for the parameter;
- Control Program compatibility.

The set of arguments valid for a numeric parameter is specified in a (li..ls) format, where li is the lower limit value and ls is the upper limit of the parameter.

Output Format

The Output Format description is presented only for query-type commands, indicating the data displayed when the command is successfully run. In the case of the remaining commands, message "OK" is displayed for a successful command run. In the event of an error in command interpretation or execution, the respective error message will be displayed.

Remarks

The remarks provide eventual additional information on the command, such as:

- Explanations on parameter compatibility;
- More details on parameter arguments;
- Reference to prerequisite or associated commands
- Explanations on procedures for executing commands.

Important Note: Client and Server File Systems

The EM software follows the client/server model. The CSR program carries on these two roles: CSR Client and CSR Server. In the BZ-RS application, the server CSR runs on the computer installed in a 5ESS Switch shelf. The client CSR may run on the same server computer, or on another computer connected to it through a LAN.

There are many commands that have parameters where a file name

must be specified (typically, the FIL parameter is used for this purpose). When the client and server CSR are installed on different computers, it is important to know that the file system that must be considered is the one where the server CSR is installed. In other words, ***all file references are interpreted according the server file system***.

For example, in the command

EX-CMD : FIL = “C:\CSR\CONFIG1.CMD”

the file “CONFIG1.CMD” is searched in the directory “\CSR” on the drive “C:” of the server file system.

This implies that some operating system features may be necessary in order to access the file involved. Considering that the client and server CSR run on the same operating system (Windows 2000 or Windows NT) and communicate using TCP/IP protocol, there are some alternatives ready to be used for sharing the client and server file systems, when necessary. Mapping a network drive on the client computer, for example, is a reasonable one. For this, do the following:

1) On the server computer, share the directories (if more than one) where you intend to store the files;
2) On the client computer, map a network drive that points to the server directory that is being shared.

□

Error Messages

The error messages have been designed to be clear and self-evident, so that the operator will not have to consult other sources to understand their meaning.

□

Commands Executable with the CSR Disconnected from a BZ-RS

AGENDA Commands

IP-AGENDA

Query Agenda Schedule

This command is used to display the Agenda scheduling.

INPUT FORMAT

```
IP-AGENDA [ : NAGD = xx ];
```

PARAMETERS

NAGD: Agenda schedule number (1..100)

OUTPUT FORMAT

If the NAGD parameter is specified, the date or periodicity, the time and the command file associated with the selected schedule will be displayed in the following format:

```
NAGD = xx {DAT = xx-xx-xx | DAY = xxx&..&xxx }
    HOU = xx-xx
    CMD = "xx..xx"
```

If the NAGD parameter is not specified, the date or periodicity, the time and the commands file associated with all Agenda schedules are displayed in the following format:

```
NAGD = xx {DAT = xx-xx-xx | DAY = xxx&..&xxx }
    HOU = xx-xx
    CMD = "xx..xx"
 .                .                .
 .                .                .
 .                .                .
NAGD = xx {DAT = xx-xx-xx | DAY = xxx&..&xxx }
    HOU = xx-xx
    CMD = "xx..xx"
```

The status of schedules already run is displayed on the right of HOU parameter.

In schedules specifying the DAY parameter, the date of the last run of the commands file will be displayed, in brackets, on the right of the schedule status.

REMARKS

- The status of Agenda schedules are: Programmed and Finished.

PR-AGENDA Program Agenda

This command is used to include a schedule in the Agenda, specifying its date or periodicity and time to execute a command or commands file.

INPUT FORMAT

```
PR-AGENDA : NAGD = xxx, {CMD = "xx..xx" | FIL =
"xx..xx"}

, [ { DAT = xx-xx-xx | DAY = xxx&..&xxx }, ] HOU = xx[-
xx];
```

PARAMETERS

NAGD: Agenda schedule number (1..100).
CMD: Command (up to 255 alphanumeric characters, between quotation marks or apostrophes).
FIL: File name in the [drive:] [directory] filename format.
Drive: Drive (A, B, C, etc.) containing the disk where the file is stored in (if omitted, the current drive will be accessed).
Directory: Name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
Filename: Name of the file (up to 8 alphanumeric characters)
DAT: Date in the yy-mm-dd format

Where:
yy: year (00..99)
mm: Month (01..12)
dd: Day (01..31)

DAY: List of days of the week

Where:
SUN: Sunday
MON: Monday
TUE: Tuesday
WED: Wednesday
THU: Thursday
FRI: Friday
SAT: Saturday

HOU*:* Time in the ho[-mi] format

Where:
ho: hour (00..23)
mi: minute (00..59) (optional)

REMARKS

- If DAT and DAY parameters are not specified, the command will run every day of the week.
- In the EM server, the agenda is always active and the scheduled commands are executed independently of any client connected to the server.
- Whenever an error occurs during the execution of an agenda item, the EM server activates an alarm related to the respective NAGD number. This alarm will be active until the same entry is automatically re-executed without any error, or if the entry is removed through the RP-AGENDA command.
- In the EM server, the agenda items are executed without any visual connection to the client that programmed the agenda. In order to know the response of a scheduled command, it is necessary to schedule a command file (instead of a command). In addition, it is necessary to insert an ENA-LOG command at the start of the command file, so that the commands and their responses are logged. After the execution, the log file can be consulted in order to know exactly what happened.
- Any CSR command can be scheduled in the Agenda via the CMD parameter, the operator being responsible for the result of its execution.
- There are two ways of executing a command file in the agenda. Directly, via the FIL parameter, which programs the file name, or indirectly using the CMD parameter and programming the EX-CMD (Run commands file) command.
- The path specified in the FIL parameter must be on the EM server file system.

RP-AGENDA Remove Agenda Schedule

This command is used to remove a schedule from the Agenda.

INPUT FORMAT

```
RP-AGENDA [ : NAGD = xx ] ;
```

PARAMETERS

NAGD: Agenda schedule number (1..100)

REMARKS

- If the NAGD parameter is not specified, all schedules will be erased from the Agenda.

ALARM Commands

DSB-ALARM Disable Exchange Alarms-Reception

This command disables the CSR from receiving alarm notifications from an exchange. The alarm notification is generated by the exchange when an urgent or semi-urgent failure is detected.

INPUT FORMAT

```
DSB-ALARM : LOC = "xxxxxxxx" ;
```

PARAMETERS

LOC: name of exchange installation site (up to 8 alphanumeric characters in quotation marks)

REMARKS

- This command takes effect the next time the CSR connects to the exchange.
- When this command is executed and the connection is stabilished, the connection will be interrupt for update and then return to normal operation. For next operation will be necessary to execute command INI-CON.

ENA-ALARM Enable Exchange Alarms-Reception

This command enables the CSR for receiving alarm notifications from an exchange. An alarm notification is generated when an urgent or semi-urgent failure is detected.

INPUT FORMAT

```
ENA-ALARM : LOC = "xxxxxxxx" ;
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)

REMARKS

- The use of this command should be restricted to Remote Supervision Center qualified to receive alarms from the exchanges.
- This command takes effect the next time the CSR connects to the exchange.
- When this command is executed and the connection is stabilished, the connection will be interrupt for update and then return to normal operation. For next operation will be necessary to execute command INI-CON.

IT-URGALARM Query Urgent Alarms

This command is used to display urgent and semi-urgent alarms sent to the CSR through alarm notifications.

INPUT FORMAT

```
IT-URGALARM ;
```

OUTPUT FORMAT

The alarms not yet notified to the CSR operator will be displayed in the following format:

```
LOC = xxxxxxxx  [ ENV = xxxx ]  DAT = xx-xx-xx   HOU =
xx:xx:xx   UNI = xx   SEMI URGENT

 .            .            .           .

 .            .            .           .

 .            .            .           .

LOC = xxxxxxxx  [ ENV = xxxx ]  DAT = xx-xx-xx   HOU =
xx:xx:xx   UNI = xx   SEMI URGENT
```

REMARKS

- If an exchange is programmed to set up an alarm call, all the (not yet notified) alarms registered in the exchange will be sent to the CSR whenever an urgent or semi-urgent failure is detected. The reception of the alarms is signaled on the CSR screen (a button with a blinking label “Alarm” appears).
- All received alarms are also written on the Operating History log of the exchange that sent the alarms.
- The successful execution of the IT-URGALARM command alters the status of the CSR screen (the “Alarm” button disappears) and displays the urgent and semi-urgent alarms sent by the exchanges supervised by the CSR, and not yet notified to the operator.
- Pressing the “Alarm” button simulates the effect of typing the IT-URGALARM command.

EXC Commands

CR-EXC Creates an Exchange in the Exchange Registry

This command is used for inserting an exchange in the registry of exchanges supervised by the CSR.

INPUT FORMAT

```
CR-EXC : LOC =”xxxxxxxx”, PAS = “xxxxxxxx”
```

```
[,NUM = "xxxxxxxxxxxxxxx"]

[, PATH = "xxxxxxxxxxxxxxxxxxxxx" ] ;
```

PARAMETERS

LOC : name of exchange installation site (up to 8 alphanumeric characters in quotation marks)
PAS : exchange access password (up to 8 alphanumeric characters in quotation marks)
NUM : exchange access number (up to 30 alphanumeric characters in quotation marks)
PATH : name of directory in which all exchange data files are to be written (up to 40 alphanumeric characters in quotation marks)

REMARKS

- The CR-EXC command may be carried out with the CSR disconnected from a specific exchange. The registered password is checked when setting up communications with the exchange. The purpose of the password is to prevent unauthorized users from accessing the exchange.
- The NUM parameter should be specified when registering an exchange that will be connected through a dial up connection. This number will be sent to the modem so that it can automatically dial to the exchange.
- The exchange access password is case-sensitive.
- The argument of the NUM parameter can contain the following alphanumeric characters: digits from 0 to 9, comma, exclamation mark and ‘w’, ‘t’, ‘p’. The five non-numeric characters are used to configure the modem dialing mode and have the following meanings:

  (,): specifies that the modem should pause before dialing the next digit;
  (!): specifies that the modem should simulate a flash, disconnecting from the line for half a second;
  (w): specifies that the modem should wait for the second dial tone in connections set up through PABX equipment;
  (t): specifies that dialing should be multifrequency ;
  (p): specifies that dialing should be pulsed.

- The ‘t’, ‘T’, ‘p’ and ‘P’ characters are only valid for the first position of the NUM parameter. If none are used, dialing will be pulsed.
- The path specified in the PATH parameter must be on the EM server file system.
- The CSR exchange registry can contain up to 150 exchanges.

IT-EXC Query Exchange Registry

This command is used for consulting the registry of exchanges supervised by the CSR.

INPUT FORMAT

```
IT-EXC [ : LOC = "xxxxxxxx" ] ;
```

PARAMETERS

LOC : name of exchange installation site (up to 8 alphanumeric characters in quotation marks)

OUTPUT FORMAT

If the LOC parameter is specified, the selected site name, directory data and access number are displayed, in the following format:

```
LOC = xxxxxxxx   xxx-xxxxx   PATH = xxx..xxx   [ NUM =
xxx..xxx ]
```

If the LOC parameter is not specified, all registered exchanges' name, directory data and access number are displayed, in the following format:

```
LOC = xxxxxxxx   xxx-xxxxx   PATH = xxx.xxx   [ NUM =
xxx..xxx ]

 .           .           .           .

 .           .           .           .

 .           .           .           .

LOC = xxxxxxxx   xxx-xxxxx   PATH = xxx.xxx   [ NUM =
xxx..xxx ]
```

REMARKS

- The IT-EXC command can be carried out with no specific exchange connected to the CSR.
- On the right of the site name, an indication of whether or not the CSR is qualified to receive alarm calls from the exchange appears, in the following format:

```
{ ENA-ALARM | DSB-ALARM }
```

MD-EXC Modify Exchange Registry

This command is used to alter an exchange password, access number

and data directory in the registry of exchanges supervised by the CSR.

INPUT FORMAT

```
MD-EXC : LOC = "xxxxxxxx" {[, PAS = "xxxxxxxx"]
         [, NUM = "xxxxxxxxxxxxxxx" ]
         [, PATH = "xxxxxxxxxxxxxxxxxxxx ] };
```

PARAMETERS

LOC: name of exchange installation site (up to 8 alphanumeric characters in quotation marks)
PAS: exchange access password (up to 8 alphanumeric characters in quotation marks)
NUM*:* exchange access number (up to 30 alphanumeric characters in quotation marks)
PATH*:* name of the directory in which all exchange data files should be written (up to 40 alphanumeric characters in quotation marks)

REMARKS

- The MD-EXC command can be carried out with no specific exchange connected to the CSR.
- The NUM parameter should be specified at remotely connected CSRs to define the number to be sent to the modem so that it can automatically dial to the exchange.
- The exchange password is case-sensitive.
- The argument of the NUM parameter can contain the following alphanumeric characters: digits from 0 to 9, comma, exclamation mark and 'w', 't', 'p'. The five non-numeric characters are used to configure the modem dialing mode and have the following meanings:

  (,):specifies that the modem should pause before dialing the next digit;
  (!):specifies that the modem should simulate a flash , disconnecting from the line for half a second;
  (w): specifies that the modem should wait for the second dial tone in connections set up through PABX equipment;
  (t): specifies that dialing should be multifrequency ;
  (p): specifies that dialing should be pulsed.

- Characters 't', 'T', 'p' and 'P' are only valid in the first position of the NUM parameter. If none are used, dialing will be pulsed.
- The path specified in the PATH parameter must be on the EM server file system.

SU-EXC Delete Exchange from Registry

This command is used to delete an exchange from the registry of exchanges supervised by the CSR.

INPUT FORMAT

```
SU-EXC : LOC = "xxxxxxxx" ;
```

PARAMETERS

LOC: name of exchange installation site (up to 8 alphanumeric characters in quotation marks)

REMARKS

- The SU-EXC command can be carried out without a specific exchange connected to the CSR.

CMD Commands

EX-CMD Run commands file

This command is used to activate the execution of a commands file.

INPUT FORMAT

```
EX-CMD : FIL = "xxx..xxx" ;
```

PARAMETERS

FIL : file name, in the format: [drive:] [directory] filename

drive: drive letter (A, B, C, etc.) containing the disk where the file is stored in (if omitted, the current drive will be accessed)
directory: name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
filename: name of the file

REMARKS

- The commands file should be created on a word processor in non document mode.
- A file command may consist of one or more lines, ending with the ";" (semicolon) character. All characters from the ";" to the end of the line will be considered as a comment. In order to include a line of comment in the commands file just begin it with the ";" character.
- The file commands are run in sequence. For each command executed, the corresponding response is displayed.
- The execution of the command file can be interrupted by the operator by pressing the cancel button or the <ESC> key.

- The command file cannot include the EX-CMD command.
- When the EX-CMD command is issued through the standalone CSR, a dialog box appears whenever an error occurs in running commands, providing the user with the option to terminate or continue the execution of the commands file.
- The path specified in the FIL parameter must be on the EM server file system, and should not have more than 80 characters.
- The path specified in the FIL parameter should not contain blanks or other special characters.
- If this command is used for BZ-RS reconfiguration from backup files, the command COP RAIUDAT must be use for append the Bill Number correspondent for each Directory Number, preferable after a command RE-RAIUDAT.

IT-CLACMD Query Command Classification

This command is used to display the list of operating classes applicable to executing a command.

INPUT FORMAT

```
IT-CLACMD [ : CMD = xx-xxxxxxxx | OCL = xx ] ;
```

PARAMETERS

CMD: command name
OCL: operating class (1..16)

OUTPUT FORMAT

If the CMD parameter is specified, all operating classes that allow executing the selected command will be displayed in the following format:

```
CMD = xx-xxxxxxx   OCL = xx&..&xx
```

If no parameter is specified, the list of operating classes for all commands will be displayed in the following format:

```
CMD = xx-xxxxxxx   OCL = xx&..&xx
  .           .              .
  .           .              .
  .           .              .
CMD = xx-xxxxxxx   OCL = xx&..&xx
```

If the OCL parameter is specified, all commands with the specified operating class will be displayed in the following format:

```
CMD = xx-xxxxxxx   OCL = xx&..&xx

  .          .              .

  .          .              .

  .          .              .

CMD = xx-xxxxxxx   OCL = xx&..&xx
```

MD-CLACMD Modify Command Classification

This command is used to alter the list of classes of operations allowed to execute a command.

INPUT FORMAT

```
MD-CLACMD : CMD = xx-xxxxxx, OCL = xx&..&xx ;
```

PARAMETERS

CMD: command name
OCL: operating class (1..16)

REMARKS

- All CSR commands can be carried out by Class 1 operators.
- Running the INI-CON, END-CON, MD-CSRCOM, IT-CSRCOM, END-CSR, EX-CMD, MD-OPEPAS, ENA-LOG, DSB-LOG, IT-LOG, RV-LOG, DSB-PAG, ENA-PAG PR-MACRO, IP-MACRO, RP-MACRO,INI-SESSAO, END-SESSAO, IT-IDIOMA, MD-IDIOMA commands is permitted for all operating classes and its classification cannot be altered through the MD-CLACMD command.

CON Commands

END-CON Ends Connection with Exchange

This command is used to break the connection between the CSR and the interconnected exchange.

INPUT FORMAT

```
END-CON ;
```

INI-CON Make Connection to Exchange

This command is used to set up a connection between the CSR and an exchange.

INPUT FORMAT

```
INI-CON  : LOC = "xx..xx" [,NATMP = xx [,INT = xxx ] ];
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)
NATMP: number of attempts to connect to the exchange (1..50)
INT: interval between connect attempts to the exchange in seconds (30..300)

REMARKS

- The type of connection to be set up, i. e., a LOC, RPL or RDL connection, depends on the way the CSR is programmed. The type of connection is obtained through the IT-CSRCOM (Query CSR Communication Parameters) command.
- The LOC parameter is mandatory when this command is issued through the client CSR.
- If the NATMP parameter is not specified, a single attempt to connect to the exchange will be made. Otherwise, i. e, if the NATMP parameter is specified, the result of each communication attempt will be displayed, until setting up the connection or reaching the limit of attempts.
- If the INT parameter is not specified, the interval between the connected attempts to the exchange will be 20 seconds.

CSR Commands

END-CSR End CSR Execution

This command is used to close down the execution of the CSR.

INPUT FORMAT

```
END-CSR ;
```

REMARKS

- The CSR can also be closed down via the Windows Close Program icon.

IT-CSRCOM Query CSR Communication Parameters

This command is used to query the CSR communication parameters.

INPUT FORMAT

```
IT-CSRCOM ;
```

OUTPUT FORMAT

The communication parameters for each CSRCOM interface will be

displayed in the following format:

```
TYP = xxx        PORT = xxxx     SPD = xxxxx    STOP = x
PARIT = xxxxx    NFIL = xx..xx   MTACK = x      MWTA = xx
MNTO = xx
```

REMARKS

- The EM server can be configured with up to 16 CSRCOM interfaces.
- The parameters of each CSRCOM interface are programmed independently.
- The MTACK, MWTA and MNTO parameters define the communication timings applied to setting up CSR-to-exchange connections. They appear only when this command is issued from a standalone CSR.

MD-CSRCOM Modify CSR communication parameters

This command is used to modify CSR communication parameters.

INPUT FORMAT

```
MD-CSRCOM :{[ TYP = xxxx ] [, PORT = xxxx ] [, SPD =
xxxxx ] [,STOP = x] [,PARIT = xxxxx] [, NFIL =
"xxx..xxx"] };
```

PARAMETERS

TYP: type of CSR-exchange connection:
- **LOC**: local connection
- **RDL**: remote connection over dialed line
- **RPL**: remote connection over private line

PORT: CSR computer serial communication port:
- **COM1**: COM1 serial port
- **COM2**: COM2 serial port
- **...**
- **COM32**: COM32 serial port

STOP: number of stop bits: 1 or 2

PARIT: parity
- **EVE**: even parity
- **ODD**: odd parity
- **NPA**: no parity

SPD: maximum serial port communication rate in bps (1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200)

NFIL: file name in the format: [drive:] [directory] filename
- **drive**: drive (A, B or C) containing the disk where the file is stored in (if omitted, the current drive will be accessed)

directory: name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
filename: name of the file (up to 8 alphanumeric characters)

MTACK: maximum waiting time to acknowledge a message (1..250)
MWTA: maximum waiting time before sending a new message or an acknowledgement message (1..250)
MNTO: Number of MWTA timings that defines the maximum time without receiving messages before breaking the connection

REMARKS

- The following table provides the configurations set up by command MD-CSRCOM:

Connection	TYP	PORT	RATE	STOP	PARITY
Local	LOC	com1 com2 ... com32	19200	1	none
Remote	RDL	com1 com2 ... com32	1200, 2400 ... 115200	1	none

Table 5-1 - Configurations set up by command MD-CSRCOM

- The CSR communication parameter defining the data word length cannot be configured via this parameter and has the following value: 8 data bits.
- The file specified in this command identifies the setup of the modem used by the CSR. The MODEM.MDM file is generic for several types of modem.
- The default values for connecting times are:
    - Local:

MTACK = 4
MWTA = 12
MNTO = 48

- Remote:
  MTACK = 15
  MWTA = 92
  MNTO = 06

- The MTACK, MWTA, MNTO parameters assume the default values in local connections.
- Please, see session CSRCOM INTERFACES (chapter 2) for more details concerning CSRCOM interfaces configuration.

IT-CSRHST Query CSR Exchange Operation Log

This command is used to display the exchange operation log, stored at the CSR.

INPUT FORMAT

```
IT-CSRHST [ : [LOC = "xxxxxxxx" [, ENV = xxxx ] ]
{[, DAT = xx-xx-xx ] [, ASE = xx ] [, TXT = "xxxx" ]} ;
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)

ENV: exchange working environment

- **CS**: Central Stage environment
- **PS**: Peripheral Stage environment (1..6)

DAT: date in the yy-mm-dd format:

- **aa**: year (00..99)
- **mm**: month (01..12)
- **dd**: day (01..31)

TXT: text to be looked for in the history items

ASE: alarm severity level:

- **UR**: urgent
- **SU**: semi-urgent
- **NU**: not urgent

OUTPUT FORMAT

Failures and events stored in the CSR exchange operation log are displayed in the following format:

```
DAT = xx-xx-xx   HOU = xx:xx:xx  [ ENV = xxxx ]  UNI =
xx   OCCURRENCE   XXX...XXX

 .                  .                  .

 .                  .                  .

 .                  .                  .

DAT = xx-xx-xx   HOU = xx:xx:xx  [ ENV = xxxx ]  UNI =
xx   URGENT   XXX...XXX
```

REMARKS

- When this command is issued from the standalone CSR, the LOC parameter can be omitted if the CSR is connected to the exchange. The LOC parameter is mandatory when this command is issued from the client CSR.

- The ENV parameter should be used for type CS exchanges, i. e., with created PSs.
- The ENV parameter will be displayed if the site is a Central Stage, i. e., with created PSs. Accordingly, ENV is used to distinguish the environment that originated the alarm.
- The ENV parameter may be specified if displaying a given operating environment log is required; otherwise, the log for all environments in the exchange will be displayed.
- If the DAT parameter is specified, only those alarms and events detected from the selected date on will be displayed.
- The ASE parameter allows selecting which alarms should be displayed, according to their level of severity. The following arguments can be specified for the ASE parameter:

  UR: only display urgent alarms
  SU: display urgent and semi-urgent alarms
  NU: display all alarms

- Alarms and events detected by the exchange are listed in the Exchange Operating Manual.

RV-CSRHST Remove CSR Exchange Operating Log

This command is used to remove the exchange operation log, stored at the CSR.

INPUT FORMAT

```
RV-CSRHST [ : [ LOC = "xxxxxxxx" [, ENV = xxxx ] ] ] ;
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)
ENV: exchange working environment
CS: Central Stage environment
PS: Peripheral Stage environment (1..6)

REMARKS

- The ENV parameter can be specified if removing a given operating environment log is desired for CS type exchanges, i. e., with created PSs.
- If LOC parameter is omitted, the operation log of the exchange connected to the CSR will be removed.
- The LOC parameter is mandatory when this command is issued from the client CSR.

IDIOM Commands

IT-IDIOM Query CSR Language

This command is used to identify the language the CSR is using.

INPUT FORMAT

```
IT-IDIOM ;
```

OUTPUT FORMAT

```
IDIOM = xxx
```

REMARKS

- The idiom is defined during the CSR initialization. In order to change the idiom, it is necessary to edit the CSR.INI, changing the *[Internacional]* session:

```
[Internacional]
Lingua=ING
TraduzCmd=SIM
```

- The possible idioms are *ING* (for English), *POR* (for Portuguese) and *ESP* (for Spanish). These mnemonics (*ING*, *POR* or *ESP*) must be used as values for the *Lingua* parameter.
- The *TraduzCmd* parameter must be kept inaltered (value=*SIM*).
- In order to change the idiom, it is necessary to edit the CSR.INI file and re-start the CSR program.

LOG Commands

DSB-LOG Disable CSR Command Log

This command is used to disable recording the commands run on the CSR in the file specified via ENA-LOG command.

INPUT FORMAT

```
DSB-LOG
```

ENA-LOG Enable CSR Command Log

This command is used to enable logging commands run on the CSR.

All commands and responses issued by the CSR will be recorded from the execution of the ENA–LOG command until the DSB-LOG command is entered, disabling the logging procedure.

INPUT FORMAT

```
ENA-LOG [: FIL = "xxx..xxx" ];
```

PARAMETERS

FIL: file name in the format [drive:] [directory] filename
Drive: drive (a, b or c) containing the disk where the file is stored in (if omitted, the current drive will be accessed)
Directory: name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
Filename: name of the file (up to 8 alphanumeric characters)

REMARKS

- The path specified in the FIL parameter must be on the EM server file system.
- If no file name is specified, a text file named *Lucent.log* will be created in the CSR installation directory. This file must be removed via RV-LOG command. Otherwise, every time the command is run again, the data will be appended to the file.
- Log files created without a password can be read and edited by means of a normal word processor. Encrypted files will be scrambled unless the IT-LOG command is run to display them.

IT-LOG Query CSR Commands Log

This command allows consulting the log file containing the commands carried out by the CSR.

INPUT FORMAT

```
IT-LOG [: FIL = "xxx..xxx" ];
```

PARAMETERS

FIL: file name in the format: [drive:] [directory] filename
Drive: drive (a, b or c) containing the disk where the file is stored in (if omitted, the current drive will be accessed)
Directory: name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
Filename: name of the file (up to 8 alphanumeric characters)

REMARKS

- If no file name is specified, file *Lucent.log* will be displayed on the CSR screen.
- The file will not be printed if the password entered differs from that used to encrypt it.
- Files encrypted without a password obviously will not require one for being read.

RV-LOG Remove CSR Command Log

This command allows removing the file containing the log of commands carried out by the CSR.

INPUT FORMAT

```
RV-LOG [: FIL = "xxx..xxx" ];
```

PARAMETERS

FIL: file name in the format: [drive:] [directory] filename
Drive: drive (a, b or c) containing the disk where the file is stored in (if omitted, the current drive will be accessed)
Directory: name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
Filename: name of the file (up to 8 alphanumeric characters)

REMARKS

- If no file name is specified in field filename, the *Lucent.log* file will be removed from the CSR directory.

MACRO Commands

IP-MACRO Query Commands Macro Programming

This command is used to display commands programmed in the macros.

INPUT FORMAT

```
IP-MACRO [ : MACRO = xx ] ;
```

PARAMETERS

MACRO: number of the macro (1..12)

OUTPUT FORMAT

If the MACRO parameter is specified, the text and commands programmed for the selected macro will be displayed, in the following format:

```
MACRO= xx  [ TXT = xxx...xxx ]
    [ CMD = xxx...xxx ]
            .
            .
    [ CMD = xxx...xxx ]
```

If the MACRO parameter is not specified, the text and commands of all programmed macros will be displayed, in the following format:

```
MACRO= xx  [ TXT = xxx...xxx ]
    [ CMD = xxx...xxx ]
            .
            .
    [ CMD = xxx...xxx ]
   .
   .
MACRO= xx  [ TXT = xxx...xxx ]
    [ CMD = xxx...xxx ]
            .
            .
    [ CMD = xxx...xxx ]
```

REMARKS

- Only pre-programmed texts and commands will be displayed; there can be macros with no programmed texts or macros with no programmed commands.

PR-MACRO Program Commands Macro

This command is used to program macros with CSR commands.

INPUT FORMAT

```
PR-MACRO:MACRO = xx{[,CMD="xx..xx"][,TXT = "xx..xx"]};
```

PARAMETERS

MACRO: number of the macro (1..12)

CMD: command (up to 255 alphanumeric characteristics between quotes or apostrophes)

TXT: text (up to 100 alphanumeric characters between quotes or apostrophes)

REMARKS

- As many commands as required can be programmed into each macro, provided they are programmed one at a time.
- New commands entered through the PR-MACRO do not overwrite the previous programmed. In order to leave only one command associated to a specific key the operator needs first to remove the macro (RP-MACRO) and then enter a new command.
- The programmed text will be displayed on the status bar when the mouse cursor points to the macro icon.
- Commands programmed in each macro will be carried out by clicking on the required tool bar button or by pressing keys F1 to F12.
- Commands will be carried out in the same order as they were programmed.
- The TXT parameter can be modified by overwriting the previous one.
- If the command to be programmed includes the quote (“) character, the CMD parameter argument should be delimited by apostrophes (‘) instead of quotes (“).

RP-MACRO Remove Command Macro Programming

This command is used to remove programmed CSR commands macros.

INPUT FORMAT

```
RP-MACRO : MACRO = xx ;
```

PARAMETERS

MACRO: number of the macro (1..12)

REMARKS

- This command removes the text and all commands programmed for the specified macro.

OPE Commands

CR-OPE Create Operator

This command is used to include and operator in the CSR operators registry.

INPUT FORMAT

```
CR-OPE : OPE = "xxxxxxxx", OCL = xx ;
```

PARAMETERS

OPE: operator ID (up to 8 alphanumeric characters in quotes)
OCL: operation class (1..16)

REMARKS

- The created operator is assigned his ID as his password
- To change an operator password, use the MD-OPEPAS command.
- The CSR operators registry is set up at the factory, with LUCENT operator, LUCENT password and operation class 1.
- The CSR operators registry can contain up to 32 operators

IT-OPE Query Operator

This command is used to list all operators registered in the CSR.

INPUT FORMAT

```
IT-OPE [ : OPE = "xxxxxxxx" ] ;
```

PARAMETERS

OPE: operator ID (up to 8 alphanumeric characters in quotes)

OUTPUT FORMAT

If the OPE parameter is specified, the selected operator operation class is displayed, in the format:

```
OPE = xxxxxxxx   OCL = xx ... xx
```

If the OPE parameter is not specified, all registered operators and respective operation classes are displayed, in the following format:

```
OPE = xxxxxxxx   OCL = xx ... xx
        .                  .
        .                  .
        .                  .
OPE = xxxxxxxx   OCL = xx ... xx
```

SU-OPE Exclude Operator

This command excludes an operator from the CSR operator registry.

INPUT FORMAT

```
SU-OPE : OPE = "xxxxxxxx" ;
```

PARAMETERS

OPE: operator ID (up to 8 alphanumeric characters in quotes)

MD-OPEPAS Change Operator Password

This command is used to change an operator password.

INPUT FORMAT

```
MD-OPEPAS : PAS = "xxxxxxxx" ;
```

PARAMETERS

PAS: operator ID (up to 8 alphanumeric characters in quotes)

REMARKS

- The operator password is case-sensitive.

PAG Commands

DSB-PAG Disable Paging

This command is used to disable paging commands executed in the CSR response window.

INPUT FORMAT

```
DSB-PAG ;
```

REMARKS

- If this command does not run, the CSR will be set for paging all command responses.

ENA-PAG Enable Paging

This command is used to enable paging commands executed in the CSR response window.

INPUT FORMAT

```
ENA-PAG ;
```

REMARKS

- The CSR is initially set for paging command responses.

RAIUDAT Commands

RE-RAIUDAT Record RAIU Subscriber Data File

This command is used to query the 5ESS for the RAIU subscriber

information to generate the corresponding data file to be transmitted to the BZ-RS.

INPUT FORMAT

```
RE-RAIUDAT: LOC = "xxxxxxxx" [ , RAIU =  xxx-xxx
[, TERM = "xxxxxxx", NOD = "xxxxxxx"]] ;
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)

RAIU: 5ESS RAIU identification in format sm-raiu#:

sm: 5ESS switch module (1..192)

raiu#: RAIU identification in each SM (0..125)

TERM: 5ESS virtual terminal that will be used for accessing the 5ESS switch when the **DRM** mode is active. (up to 8 alphanumeric characters). For information on TTY names, see 235-600-314, 5ESS Switch ECD/SG Database Manual. Only lower case names must be used.

NOD: identifies in which network node the SM module is located . It is a string with numeric value (0..15)

OUTPUT FORMAT

If the RAIU parameter is specified, it will be generated the subscriber information file of the specified RAIU.

If the RAIU parameter is not specified, it will be generated the subscriber information file of all RAIUs connected to the specified LOC. The command response is as the following:

```
RAIU = xxx-xxx    status

RAIU = xxx-xxx    status

    .

    .

RAIU = xxx-xxx    status
```

IT-RAIUDAT Query RAIU Subscriber Data Acquisition Parameters and Status

This command is used to query the RAIU subscriber data acquisition parameters (5ESS ASM IP address or 5ESS serial port configuration and user identification) or the data acquisition status.

INPUT FORMAT

```
IT-RAIUDAT [ : LOC = "xxxxxxxx" [ , RAIU = xxx-xxx
[,TERM = "xxxxxxxx", NOD = "xxxxxxx"]]] ;
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)

RAIU: 5ESS RAIU identification in format sm-raiu#:

Sm: 5ESS switch module (1..192)

raiu#: RAIU identification in each SM (0..125)

TERM: 5ESS virtual terminal that will be used for accessing the 5ESS switch when the **DRM** mode is active.

NOD: identifies in which network node the SM module is located

OUTPUT FORMAT

If the LOC parameter is specified with no RAIU parameter, it will be presented the subscriber data acquisition status of all RAIUs connected to the specified LOC, as listed below:

```
RAIU = xxx-xxx [TERM=xxxxxx  NOD=xxxxxxx]
  5ESS data acquisition begin=mm/dd/yyyy hh:mm:ss AM/PM
  5ESS data acquisition end  =mm/dd/yyyy hh:mm:ss AM/PM
  5ESS data acquisition result = status
  Data upload = mm/dd/yyyy hh:mm:ss AM/PM
  Data upload result = status

RAIU = xxx-xxx [TERM=xxxxxx  NOD=xxxxxxx]
  5ESS data acquisition begin=mm/dd/yyyy hh:mm:ss AM/PM
  5ESS data acquisition end  =mm/dd/yyyy hh:mm:ss AM/PM
  5ESS data acquisition result = status
  Data upload = mm/dd/yyyy hh:mm:ss AM/PM
  Data upload result = status

. . .
. . .
RAIU = xxx-xxx [TERM=xxxxxx  NOD=xxxxxxx]
  5ESS data acquisition begin=mm/dd/yyyy hh:mm:ss AM/PM
  5ESS data acquisition end  =mm/dd/yyyy hh:mm:ss AM/PM
  5ESS data acquisition result = status
  Data upload = mm/dd/yyyy hh:mm:ss AM/PM
  Data upload result = status
```

If the RAIU parameter is specified, it will be presented the subscriber data acquisition status of the specified RAIU that must be connected to the specified LOC.

When this command is issued with no parameters, it will be presented the RAIU subscriber data acquisition parameters in the

following format, depending to the connection type:

```
TYP = LOC|RDL|RPL   PORT = xxxx   SPD = xxxxx  STOP = x
PARIT = xxxxx   OPE = xxxxxxxx  INT|NAR
```

Or

```
TYP = TCP   PORT = xxxx   IP = xxx.xxx.xxx.xxx
OPE = xxxxxxxx  INT|NAR
```

MD-RAIUDAT Change RAIU Subscriber Data Acquisition Parameters

This command is used to modify the RAIU subscriber data acquisition parameters (5ESS ASM IP address or 5ESS serial port configuration, user and password) or the data acquisition status.

INPUT FORMAT

```
MD-RAIUDAT:{[NAR | INT] [,RCOS | DRM] [,TYP = xxxx]
[,PORT = xxxx ] [,SPD = xxxxx] [,STOP = x] [, PARIT =
xxxxx] [ ,WORD = x] [,IP = xxx.xxx.xxx.xxx]
[,OPE="xxxxxxxx"] [,PAS="xxxxxxxx" ]};
```

PARAMETERS

NAR or INT: indicates the 5ESS market, respectively North America Region or International market.

When using INT the parameter RCOS must also be specified

RCOS or DRM: indicates the way the 5ESS subscriber information is queried by the BZ-RS element manager:

RCOS (Recent Change Operations Systems): using the proxy db feature

DRM (Distinctive Remote Module): not using the proxy db feature

TYP: type of connection to the 5ESS:

LOC: local connection

TCP: TCP/IP connection

PORT: EM computer serial communication port, if TYP = LOC:

COM1: COM1 serial port

COM2: COM2 serial port

...

COM32: COM32 serial port

5ESS IP Port, if TYP = TCP

SPD: maximum serial port communication rate in bps (1200,

2400, 4800, 9600, 19200, 38400, 57600 and 115200)
STOP: number of stop bits: 1 or 2
PARIT: parity
EVE: even parity
ODD: odd parity
NPA: no parity
WORD: number of databits (7 or 8)
IP: 5ESS IP address
OPE: operator ID (up to 8 alphanumeric characters in quotes)
PAS: operator password (up to 8 alphanumeric characters in quotes)

REMARKS

- The following table provides the configurations set up by command MD-RAIUDAT:

Connection	TYP	PORT	RATE	STOP	PARITY
Local	LOC	Com1 Com2 ... Com32	19200	1	none
Remote	RDL	Com1 Com2 ... Com32	1200, 2400 ... 115200	1	none

Table 5-2 - Configurations set up by command MD-RAIUDAT

□

Commands Executable with the CSR Connected to a BZ-RS

PEMALA Commands

IP-PEMALA

Query Alarm Settings to External Alarm Output Points

This command is used for displaying the configuration set up between exchange alarms and external alarm output points.

INPUT FORMAT

```
IP-PEMALA [ : ASE = xx | EMP = xx-xx-xx] ;
```

PARAMETERS

ASE: alarm severity:

UR; urgent
SU: semi-urgent
NU: non-urgent

EMP: external alarm output point in the unit-board-circuit format:

Unit: number of the terminal unit (1..1)
Board: number of the board at the point of external alarm detection (1..2)
Circuit: number of the circuit on the board: (1..7)

OUTPUT FORMAT

If the ASE parameter is specified, the external alarm output point is displayed jointly with the selected alarm severity in the following format:

```
EMP = xx-xx-xx  ASE = xx

.       .          .

.       .          .

.       .          .

EMP = xx-xx-xx  ASE = xx
```

PR-PEMALA

Program Alarms to External Alarm Output Points

This command is used to set up a relationship between alarms generated in the exchange and the external alarm output points

INPUT FORMAT

```
PR-PEMALA : ASE = xx, EMP = xx-xx-xx ;
```

PARAMETERS

ASE: alarm severity:

UR: urgent
SU: semi-urgent
NU: non-urgent

EMP: external alarm output point in the unit-board-circuit format:

Unit: number of the terminal unit (1..1)
Board: number of the board at the point of external alarm detection (1..2)
Circuit: number of the circuit on the board: (1..7)

RP-PEMALA Remove Programming of an Alarm to an External Alarm Output Point

This command is used to remove the programming that relates exchange alarms to external alarm output points.

INPUT FORMAT

```
RP-PEMALA : EMP = xx-xxx-xx , ASE = xx ;
```

PARAMETERS

EMP: external alarm output point in the unit-board-circuit format:

Unit: number of the terminal unit (1..1)
Board: number of the board at the point of external alarm detection (1..2)
Circuit: number of the circuit on the board: (1..7)

ASE: alarm severity:

UR: urgent
SU: semi-urgent
NU: non-urgent

ALARM Commands

IT-ALARM Query Current Alarms

This command is used to display alarms occurring in exchange units. The alarms detected in the exchange are listed in its Operating Manual.

INPUT FORMAT

```
IT-ALARM [ : {   [ UNI = xx ]   [, ASE = xx ]   }] ;
```

PARAMETERS

UNI: number of the terminal unit (1..1)

ASE: alarm severity:

UR: urgent

SU: semi-urgent

NU: non-urgent

OUTPUT FORMAT

If the UNI parameter is specified, the selected unit current alarms will be displayed in the following format:

```
[ ENV = xxxx ]  UNI = xx
yy-mm-dd hh-mm-ss xxxxxxxxxx ... xxxxxxxxxx     SEMI-
URGENT
    .                       .
    .                       .
    .                       .
yy-mm-dd hh-mm-ss xxxxxxxxxx ... xxxxxxxxxx     URGENT
```

If the UNI parameter is not specified, the alarms present in all active exchange units will be displayed in the following format:

```
[ ENV = xxxx ]  UNI = xx
yy-mm-dd hh-mm-ss xxxxxxxxxx ... xxxxxxxxxx     SEMI-
URGENT
    .                     .
    .                     .
    .                     .
yy-mm-dd hh-mm-ss xxxxxxxxxx ... xxxxxxxxxx     URGENT
        .
        .
        .
[ ENV = xxxx ]  UNI = xx
yy-mm-dd hh-mm-ss xxxxxxxxxx ... xxxxxxxxxx     SEMI-
URGENT
    .                       .
    .                       .
    .                       .
yy-mm-dd hh-mm-ss xxxxxxxxxx ... xxxxxxxxxx     URGENT
```

REMARKS

- ASE Parameter permits selecting the alarms to be displayed according to their severity. The following arguments may be specified for ASE:

  UR: only display urgent alarms

  SU: display urgent and semi-urgent alarms

NU: display all alarms

- ENV Parameter will be displayed if the interconnected exchange is a Central or Peripheral Stage.

CR-EXTALARM Create External Alarm Detection Point

This command is used to set up an external alarm detection point.

INPUT FORMAT

```
CR-EXTALARM : PDT = xx-xx-xx, ASE = xx [,TME = xxxxx ];
```

PARAMETERS

PDT: external alarm detection point in unit-board-circuit format:

Unit: number of the terminal unit (1..1)
Board: number of the board at the point of external alarm detection (1..2)
Circuit: number of the circuit on the board: (1..16)

ASE: alarm severity

UR: urgent
SU: semi-urgent
NU: non-urgent

TME: time in seconds (1..86400)

REMARKS

- TME Parameter gives the time in seconds to elapse before the exchange registers the detection of an alarm at the external alarm point. If TME parameter is not specified, a time of 1 second will apply.

IP-EXTALARM Query External Alarm Message Programming

This command is used to display the messages associated to external alarm detection points in an exchange.

INPUT FORMAT

```
IP-EXTALARM [ : [ LOC = "xxxxxxxx" [, ENV = xxxx ] , ]
PDT = xx-xx-xx ] ;
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)
ENV: exchange operating environment:

CS: Central Stage environment
PS: Peripheral Stage environment (1..6)

PDT: external alarm detection point in unit-board-circuit

format:

Unit: number of the terminal unit (1..1)
Board: number of the board at the point of external alarm detection (1..2)
Circuit: number of the circuit on the board: (1..16)

OUTPUT FORMAT

If the PDT parameter is specified, the message associated to the selected external alarm detection point will be displayed in the following format:

```
PDT = xx-xx-xx ALA = "xxx...xxx"
```

If the PDT parameter is not specified, the messages associated to the selected external alarm detection points programmed in the exchange will be displayed in the following format:

```
PDT = xx-xx-xx  ALA = "xxx...xxx"
  .           .             .
  .           .             .
  .           .             .
PDT = xx-xx-xx  ALA = "xxx...xxx"
```

REMARKS

- LOC Parameter can be omitted when the CSR is connected to an exchange.
- ENV Parameter should be used for CS type exchanges, i. e., with created PSs. It is specified when displaying external alarms for an existing PS operating environment is required. It can be omitted if the required environment is connected.

IT-EXTALARM Query External Alarm Detection Point

This command is used to display the external alarm detection points set up in the exchange.

INPUT FORMAT

```
IT-EXTALARM [ : PDT = xx-xx-xx ] ;
```

PARAMETERS

PDT: external alarm detection point in unit-board-circuit format:

Unit: number of the terminal unit (1..1)
Board: number of the board at the point of external alarm detection (1..2)
Circuit: number of the circuit on the board: (1..16)

OUTPUT FORMAT

If PDT parameter is specified, the selected external alarm detection point will be displayed in the following format:

PDT = xx-xx-xx ASE = xx TME [ALA = "xxx...xxx"]

If PDT parameter is not specified, all external alarm detection points programmed in the exchange will be displayed in the following format:

```
PDT = xx-xx-xx   ASE = xx  TME [ ALA = "xxx...xxx" ]
       .               .               .
       .               .               .
       .               .               .
PDT = xx-xx-xx   ASE = xx  TME [ ALA = "xxx...xxx" ]
```

PR-EXTALARM Program External Alarm Message

This command is used to program a message associated to an external alarm detection point.

INPUT FORMAT

```
PR-EXTALARM : [ LOC = "xxxxxxxx" [, ENV = xxxx ] , ]
PDT = xx-xx-xx, ALA = "xxx...xxx";
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotes)

ENV: exchange operating environment

CS: Central Stage environment

PS: Peripheral Stage environment (1..6)

PDT: external alarm detection point in unit-board-circuit format:

Unit: number of the terminal unit (1..1)

Board: number of the board at the point of external alarm detection (1..2)

Circuit: number of the circuit on the board: (1..16)

ALA: message associated to an external alarm detection point (up to 35 alphanumeric characters in quotes).

REMARKS

- Messages, associated to the exchange external alarm detection point, are stored in the CSR, in file "ALAEXT.DAT". This file

is saved in the exchange directory (as specified by parameter PATH in the CR-EXC command).
- A specific exchange external alarm messages should be programmed in all CSR supervising this exchange.
- LOC Parameter may be omitted when the CSR is connected to an exchange.
- ENV Parameter should be used for CS type exchanges, i. e., with created PSs, specified when programming external alarms according to the operating environment of the existing PSs. It can be omitted when the connected environment is the required one.

RP-EXTALARM Remove External Alarm Message Programming

This command is used to remove the associated message programming to an external alarm detection point.

INPUT FORMAT

```
RP-EXTALARM : [ LOC = "xxxxxxxx" [, ENV = xxxx ] , ]
PDT = xx-xx-xx;
```

PARAMETERS

LOC: code of exchange installation site (up to 8 alphanumeric characters in quotation marks)

ENV: exchange operating environment

CS: Central Stage environment

PS: Peripheral Stage environment (1..6)

PDT: external alarm detection point in unit-board-circuit format:

Unit: number of the terminal unit (1..1)

Board: number of the board at the point of external alarm detection (1..2)

Circuit: number of the circuit on the board: (1..16)

REMARKS

- LOC Parameter may be omitted if the CSR is connected to the exchange.
- ENV Parameter should be used for CS type exchanges, i. e., with created PSs, specified when erasing programming external alarms according to the operating environment of the existing PSs. It can be omitted when the connected environment is the required one.

SU-EXTALARM Suppress External Alarm Detection Point

This command is used to suppress an external alarm detection point.

INPUT FORMAT

```
SU-EXTALARM : PDT = xx-xx-xx ;
```

PARAMETERS

PDT: external alarm detection point in unit-board-circuit format:

Unit: number of the terminal unit (1..1)

Board: number of the board at the point of external alarm detection (1..2)

Circuit: number of the circuit on the board: (1..16)

SUB Commands

CR-SUB Create Subscriber

This command is used to create a subscriber.

INPUT FORMAT

```
CR-SUB : SUB  = [xxxx-]xxxx&..&xxxx, RMT = xx-xxxx ,
CLA = xxx [, SNL = xxx ];
```

PARAMETERS

SUB: subscriber directory number, in the prefix-subscriber format

Prefix: exchange prefix (1 to 4 digits)

Subscriber: THTU digits (0000..9999)

CLA: terminal class (1..32)

SNL: telephone set dialing signaling

DEC: decadic

MF: multifrequency

RMT: remote terminal number in the ps-pos format

ps: number of Peripheral Stage (1..6)

pos: subscriber position at R/EAIU

REMARKS

- A subscriber is created in the blocked operating status (BLK) and should be unblocked via command MD-SUBSTE.
- A list of subscribers can be prepared in the configuring mode. In this case, the subscribers will be created in service conditions.
- If parameter SNL is not specified, the telephone set will be considered as using decadic dialing.
- Refer to the remarks on the CR-CLA command (Create Terminal Class).
- If the subscriber prefix is not specified, the subscriber will be

considered as having prefix 1 in the table of prefixes.

- A list of subscribers with the same class, signaling and prefix data can be prepared, the associated terminal matching the boards created in the exchange, sequentially ordered by circuit, board and unit.
- Annex B shows the correspondence of subscriber numbers between the E/RAIU and the BZ-RS (E/RAIU OE numbers to BZ-RS RMT numbers).

IT-SUB Query Subscriber

This command is used to display subscriber data.

INPUT FORMAT

```
IT-SUB [: (SUB = [xxxx-]xxxx&..&xxxx | STE = xxx   |
CLA = xxx | SNL = xxx | EXCPRE = x | TYP = xxx |
RMT = xx-xxxx } ] ;
```

PARAMETERS

SUB: subscriber directory number, in the prefix-subscriber format

Prefix: exchange prefix (3 or 4 digits)
Subscriber: THTU digits (0000..9999)

STE: subscriber operating status
NCR: not created
BLK:fully blocked
BLO: blocked for originating
SRV: in service
BSY: in service busy

CLA: terminal class (1..32),

SNL: telephone set dialing signaling
DEC: decadic
MF: multifrequency (DTMF)

EXCPRE: index of the prefix in the exchange table of prefixes (1..50)

TYP: type of exchange the subscriber is assigned to
LOC: local
PS: peripheral stage

RMT: remote terminal number in the ps-pos format

OUTPUT FORMAT

If the SUB parameter is specified, the operating status and terminal class of each selected subscriber will be displayed in the following

format:

```
SUB = xxxx-xxxx  RMT=xx-xxxx SNL = xxx [NCAA = xx ] [
TON = xxx ] STE = xxx  PMO = xx [ RPF = xxx ]
RSSS = xxxxxx
CLA = xxx (xxxxxxxx)
OCT = xx   TCT = xx   SVP = xxxxxx
RTT = { NRESTR | TOREST | xx&..&xx }[ MAXCOIN = xxxxx ]
[KEY = xx] [ SSV = xxxxxxx&..&xxxxxxx ]
      .           .           .           .           .
      .           .           .           .           .
SUB = xxxx-xxxx    RMT=xx-xxxx SNL = xxx [ NCAA = xx ]
[ TON = xxx ] STE = xxx  PMO = xx[ RPF = xxx ]
RSSS = xxxxxx
CLA = xxx (xxxxxxxx)
OCT = xx   TCT = xx   SVP = xxxxxx
RTT = { NRESTR | TOREST | xx&..&xx }[ MAXCOIN = xxxxx ]
[KEY = xx] [ SSV = xxxxxxx&..&xxxxxxx ]
```

If the STE parameter is specified, subscribers in the selected state will be specified in the following format:

```
STE=xxx  SUB= xxxx-xxxx  xxxx-xxxx xxxx-xxxx xxxx-xxxx
                  .     .     .     .     .
                  .     .     .     .     .
                  .     .     .     .     .
               xxxx-xxxx xxxx-xxxx xxxx-xxxx xxxx-xxxx
```

If the CLA parameter is specified, subscribers with terminals with the selected class will be displayed in the following format:

```
CLA = xxx  SUB= xxxx-xxxx xxxx-xxxx xxxx-xxxx xxxx-xxxx
                  .     .     .     .     .
                  .     .     .     .     .
                  .     .     .     .     .
                xxxx-xxxx xxxx-xxxx xxxx-xxxx xxxx-xxxx
```

If the EXCPRE parameter is specified, subscribers with terminals with the selected exchange prefix will be displayed in the following format:

```
SUB = xxxx-xxxx RMT=xx-xxxx SNL = xxx [NCAA = xx] [ TON
= xxx ] STE = xxx   PMO = xx RPF = xxx
RSSS = xxxxxx
CLA = xxx (xxxxxxxx)
OCT = xx   TCT = xx   SVP = xxxxxx
RTT = { NRESTR | TOREST | xx&..&xx } [ MAXCOIN = xxxxx]
[KEY = xx] [ SSV = xxxxxxx&..&xxxxxxx ]
```

If the SNL parameter is specified, subscribers with telephone sets using the selected type of dialing signaling will be displayed in the following format:

```
SNL= xxx   SUB= xxxx-xxxx xxxx-xxxx xxxx-xxxx xxxx-xxxx
                  .     .     .     .     .
                  .     .     .     .     .
                  .     .     .     .     .
                xxxx-xxxx xxxx-xxxx xxxx-xxxx xxxx-xxxx
```

If no parameter is specified, all exchange subscriber data will be displayed in the following format:

```
SUB = xxxx-xxxx RMT=xx-xxxx SNL = xxx[ NCAA = xx ] [
```

```
TON = xxx ] STE = xxx   PMO = xx[ RPF = xxx ]
                  RSSS = xxxxxx
                  CLA = xxx (xxxxxxxx)
                  OCT = xx   TCT = xx   SVP = xxxxxx
                  RTT = { NRESTR | TOREST | xx&..&xx }
                  [ MAXCOIN = xxxxx ] [KEY = xx]
                  [ SSV = xxxxxxx&..&xxxxxxx ]
                        .
                        .
                        .
SUB = xxxx-xxxx   RMT=xx-xxxx SNL = xxx[NCAA = xx] [
TON = xxx ] STE = xxx   PMO = xx [ RPF = xxx ]
                  RSSS = xxxxxx
                  CLA = xxx (xxxxxxxx)
                  OCT = xx   TCT = xx   SVP = xxxxxx
                  RTT = { NRESTR | TOREST | xx&..&xx }
                  [ MAXCOIN = xxxxx ] [KEY = xx]
                  [ SSV = xxxxxxx&..&xxxxxxx ]
```

REMARKS

- If PRI signaling is used, the NCAA parameter will be displayed in the output format
- TON Parameter will be displayed if it is prior programmed via command MD-SUB.
- RPF Parameter will only be displayed when equal to ATV, i. e., active remote power supply.
- Parameter will be displayed if the subscriber is interconnected to the access node (AN).
- KEY Parameter will only be displayed when the subscriber belongs to a PABX group.
- The STE = SRV OSC, indicate subscriber in service and in use
- Annex B shows the correspondence of subscriber numbers between the E/RAIU and the BZ-RS (E/RAIU OE numbers to BZ-RS RMT numbers).
- The STE = SRV NBD indicate subscriber in service and BOARD not equiped.

MD-SUB Modify Subscriber

This command is used to change the class of a terminal and the dialing signaling of a subscriber telephone set. In ISDN access, it is also used to change restrictions on the requested support service and the assignment of tones generated by the terminal or exchange.

INPUT FORMAT

```
MD-SUB : SUB = [xxxx-]xxxx {[, CLA  = xxx  ] [, SNL =
xxx ] [, NCAA = xx ] [, TON = xxx ] [,RSSS = xxxx ]
[,RPF = xxx ] [, PMO = xx]};
```

PARAMETERS

SUB: subscriber directory number, in the prefix-subscriber format

Prefix: exchange prefix (3 or 4 digits)

Subscriber: THTU digits (0000..9999)
CLA: terminal class (1..32),
SNL: telephone set dialing signaling
DEC: decadic
MF: multifrequency (DTMF)
NCAA: number of B channels available to the user (1..4)
TON: origin of tone generation for ISDN terminals
EXC: tones generated by the exchange
TER: tones generated by the terminal
RSSS: requested support service restriction
U64K: 64 kbps unrestricted
V64K: 64 kbps voice
A64K: 64 kbps audio 3.1 kHz
RPF: remote power supply for the ISDN terminal
ITV: inactive
ATV: active
PMO: Origin marking point (1..40). Define subscribers groups in the same billing area

REMARKS

- Terminal classes VCL, CHN, and NDF can only be specified for subscribers in uncreated operating status (NCR).
- At least one of the optional parameters should be specified. Only specified parameters will be altered.
- Parameters TON and RSSS only apply to ISDN terminals.
- If the TON parameter is not specified, the tone will be considerate generated by the exchange.
- NCAA Parameter is only valid for primary ISDN access.
- RPF Parameter is only valid for subscribers with basic ISDN access.
- If the RPF parameter is not specified, basic ISDN access terminals will be considered remotely powered.
- To eliminate the restriction programmed for the requested support service, specify RSSS = WRSSS.
- Annex B shows the correspondence of subscriber numbers between the E/RAIU and the BZ-RS (E/RAIU OE numbers to BZ-RS RMT numbers).

SU-SUB Suppress Subscriber

This command is used to suppress a subscriber.

INPUT FORMAT

```
SU-SUB : SUB = [xxxx-]xxxx&..&xxxx ;
```

PARAMETERS

SUB: subscriber directory number, in the prefix-subscriber format

Prefix: exchange prefix (3 or 4 digits)
Subscriber: THTU digits (0000..9999)

REMARKS

- A subscriber may only be suppressed when in BLK status (fully blocked)
- A suppressed subscriber assumes NRC (uncreated) operating status and terminal class VCL (vacant level).
- Annex B shows the correspondence of subscriber numbers between the E/RAIU and the BZ-RS (E/RAIU OE numbers to BZ-RS RMT numbers).

MD-SUBSTE Modify Subscriber Operating Status

This command is used to change subscribers' operating status.

INPUT FORMAT

```
MD-SUBSTE : {SUB = [xxxx-]xxxx&..&xxxx , STE = xxx [,
IMME ] ;
```

PARAMETERS

SUB: subscriber directory number, in the prefix-subscriber format

Prefix: exchange prefix (3 or 4 digits)
Subscriber: THTU digits (0000..9999)

STE: subscriber operating status

BLK: fully blocked
BLO: blocked for originating
SRV: in service

IMME: immediate blocking option

REMARKS

- Blocking a subscriber for originating calls (BLO) is only valid if the subscriber has SRV (in service) operating status.
- Fully blocking a subscriber (BLK) is only valid if the subscriber has SRV (in service) and BLO (blocked for originating) status.
- Unblocking a subscriber or setting him to operating status SRV (in service) will only be possible for subscribers in the BLK (fully blocked) and BLO (blocked for originating) status.
- If the IMME parameter is specified, the exchange blocks the subscriber immediately, breaking the current call. If the IMME parameter is not specified, the exchange waits for the current

call to end and blocks the subscriber in idle state only. In this case, the exchange sends messages confirming the CSR blocking at the moment it comes into effect.

- Command MD-SUBSTE does not extend to blocking or unblocking an entire PABX group by the key subscriber. Each PABX group subscriber must be individually blocked and unblocked.
- Annex B shows the correspondence of subscriber numbers between the E/RAIU and the BZ-RS (E/RAIU OE numbers to BZ-RS RMT numbers).

AUTEST Commands

AT-AUTEST Activate Auto-test

This command is used to activate the programmed tests.

INPUT FORMAT

```
AT-AUTEST :  TYP = xxxx  [ , UNI  = xx ] [ , FLASH ] [
, EPE ];
```

PARAMETERS

TYP: type of auto-test to be run
- **FAB**: factory test
- **DIAG**: diagnosis test

UNI: number of the terminal unit (1..1)
FLASH: flash memory test
EPE: emergency E1 test

REMARKS

- When the TYP parameter is specified as DIAG, the FLASH parameter can NOT be used.
- The parameter TYP=FAB must only be used during the factory test. If the service provider craftsperson uses this parameter without the factory setup the diagnostic will fail and generate an alarm in the BZRS.
- The FLASH memory test takes around 30 minutes to be executed and decreases the shelf-life of the flash memory, thus it should not be used frequently.
- When the TYP parameter is specified as FAB, the EPE parameter can NOT be used.
- The diagnostic test is executed in background, thus the operator is allowed to keep working in the system.
- If any of the functional block tested during the diagnostic fails, the system will generate an urgent alarm, otherwise no indication will be sent to the operator.

IP-AUTEST Query Auto-test Programming

This command is used to query the programmed tests.

INPUT FORMAT

```
IP-AUTEST ;
```

OUTPUT FORMAT

The programmed auto-tests will be displayed in the following format:

```
HOU = xx-xx  TSP = x
.      .      .      .
.      .      .      .
HOU = xx-xx  TSP = x
```

IT-AUTEST Query Auto-test

This command is used to display the tests results.

INPUT FORMAT

```
IT-AUTEST [ : UNI = xx ];
```

PARAMETERS

UNI: number of the terminal unit (1..1)

OUTPUT FORMAT

If UNI parameter is specified, the selected unit information will be displayed in the following format:

```
BOARD = xx-xx
DAT = yy-mm-dd   HOU = hh:mm:ss   DAY = xxxxx
CPU
status
Access and Identification                    status
DSP Processor
status
DSP RAM memory
status
DSP Flash memory                             status
DSP Links
status
MODEM
status
Serial interface                               status
Serial Interface (with external cable)     status
Switch Matrix
status
Switch Matrix (with external cable)        status
H110 Interface
status
Emergency PCM Link
status
```

```
Ethernet
status
Ethernet (with external cable)                status
Scan Point
status
Relay
status

      .           .
      .           .
      .           .
BOARD = xx-xx
DAT = yy-mm-dd   HOU = hh:mm:ss   DAY = xxxxx
CPU                                          status
Access and Identification                        status
DSP Processor
status
DSP RAM memory
status
DSP Flash memory                                 status
DSP Links
status
MODEM
status
Serial interface
status
Serial Interface (with external cable)    status
Switch Matrix
status
Switch Matrix (with external cable)       status
H110 Interface
status
Emergency PCM Link
status
Ethernet
status
Ethernet (with external cable)                status
Scan Point
status
Relay
status
```

If UNI parameter is not specified, the information of all units will be displayed in the format described above.

The DAY information listed above is the day of the week, where:

SUN - Sunday

MON - Monday

TUE - Tuesday

WED - Wednesday

THU - Thursday

FRI - Friday

SAT - Saturday

The status information can be:

OK - indicates that everything is working

Not OK - indicates failure

Not tested - indicates that the test was not executed.

Note: The IT-AUTEST command presents always the last test result. If it is issued during a diagnostic test execution the system will wait until the test is finished to present the result to the operator, thus it may hold the prompt up to 30 minutes, when the parameter FLASH is used.

PR-AUTEST Program Auto-test

This command is used to program an auto-test.

INPUT FORMAT

```
PR-AUTEST : HOU = xx [-xx]  [ , TSP = x ] ;
```

PARAMETERS

HOU: time in the hh [-mm] format

Hh: hour (00..23)

mm: minute (00..59)

TSP: periodicity in days (1..7)

RP-AUTEST Remove Auto-test Programming

This command is used to remove the auto-test programming.

INPUT FORMAT

```
RP-AUTEST;
```

CAL Commands

IT-CAL Query Clock-Calendar

This command is used to consult the date and time of the exchange clock-calendar

INPUT FORMAT

```
IT-CAL [ : UNI = xx ] ;
```

PARAMETERS

UNI: unit number (1..1)

OUTPUT FORMAT

If the UNI parameter is not specified, the date and time of the exchange master unit calendar will be displayed in the following format:

```
DAT = xx-xx-xx  HOU = xx:xx:xx  DAY = xxx
```

If the UNI parameter is specified, the selected unit calendar date and time will be displayed.

MD-CAL Modify Clock-Calendar

This command is used to change the date and time of the exchange clock-calendar.

INPUT FORMAT

```
MD-CAL[:DAT = xx-xx-xx, HOU=xx [-xx [-xx] ],DAY= xxx ];
```

PARAMETERS

DAT: date in the yy-mm-dd format:
- **yy**: year (00..99)
- **mm**: month (01..12)
- **dd**: day (01..31)

HOU: time in the ho[-mi[-se]] format:
- **ho**: hour (00..23)
- **mi** : minute (00..59) (optional)
- **se**: second (00..59) (optional)

DAY: week day:
- **SUN**: Sunday
- **MON**: Monday
- **TUE**: Tuesday
- **WED**: Wednesday
- **THU**: Thursday
- **FRI**: Friday
- **SAT**: Saturday

REMARKS

- Omitting minutes and seconds corresponds to specifying 00.
- If no parameter is specified, the exchange clock-calendar will be set to the CSR clock-calendar.

TRKINT Commands

IT-TRKINT Query trunk interface

This command is used to consult the trunk interfaces parameters.

INPUT FORMAT

```
IT-TRKINT [ : BOARD = xx-xx [,TRKINT = xx]] ;
```

PARAMETERS

TRKINT: trunk interface number (1..16)

BOARD: board number in the unit-pos format

Unit: unit number (1..1)
Pos: unit position number (1..2)

OUTPUT FORMAT

If the BOARD and TRKINT parameters are specified, the selected trunk interface will be displayed in the following format:

```
BOARD = xx-xx TRKINT = xx TYP = xxx FRM = xxx CAS=xxx
STE = xxx
```

If no parameter is specified, all trunk interfaces will be displayed in the following format:

```
BOARD = xx-xx TRKINT = xx TYP = xxx FRM = xxx CAS=xxx
STE = xxx
BOARD = xx-xx TRKINT = xx TYP = xxx FRM = xxx CAS=xxx
STE = xxx
                              . .
BOARD = xx-xx TRKINT = xx TYP = xxx FRM = xxx CAS=xxx
STE = xxx
```

REMARKS

- If only specified parameter BOARD, the first trunk will be showed.
- The parameter STE reports the trunk status presenting the following values:

BLK	operator blocking
BLE	blocked by an external signal
SRV	in service
FAI	in failure
OSC	occupied
NBD	without pack
LID	Link identification in progress
DBLP	unblocking in progress

MD-TRKINT Modify trunk interface

This command is used to change the trunk interfaces parameters.

INPUT FORMAT

```
MD-TRKINT:BOARD = xx-xx [ ,TRKINT = xx] {[ ,STE = xxx |
,TYP = xxx | ,FRM = xxx | ,CAS=xxx ]} [ ,IMED];
```

PARAMETERS

BOARD: board number in the unit-pos format:

Unit: unit number (1..1)

Pos: unit position number (1..2)

TRKINT: trunk interface number (1..16)

STE: state of the trunk interface:

SRV: in service

BLK: bloked

TYP: type of frame:
T1: T1 frame
E1: E1 frame
FRM: frame format:
SF: super frame
ESF: extended super frame
CRC4: with CRC4.
NCRC4: without CRC4.
IMED: Blok the trunk interface immediately

CAS: The parameter CAS reports the bit status of the signaling channel 16
NOR: Bits in standard format
INV: Bits in inverted format

REMARKS

- Omitting TRKINT parameter corresponds to specifying 1.
- If the IMED parameter is specified, the STE parameter must be defined as BLK.
- If the TYP parameter is defined as E1, the FRM parameter must be defined as CRC4 or NCRC4 (default is CRC4).
- If the TYP parameter is defined as T1, the FRM parameter must be defined as SF or ESF (default is ESF).

EXC Commands

IT-EXCCOM

Query Exchange Serial Communication Ports

This command is used to query serial communication ports configured in the exchange.

INPUT FORMAT

```
IT-EXCCOM [ : UNI = xx ] ;
```

PARAMETERS

UNI: number of the terminal unit (1..1)

OUTPUT FORMAT

If parameter UNI is specified, all programmed serial communication ports programmed in the selected unit are displayed in the following format:

```
PORT = xx-xxxx   TYP = xxx    SPD = xxxxx    WORD = x
STOP = x    PARIT = xxx     MTACK = x   MWTA =  xx
MNTO = xx
```

If parameter UNI is not specified all programmed serial communication ports programmed in the units created in the exchange are displayed in the following format:

```
PORT = xx-xxxx    TYP = xxx    SPD = xxxxx    WORD = x
STOP = x    PARIT = xxx    MTACK = x     MWTA = xx
MNTO =  xx
.
.
.
PORT = xx-xxxx    TYP = xxx    SPD = xxxxx    WORD = x
STOP = x    PARIT = xxx    MTACK = x    MWTA = xx
MNTO =  xx
```

REMARKS

- Only the first serial communication port of the maintenance unit, i. e., COM1 of unit 1, has a manufacturer configuration: type of local connection, 19200 bps maximum rate, 8 data bits, no parity and 1 stop bit.

MD-EXCCOM Modify Exchange Serial Communication Ports

This command is used to modify the exchange configuration of serial communication ports and connection timing.

INPUT FORMAT

```
MD-EXCCOM : PORT = xx-xxxx, TYP = xxxx , SPD = xxxxx
[, WORD = x, STOP = x, PARIT = xxxxxx ]
[, CMD = "xxx..xxx" ]
[, MTACK = xxx ] [, MWTA = xxx ] [, MNTO = xxx ];
```

PARAMETERS

PORT: exchange unit serial communication port in the unit-port format

Unit: number of unit (1..1)

Port: serial communication port

COM1: COM1 serial port

COM2: COM2 serial port

COM3: COM3 serial port

TYP: type of exchange serial communication port connection

LOC: local connection

RDL: remote connection over dialed line

RPL: remote connection private line

NTYP: deletes serial communication port programming

SPD: maximum serial communication rate in bps (1200, 2400,

4800, 9600, 19200 , 38400, 57600 e 115200)
WORD: data word bits(7 or 8)
MTACK: maximum timing for waiting message acknowledgement (1..250)
MWTA: maximum timing before sending a new or acknowledgement message (1..250)
MNTO: number of MWTA timings that defines the maximum time elapsed without input messages before breaking the connection
STOP: number of stop bits (1 or 2)
PARIT: parity
EVE: even parity
ODD: odd parity
NPA: no parity
CMD: List of Hayes commands for configuring the exchange modem.

REMARKS

- Only the first serial communication port of the maintenance unit, i. e., COM1 of unit 1, is factory set to: type of connection: local, 19200 bps maximum rate, 8 data bits, no parity and 1 stop bit
- In the case of remote connections, the rate specified in this command sets the used modem maximum serial communication rate and not the inter-modem communication rate. Accordingly, we recommend setting the used modem rate at the maximum value possible.
- To erase an exchange serial communication port programming, specify TYP = NTYP. In this case, do not specify the communication rate.
- Any changes to the modem initialization setup by parameter CMD should be made by an operator specialized in modems.
- Timing parameters should not be separately programmed, i. e., if one timing is programmed, the rest must be programmed in the same command.
- If the CMD parameter is not specified, the modem will use the following initializations, according to the type of connection:
  Remote connection via private line:
  `ATV0E0H0M0X4B0&C1S0=2S7=252A`
  remote connection via dialed line:
  `ATV0E0H0M1X4B0&C1S0=2S7=60`
- If the communication port is programmed for connecting to an PS or CS, the initialization Hayes command will be:
  `ATV0E0H0M0X0B0&C1S0=2S7=252D.`
- Parameters MTAC, MWTA and MNTO are used to counterbalance the connection effects with a double satellite

hop. If MTAC, MWTA and MNTO parameters were defined, the following defaults will be assigned to these parameters:

	Type of Connection	
Parameter	Local or Remote Connection above 9600 Bps	Remote Connection below 9600 bps
MTACK	4	15
MWTA	12	92
MNTO	48	6

Table 5-3 - Default assignments to the parameters

- The measuring units of parameters MTACK and MWTA is 50 ms.
- The following communication words are valid:

WORD	STOP BITS	PARITY
7	2	EVEN
7	2	ODD
7	1	EVEN
7	1	ODD
8	2	EVEN
8	1	NONE
8	1	EVEN
8	1	ODD

Table 5-4 - Valid Communication Words

MD-EXCLOC Modify Exchange Site Code

This command is used to modify the site code stored in the exchange.

INPUT FORMAT

```
MD-EXCLOC : LOC = "xxxxxxxx" ;
```

PARAMETERS

LOC: the site code of the exchange deployment (8 alphanumeric characters in apostrophes)

IT-EXCOPP Query Exchange Operating Parameters

This command is used to display the exchange operating parameters.

INPUT FORMAT

```
IT-EXCOPP ;
```

OUTPUT FORMAT

Exchange operating parameters are displayed in the following format:

```
OPP = xxxxxx&..&xxxxxx
```

REMARKS

- The following operating parameters can be defined for the BZ-RS exchange:

  ESA HC HCIV = 31: Enable survivability feature to the exchange

  NCINTRA: Disable internal calls

  ESA NOAC HC HCIV = 31: Enable survivability feature for ten digits to the exchange

MD-EXCOPP Modify Exchange Operating Parameters

This command is used to change exchange operating parameters.

INPUT FORMAT

```
MD-EXCOPP : OPP = xxxxxx&..&xxxxxx;
```

PARAMETERS

OPP: BZ-RS Exchange operating parameters:

ESA: Enable survivablility feature to the exchange

ESA NOAC: Enable survivablility feature for ten digits to the exchange

NCINTRA: Disable internal calls

REMARKS

- To erase programmed exchange operating parameter, specify OPP = NOPP.
- Command available only in configuration mode.

CR-EXCPRE Create Exchange Prefix

This command is used to create the exchange prefix.

INPUT FORMAT

```
CR-EXCPRE : PRE = xxxx-xxxx [, EXCPRE = x ] ;
```

PARAMETERS

PRE: national code used for the exchange prefix in the cod-pre format

cod: exchange national code (3 or 4 digits, optionally preceded by digit 0)

pre: exchange prefix (1 to 4 digits)

EXCPRE: index of the prefix in the exchange prefix table (1..50)

REMARKS

- Up to six prefixes may be programmed per exchange.
- If parameter EXCPRE is not specified, the default is EXCPRE=1.

IT-EXCPRE Query Exchange Prefix

This command is used to display all prefixes created in the exchange.

INPUT FORMAT

```
IT-EXCPRE ;
```

OUTPUT FORMAT

The national code and all prefixes created in the exchange are displayed as follows:

```
EXCPRE = 1   PRE = xxxx-xxxx
EXCPRE = 2   PRE = xxxx-xxxx
.      .     .     .     .
.      .     .     .     .
EXCPRE = 50 PRE = xxxx-xxxx
```

MD-EXCPRE Modify Exchange Prefix

This command is used to change the exchange prefix.

INPUT FORMAT

```
MD-EXCPRE : PRE = xxxx-xxxx [, EXCPRE = x ] ;
```

PARAMETERS

PRE: national code used for the exchange prefix in the cod-pre format

cod: exchange national code (3 or 4 digits, optionally preceded by digit 0)
pre: exchange prefix (1 to 4 digits)

EXCPRE: index of the prefix in the exchange prefix table (1..50)

REMARKS

- If the EXCPRE parameter is not specified, the default will be EXCPRE=1.

SU-EXCPRE Suppress Exchange Prefix

This command is used to suppress a prefix created in the exchange.

INPUT FORMAT

```
SU-EXCPRE [ : EXCPRE = x ] ;
```

PARAMETERS

EXCPRE: index of the prefix in the exchange prefix table (1..50)

REMARKS

- If parameter EXCPRE is not specified all created prefixes will be suppressed.

MD-EXCPAS Modify Exchange Access Password

This command is used to change the access password stored in the exchange.

INPUT FORMAT

```
MD-EXCPAS : PAS = "xxxxxxxx" ;
```

PARAMETERS

PAS: exchange access password (8 alphanumeric characters in apostrophes).

REMARKS

- The access password stored in the exchange is matched to the access password recorded in the CSR when setting up communication with the exchange.
- The MD-EXCPAS Command merely changes the access password stored in the exchange. The password recorded in each exchange supervising CSR should be changed next, for setting up communications between the supervision equipment and the exchange.

IT-EXCTME Query Exchange Timing

This command is used to query the timing values used in the exchange operation, which can be programmed via Man-Machine Communication (MMC).

INPUT FORMAT

```
IT- EXCTME;
```

OUTPUT FORMAT

The timing values used in the exchange operationare displayed in the following format:

```
TEBL=xxx   TIAC=xxx
TTNA=xxx   TWDTS=xxx  TSERA=xxx  WDCN=xxx    INTP=xxx
WRAS=xxx   DTCT=xxx   DTBT=xxx   TDTI=xxx    TRATD=xxx
CACK=xxx   WDHL=xxx   TELD=xxx   MDMF=xxx    WNMF=xxx
TEMFE=xxx  TEMFS=xxx  TEDL=xxx   TFSH=xxx    TATD=xxx
V5TMP1=xxx V5TMP2=xxx V5TMP3=xxx V5TMP4=xxx  V5TMP5=xxx
V5TMP6=xxx V5TMP7=xxx V5TMP8=xxx V5TMP9=xxx  5TMP10=xxx
ISUP1=xxx  ISUP2=xxx  ISUP3=xxx  ISUP4=xxx   ISUP5=xxx
ISUP6=xxx  ISUP7=xxx  ISUP8=xxx  ISUP9=xxx   ISUP10=xxx
ISUP11=xxx ISUP12=xxx ISUP13=xxx ISUP14=xxx  ISUP15=xxx
ISUP16=xxx ISUP17=xxx ISUP18=xxx ISUP19=xxx  ISUP20=xxx
ISUP21=xxx ISUP22=xxx ISUP23=xxx ISUP24=xxx  ISUP25=xxx
ISUP26=xxx ISUP27=xxx ISUP28=xxx ISUP29=xxx  ISUP30=xxx
ISUP31=xxx ISUP32=xxx ISUP33=xxx ISUP34=xxx  ISUP35=xxx
ISUP36=xxx ISUP37=xxx ISUP38=xxx ISUP39=xxx  TSP1=xxx
TSP2=xxx   TSP3=xxx   TSP4=xxx   TSP5=xxx    TSP6=xxx
TSP7=xxx   TSP8=xxx   TSP9=xxx   TSP10=xxx   TSP11=xxx
TSP12=xxx  TSP13=xxx  TSP14=xxx  TSP15=xxx   TSP16=xxx
TSP17=xxx  TSP18=xxx  TSP19=xxx  TSP20=xxx   TP5S=xxx
TA5S=xxx   TDTOA=xxx  TDTOI=xxx  TDTCE=xxx   STEATD=xxx
```

REMARKS

- Not of all timers presented above are applicable to the BZRS product. The applicable and configurable timers are detailed in the command MD-EXCTME.

MD-EXCTME Modify Exchange Timing

This command is used to change the value of timing factors used in operating the exchange, which can be programmed by the Man-Machine Communication (MMC).

INPUT FORMAT

```
MD-EXCTME:
TEBL=xxx   TIAC=xxx   WDCN=xxx   INTP=xxx    WRAS=xxx
DTCT=xxx   DTBT=xxx   TDTI=xxx   TRATD=xxx   CACK=xxx
TEMFS=xxx  TEDL=xxx   TFSH=xxx   TATD=xxx    TSP3=xxx
TSP6=xxx   |[INI]};

PARAMETERS
```

TEBL: Timing for detecting external trunk blocking, in seconds (1..300)

TIAC: Timing for the interval between alarm calls, in minutes (1..60)

WDCN: Timing for first digit before busy tone signal, in seconds (5..90)
INTP: Timing interdigital for reception of dialed numbers, in seconds (5..90)
WRAS: Timing for waiting answer signal, in seconds (5..180)
DTCT: Timing for congestion tone duration, in seconds (5..180)
DTBT: Timing for busy tone signal duration, in seconds (5..180)
TDTI: Timing for unaccessible number, in seconds (5..180)
TRATD: Timing for reattending in case of hanging up by subscriber B, in seconds (5..180)
CACK: Timing for reception of disconnection signal, in seconds (5..180)
TEMFS: Timing for waiting free output MF circuit, in seconds (5..90)
TEDL: Timing for waiting for free DTMF receptor, in seconds (1..90)
TFSH: Timing maximum of flash, in milliseconds (140..2000).
TATD: Timing for waiting for attending. It controls the time subscriber B will receive ring signal, in seconds (5..180)
TSP3: Timing to generate the alarm "RAIU subscribers database out of date", in hours (1..300)
TSP6: Indicates if emergency call will hold ESA mode.
INI: Put the timing parameters in their default values

REMARKS

- At least one of the optional parameters should be specified. Only specified parameters will be altered.

- The initial timing values are:

```
TEBL   = 6   TIAC   = 1   WDCN   = 10  INTP    = 15
WRAS   = 0   DTCT   = 60  DTBT   = 60  TDTI    = 60
TRATD  = 90  CACK   = 90  TEMFS  = 60  TEDL    = 15
TFSH   = 700 TATD   = 60  TSP3   = 72  TSP6    = 0
```

- If parameter TSP6 = 1, emergency calls will hold ESA mode, if TSP6 = 0, emergency calls won´t hold ESA mode.

IT-EXCHST Query Exchange Operating Log

This command is used to display alarms and events recorded in the exchange Operating Log

INPUT FORMAT

```
IT-EXCHST [ : { [ DAT = xx-xx-xx ] [, ASE = xx ] } ] ;
```

PARAMETERS

DAT: date in format yy-mm-dd:
yy: year (00..99)
mm: month (01..12)
dd: day (01..31)
ASE: alarm severity:
UR: urgent
SU: semi-urgent
NU: non-urgent

OUTPUT FORMAT

Alarms and events recorded in the exchange are displayed in the following format:

```
DAT = xx-xx-xx   HOU = xx:xx:xx  [ ENV = xxxx ]
UNI = xx   OCCURRENCE  xxx...xxx
             .            .            .            .
             .            .            .            .
             .            .            .            .
DAT = xx-xx-xx   HOU = xx:xx:xx  [ ENV = xxxx ]
UNI = xx   URGENT  xxx...xxx
```

REMARKS

- If the DAT parameter is specified, only alarms and events detected from the selected date onwards will be displayed.
- The ASE parameter enables selecting the alarms to be displayed, according to their severity. The following arguments may be specified for the ASE parameter:

  UR - only displays urgent alarms
  SU - displays urgent and semi-urgent alarms
  NU - displays all alarms

- Alarms and events detected by the exchange are listed in the Operating Manual of the exchange.
- The exchange Operating Log storage capacity is of up to 200 alarm and event records per exchange unit.
- Parameter ENV will be displayed when the connected exchange is a Central Stage or Peripheral Stage (PS)

RV-EXCHST Remove Exchange Operating Log

This command is used to remove recorded events and alarms from the exchange Operating Log.

INPUT FORMAT

```
RV-EXCHST ;
```

REMARKS

- The removal of alarms and events from the exchange Operating Log results in the "Initializing Operating Log" event.

CLA Commands

CR-CLA Create Terminal Class

This command is used to create a terminal class.

INPUT FORMAT

```
CR-CLA: CLA=xx, NAM="xxxxxxxx", OCT=xx, TCT=xx,
            RTT={ NRESTR | TOREST | xx&..&xx },
SVP=xxxxxxx
            [,ROU1=xxxxx [,ROU2=xxxxx ] ]
[,RTO=xx&..&xx ]
            [, TLIB=xxx ] [, MAXCOIN=xxxxx ]
```

PARAMETERS

CLA: terminal class (1..32)

NAM: designation of terminal class (up to 8 alphanumeric characters, in apostrophes)

OCT: originating category (1..15), i. e., signal to be sent in exchanging MFC signaling in outgoing calls, when the calling terminal category is requested

TCT: terminating category (1..15), i. e., end of selection signal to be sent in exchanging MFC signaling in incoming calls for the terminal

RTT: termination restriction

NRESTR: unrestricted a

TOREST: fully restricted

or list of values (1..14 & CDC & LINTST), where (1..14) indicate the originating category of terminals that cannot call terminals of that class, CDC indicates block for incoming CDC calls and LINTST indicates restricted for line testing.

SVP: service parameter

PAYPSP: Switching semi-public telephone

DINVPOL: Generating double polarity reversal

ROUSSS: Forwarding according to the requested support service

FREQ: Frequency generation of 12 or 16 kHz for TP billing.

INVPOL: Polarity reversal generation

PRPAGO: Permits the subscriber terminal to use the pre-paid service

SERA: Permits subscriber remote billing data access

NORSRV: Normal service

RTO: list of values of originated restriction

```
{TOREST | NRESTR | INTRA, LOC, REG, DDD, IDD,
CDC, LSS, ISS, SPE1, SPE2, SPE3, SPE4, SPE5,
SPE6, SPE7, SPE8}
```

ROU1: Identification of the route of first choice
S1..S1024: for outgoing routes.
ROU2: Identification of the route of second choice
S1..S1024: for outgoing routes.
TLIB: Type of disconnection
NRL: normal
IMME: immediate
MAXCOIN: maximum number of coins in public telephone coin box (1..10000)

REMARKS

- The immediate type of disconnection affects terminated calls handling:

  Internal calls - The connection is broken when the called party disconnects and the busy tone is sent to the caller. No timing is applied to called party re-answering. Calls are normally disconnected when the calling party hangs up.

  Incoming calls - When the called party hangs up the connection is broken, the "reverse disconnects and busy tone" signal will be sent immediately. Calls normally are disconnected by the calling party hanging up.

  The exchange operating procedure that corresponds to each service parameter is described below:

- **PAYPSP** - Switching semi-public telephone

  In calls from terminals with this service parameter, the exchange applies a single ramped polarity reversal at the called party answering and hanging up.

- **DINVPOL** – generating double polarity reversal

  In calls from terminals with this service parameter, the exchange applies two ramped polarity reversals separated by a 900 ms interval at the times established by the billing associated to the exchange. This service parameter should be specified for public telephones using double polarity reversal for controlling coin collection.

- **INVPOL** - generating polarity reversal
- **FREQ** - 12 kHz pulse generation

In calls from terminals with this service parameter, the exchange generate a 12 kHz pulse with a 150 ms length at the times established by the billing associated to the exchange. This service parameter should be specified for public telephones using 12 kHz tone for controlling coin collection.

- **PAYPSP** - Switching semi-public telephone

  This parameter should be specified for semi-public telephones. In calls from terminals with this service parameter, the exchange will detect whether the set switch is in the normal position or in the public telephone position, selecting, in the normal position, the class data specified for parameter PAYPSP and, in the public telephone position, the class data of the next number.

- **NORSRV** - normal service

  This parameter indicates normal service and should be specified for common subscriber terminal.

- **ROUSSS** - forwarding according to the requested support service.

  This parameter indicates that the exchange, before forwarding calls, should check which support service was requested by the subscriber, which could be voice, audio or unrestricted 64 kbit/s.

  If the support service requested by the subscriber is VOICE, the call will be forwarded according to the parameters defined by the subscriber current class.

  If the support service requested by the subscriber is AUDIO, the call will be forwarded according to the parameters defined by the next class after subscriber current class.

  If the support service requested by the subscriber is NRESTR, the call will be forwarded according to the parameters defined by the next class after subscriber current class.

- **PRPAGO –** Permits the subscriber terminal to use the pre-paid service
- **SERA –** Remote biller data access.

  Provides the subscriber remote access to biller data. This parameter should be used with RTT = TOREST and the terminal should be fully blocked.

IT-CLA Query Terminal Class

This command is used to display the terminal classes programmed in the exchange.

INPUT FORMAT

```
IT-CLA [ : CLA = xxx ] ;
```

PARAMETERS

CLA: terminal class (1..32)

OUTPUT FORMAT

If parameter CLA is specified, the selected terminal class parameters are displayed in the following format:

```
CLA=xxx      NAM=xxxxxxxx
                    OCT=xx   TCT=xx   SVP=xxxxxxx
                    RTT={ NRESTR | TOREST | xx&...&xx }
                    TLIB=xxx  RTO={NRESTR | TOREST |
xx&...&xx}
                    [ MAXCOIN = xxxx ]
```

If CLA parameter is not specified the parameters of all programmed terminal classes are displayed in the following format:

```
CLA=xxx      NAM=xxxxxxxx
                    OCT=xx   TCT=xx   SVP=xxxxxxx
                    RTT={ NRESTR | TOREST | xx&...&xx }
                    TLIB=xxx  RTO={NRESTR | TOREST |
xx&...&xx}
                    [ MAXCOIN = xxxx ]
       .
       .
CLA=xxx             NAM=xxxxxxxx
                    OCT=xx   TCT=xx   SVP=xxxxxxx
                    RTT={ NRESTR | TOREST | xx&...&xx }
                    TLIB=xxx  RTO={NRESTR | TOREST |
xx&...&xx}
                    [ MAXCOIN = xxxx ]
```

MD-CLA Modify Terminal Class

This command is used to change the parameters of a terminal class.

INPUT FORMAT

```
MD-CLA : CLA=xx {[,NAM="xxxxxxxx"][,OCT=xx][,TCT=xx]
             [,RTT={ NRESTR | TOREST | xx&..&xx}]
             [,SVP=xxxxxxx][,RTO=xx&..&xx][,TLIB=xxxx]
[,MAXCOIN=xxxxx]};
```

PARAMETERS

CLA: terminal class (1..32)

NAM: designation of terminal class (up to 8 alphanumeric characters in apostrophes)

OCT: originating category (1..15), i. e., the signal to be sent in

exchanging MFC signaling in outgoing calls, when the calling terminal category is requested

TCT: terminating category (1..15), i. e., end-of-selection signal to be sent in exchanging MFC signaling in incoming calls for the terminal

RTT: termination restriction

NRESTR: unrestricted

TOREST: fully restricted

or list of values (1..14 & CDC & LINTST), where (1..14) indicate the originating category of terminals that cannot call terminals of that class, CDC indicates block for incoming CDC calls and LINTST indicates restricted for line testing.

SVP: service parameter

NORSRV: normal service

INVPOL: generating polarity reversal

PRPAGO: Permits the subscriber terminal to use the pre-paid service

SERA: Permits subscriber remote billing data access

DINVPOL: generating double polarity reversal

FREQ: 12 kHz pulse generation

PAYPSP: switching semi-public telephone

ROUSSS: forwarding according to the requested support service

RTO: list of originating restrictions values

```
{TOREST | NRESTR | INTRA, LOC, REG, DDD, IDD,
CDC, LSS, ISS, SPE1, SPE2, SPE3, SPE4, SPE5,
SPE6, SPE7, SPE8}
```

TLIB: Type of disconnection

NRL: normal

IMME: immediate

MAXCOIN: maximum number of coins in public telephone coin box (1..10000)

REMARKS

- At least one of the optional parameters should be specified. Only specified parameters are altered.
- To delete the supervision programming of the number of coins collected by public telephones, specify MAXCOIN = 0.
- Refer to the remarks on command CR-CLA (Create Terminal Class).

SU-CLA Suppress Terminal

This command is used to suppress a terminal class.

INPUT FORMAT
```
SU-CLA : CLA = xxx ;
```

ParAmetERS

CLA: terminal class (1..32)

REMARKS
- A terminal class can only be suppressed when it is not associated with any subscriber.

CNF Commands

END-CNF Conclude Exchange Configuration

This command is used to end configuring the exchange.

The command can only be carried out via local connection linked to the exchange Maintenance Unit (unit 1).

Executing this command results in interrupting the communication between the exchange and the CSR.

INPUT FORMAT
```
END-CNF ;
```

REMARKS
- The exchange will not be considered as configured if the site code and password and types of exchange units are not programmed. In this case, command END-CNF will not be accepted and the exchange remains in its "configuration mode".

INI-CNF Begin Configuring Exchange

This command is used to set the exchange to its configuration mode.

INPUT FORMAT
```
INI-CNF ;
```

REMARKS
- Running this command results in initializing all exchange configuration tables and the interruption of the exchange-CSR communication. Communication with theBZ-RS will be restored via command INI-CON in "configuration mode".

REP-CNF Store Configuration Data

This command is used to request configuration reports, to be

subsequently used for generating the exchange configuration file.

INPUT FORMAT

```
REP-CNF [ : REP = xxxx ] ;
```

PARAMETERS

REP: configuration report code:

UNIT: Exchange units
SYNC: Synchronism
PDT: External Alarm Detection Points
EMP: External Alarm Output Points
SUB: Numbering Plan
CLA: Terminal Classes
CPCT: PABX Groups
ROUT: Routing Plan
AUX: Auxiliary Equipment
ORP: Originated Routing Plan
CHA: Charging Plan
OPP: Exchange Operating Parameters
TOE: Exchange Operating Timing
MEX: Work Shift Modality
SSV: Supplementary Service
SNL: Signaling

OUTPUT FORMAT

If the REP parameter is not specified, all reports will be stored and, during the execution, the following output will be displayed:

```
REP = UNIT/SYNC          Ok
REP = SUB/CLA/CPCT/SSV   Ok
REP = AUX                Ok
REP = PDT/EMP            Ok
REP = CHA                Ok
REP = ROUT               Ok
REP = ORP                Ok
REP = OPP/TOE/MEX        Ok
REP = SNL                Ok
```

If the REP parameter is specified, only the selected report will be stored, with the following output:

```
REP = XXXXXXX            Ok
```

REMARKS

- The files are stored in the exchange directory specified by PATH parameter of the CR-EXC command (Create Exchange in Exchange Registry).
- If the REP parameter is not specified, all exchange configuration

data will be stored.

- Printing configuration reports and automatically generating configuration files are executed by the CNF program, described in the exchange operating manual. The exchange operating manual provides configuration reports for a hypothetical BZ-RS exchange.
- Bill Number information and the correspondence Directory Number are available in the exchange directory specified by PATH parameter of the CR-EXC command, the file name is: RSXXX-YYY.DAT (XXX=SM Number and YYY=RAIU Number).

CSR Commands

CR-CSRCAL Create CSR Calling Number

This command is used to program the exchange for placing alarm calls to the CSR.Programming consists of specifying the business hours modality and the sequence of digits to be dialed for making alarm calls to the CSR.

INPUT FORMAT

```
CR-CSRCAL : [ MEX = x, ] SEQ = xxxxxxxxxxxxxxx ;
```

PARAMETERS

MEX: business hours modality (1..2)
SEQ: sequence of digits to be dialed by the exchange to make an alarm call to the CSR (up to 30 digits)

REMARKS

- No business hours modality will be required for configuring an exchange for a single CSR; in this case, the value of MEX is always 1.

IT-CSRCAL Query CSR Calling Number

This command is used to display the business hours modality and the sequence of digits to be dialed by the exchange when making alarm calls to the CSR.

INPUT FORMAT

```
IT-CSRCAL [ : MEX = x ] ;
```

PARAMETERS

MEX: business hours modality (1..2)

OUTPUT FORMAT

If the MEX parameter is specified, the sequence of digits programmed for exchange alarms calls to the CSR in the programmed business hours modality will be displayed in the following format:

```
MEX = x    SEQ = xxxxxxxxxxxxxxxx
```

If the MEX parameter is not specified, the sequences of digits programmed for making exchange alarms calls to the CSR during all programmed business hours modalities will be displayed in the following format:

```
MEX = x    SEQ = xxxxxxxxxxxxxxxx
       .            .
       .            .
       .            .
MEX = x    SEQ = xxxxxxxxxxxxxxxx
```

REMARKS

- The business hours modality permits varying the CSR number to be dialed according to the day of the week and the time of the day.

MD-CSRCAL Modify CSR Calling Number

This command is used to change the sequence of digits to be dialed for making alarm calls to the CSR.

INPUT FORMAT

```
MD-CSRCAL : SEQ = xxxxxxxxxxxxxxxx  [, MEX = x] ;
```

PARAMETERS

MEX: business hours modality (1..2)

SEQ: sequence of digits to be dialed by the exchange to make an alarm call to the CSR (up to 30 digits)

SU-CSRCAL Suppress CSR Calling Number

This command is used to supress the programming made in the exchange for placing alarm calls to the CSR.

INPUT FORMAT

```
SU-CSRCAL [ : MEX = x ] ;
```

PARAMETERS

MEX: business hours modality (1..2)

REMARKS

- If parameter MEX is not specified, the entire exchange programming for making alarm calls to the CSR will be erased.

DTMF Commands

CR-DTMF Create DTMF Receiver

This command is used to create DTMF receivers

INPUT FORMAT

```
CR-DTMF : DTMF = xx-xx-xx &..& xx-xx-xx ;
```

PARAMETERS

DTMF: DTMF receiver number in the unit-board-circuit format

Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..60)

REMARKS

- A DTMF receiver is created in the blocked operating status (BLK) and should be unblocked by the MD-DTMFSTE command .
- .
- The total number of DTMF transceivers plus the number of MFC receivers must not exceed 60.

IT-DTMF Query DTMF Receiver Status

This command is used to display the operating status of DTMF receivers.

INPUT FORMAT

```
IT-DTMF [ : { DTMF = xx-xx-xx | STE = xxx } ] ;
```

PARAMETERS

DTMF: DTMF receiver number in the unit-board-circuit format:

Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..60)

STE: DTMF receiver operating status

BLK: operator blocking
SRV: in service
NBD: no board

OUTPUT FORMAT

If the DTMF parameter is specified, the selected DTMF receiver operating status will be displayed in the following format:

```
DTMF = xx-xx-xx   STE = xxx
```

If the STE parameter is specified, the DTMF receivers with the selected operating status are displayed in the following format:

```
STE =  xxx
DTMF = xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx
                    .                .           .
       .               .
                    .                .           .
       .               .
          xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-
xx
```

If no parameter is specified, the operating status of all the exchange DTMF receivers will be displayed in the following format:

```
DTMF = xx-xx-xx   STE = xxx
       .          .
       .          .
       .          .
DTMF = xx-xx-xx   STE = xxx
```

REMARKS

- A DTMF receiver will be in the BLK (operator blocking) operating status when blocked by the MD-DTMFSTE command.
- A DTMF receiver will be in the NBD (no board) operating status when corresponding board is not fitted.
-

SU-DTMF Suppress DTMF Receiver

This command is used to suppress DTMF receivers.

INPUT FORMAT

```
SU-DTMF : DTMF = xx-xx-xx&..&xx-xx-xx ;
```

PARAMETERS

DTMF: DTMF receiver number in the unit-board-circuit format

Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..60)

REMARKS

- A DTMF receiver can only be suppressed in BLK (fully blocked) operating status.
-

MD-DTMFSTE Modify DTMF Receiver Status

This command is used to block or unblock a DTMF receiver.

INPUT FORMAT

```
MD-DTMFSTE : DTMF = xx-xx-xx&..&xx-xx-xx, STE = xxx ;
```

PARAMETERS

DTMF: DTMF receiver number in the unit-board-circuit format

Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..60)

STE: DTMF receiver operating status

BLK: operator blocked
SRV: in service

REMARKS

- DTMF receiver operator blocking (BLK) only applies to DTMF receivers with SRV (in service) and NBD (no board) operating status.
- Unblocking a DTMF receiver or setting it as SRV (in service) operating status only applies to DTMF receivers with BLK (operator blocking) operating status.

EXT Commands

AT-EXTEM Activate External Alarm Output Point

This command is used to activate an external alarm output point in the exchange.

INPUT FORMAT

```
AT-EXTEM : EMP = xx-xx-xx ;
```

PARAMETERS

EMP: external alarm output point in the unit-board-circuit format

Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..16)

DS-EXTEM Deactivate External Alarm Output Point

This command is used to deactivate an external alarm output point

in the exchange.

INPUT FORMAT

```
DS-EXTEM : EMP = xx-xx-xx ;
```

PARAMETERS

EMP: external alarm output point in the unit-board-circuit format

Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..16)

IT-EXTEM Query External Alarm Output Point

This command is used to display external alarm output points created in the exchange.

INPUT FORMAT

```
IT-EXTEM ;
```

OUTPUT FORMAT

External alarm output points created in the exchange are displayed in the following format:

```
EMP = xx-xx-xx
  .           .
  .           .
  .           .
EMP = xx-xx-xx
```

PS Commands

CR-PS Create Peripheral Stage

This command is used to create Peripheral Stages (PS) in the exchange.

INPUT FORMAT

```
CR-PS : PS = xx,  NAM = "xxxxxxxx", RAIU = xx-xx
[,TERM="xxxxxxx", NOD="xxxxxxx"] , PRO = RAIU;
```

PARAMETERS

PS: Peripheral Stage number (1..6)
NAM: PS designation (up to 8 alphanumeric characters in apostrophes)
PRO: communication protocol.

RAIU: 5ESS RAIU protocol.

RAIU: 5ESS RAIU identification in format sm-raiu#

Sm: 5ESS switch module (1..192)

raiu#: RAIU identification in each SM (0..125)

TERM: 5ESS virtual terminal that will be used for accessing the 5ESS switch when the **DRM** mode is active (up to 8 alphanumeric characters). For information on TTY names, see 235-600-314, 5ESS Switch ECD/SG Database Manual. Only lower case names must be used.
NOD: identifies in which network node the SM module is located. It is a string with numeric value (0..15)

REMARKS

- The unique value that can be specified for the PRO parameter is 'RAIU'.

IT-PS Query Peripheral Stages

This command is used to display the Peripheral Stages created in the exchange.

INPUT FORMAT

```
IT-PS [ : PS = xx ] ;
```

PARAMETERS

PS: Peripheral Stage number (1..6)

OUTPUT FORMAT

If parameter PS is specified, the PS designation, the CS-PS communication ports and the limits of subscribers created in the PS are displayed in the following format:

```
PS = xx  NAM = xxxxxxxx  PRO = xxx   RAIU = xx-xx
                         [TERM = xxxxxx  NOD = xxxxxxx]
```

If parameter PS is not specified, the PS designations, the CS-PS communication ports and the limits of subscribers created in the PSs of all PSS created in the exchange are displayed in the following format:

```
PS = xx  NAM = xxxxxxxx  PRO = xxx   RAIU = xx-xx
                         [TERM = xxxxxx  NOD = xxxxxxx]
       .      .           .            .           .      .
       .
       .      .           .            .           .      .
       .
       .      .           .            .           .      .
       .
PS = xx  NAM = xxxxxxxx  PRO = xxx   RAIU = xx-xx
                         [TERM = xxxxxx  NOD = xxxxxxx]
```

SU-PS Suppress Peripheral Stage

This command is used to suppress a Peripheral Stage in the exchange.

INPUT FORMAT

```
SU-PS : PS = xx ;
```

PARAMETERS

PS: Peripheral Stage number (1..6)

REMARKS

- When an PS is suppressed its name is removed from the operating environment field in the CSR for Windows screen.

SLIDTR Commands

IT-SLIDTR

Query Digital Juntor Slippage Rate

This command is used to query the slippage rate during the current hour, the last hour and over the last 24 hours.

INPUT FORMAT

```
IT-SLIDTR [ : BOARD = xx-xx ,[TRKINT = xx]];
```

PARAMETERS

BOARD: Board number in the unit-board format

Unit: terminal unit number (1..1)
Board**:** terminal board number (1..2)

```
TRKINT :  Trunk number (1..16)
```

OUTPUT FORMAT

If the BOARD parameter is specified, the rate of slippage during the current hour, the last hour and over the last 24 hours of the selected digital trunk will be displayed in the following format:

```
BOARD=xx-xx TRKINT=xx  Current hour=xxxxxx   Last
hour=xxxxxx Last 24 hour=xxxxxx
```

If the BOARD parameter is not specified, slippage data of all digital trunk boards created in the exchange will be displayed in the following format:

```
BOARD=xx-xx TRKINT=xx Current hour=xxxxxx   Last
hour=xxxxxx   Last 24 hour=xxxxxx
      .           .           .           .           .

      .           .           .           .           .

      .           .           .           .           .

BOARD=xx-xx TRKINT=xx Current hour=xxxxxx   Last
hour=xxxxxx   Last 24 hour=xxxxxx
```

REMARKS

- If the parameter TRKINT is not specified, the assumed value will be 01.

UNIT Commands

CR-UNIT Create Exchange Unit

This command is used to create an exchange unit.

INPUT FORMAT

```
CR-UNIT : UNI = xx, TYPUNI = xxx ;
```

PARAMETERS

UNI: unit number (1..1)

TYPUNI: type of exchange unit

USP: BZRS Unit

REMARKS

- Only units created by command CR-UNIT can enter operation.
- Boards (and, consequently, assemblies) can only be created in units previously created by command CR-UNIT.

IT-UNIT Query Exchange Installed Units n

This command is used to display the boards fitted in the exchange units.

INPUT FORMAT

```
IT-UNIT [ : UNI = xx] ;
```

PARAMETERS

UNI: unit number (1..1)

OUTPUT FORMAT

If the UNI parameter is specified or not, the master system unit, the master interface unit, the selected type of unit, the model of CPU board (specifying the version of Setup program and RAM memory), model of ITC, and the Boot program version will be displayed as follows:

```
TYPUNI=USP      MSTSIS = xx         MSTINT = xx

CPU   = xxxxx           MEM = xxxxx
ITC   MOD = xxxxxxxxx

BOOT  xxxxxxxxxx
```

SU-UNIT Suppress Unit

This command is used to suppress an exchange unit.

INPUT FORMAT

```
SU-UNIT : UNI = xx ;
```

PARAMETERS

UNI: unit number (1..1)

REMARKS

- A unit can only be suppressed when it has created no units.
-

JMA Commands

CR-JMA Create Announcement Machine Junction

This command is used to associate an announcement machine junction and a message.

INPUT FORMAT

```
CR-JMA : JMA = xx-xx-xx, MSG = xxx ;
```

PARAMETERS

JMA: junction number in the unit-board-circuit format
- **Unit**: number of the terminal unit (1..1)
- **Board**; terminal board number (1..2)
- **Circuit**: board circuit number (1..28)

MSG: type of message
- **ADN**: access denied
- **BLK**: blocked
- **CCO**: originating collect call
- **CCT**: terminating collect call
- **CGT**: congestion
- **DISC**: dialing
- **DSP**: alarm call service
- **SCL**: subscriber credit limit
- **MCC**: collect call music
- **MOA**: accepted operation-message
- **MOI**: incorrect-operation message
- **NDF**: defective number
- **CHN**: change number
- **DND**: do not disturb
- **VCL**: vacant level
- **BSY**: busy tone
- **PPB**: prepaid blocking
- **ORF**: faulty outgoing route

TRF: forwarding

REMARKS

- An announcement machine junction is created in blocked operating status (BLK) and should be unblocked by command MD-JMASTE.
- **The first circuit number in the JMA parameter corresponds to the file wave file selected during the binary file generation (see details in section 3).**
- **The DISC event in the MSG parameter shall be created as many times as it was included in the binary file (see details in section 3).**

IT-JMA Query Announcement Machine Junctions

This command is used to display announcement machine junctions with their assigned messages.

INPUT FORMAT

```
IT-JMA [ : { JMA = xx-xx-xx | STE = xxx } ] ;
```

PARAMETERS

JMA: junction number in the unit-board-circuit format

Unit: number of the terminal unit (1..1)

Board; terminal board number (1..2)

Circuit: board circuit number (1..28)

STE: announcement machine junction operating status

BLK: operator blocking

SRV: in service

NBD: no board

OUTPUT FORMAT

If the STE parameter is specified, the announcement machine junctions with the selected operating status will be displayed in the following format:

```
STE=xxx
JMA=xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx xx-xx-xx
             .            .            .              .
             .            .            .              .
             .            .            .              .
       xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx   xx-xx-xx
```

If the JMA parameter is specified, the message assigned to the selected junction will be displayed in the following format:

```
JMA = xx-xx-xx   MSG = xxx   STE = xxx
```

If the JMA parameter is not specified, the messages assigned to all junctions will be displayed in the following format:

```
JMA = xx-xx-xx   MSG = xxx   STE = xxx
      .            .
      .            .
      .            .
JMA = xx-xx-xx   MSG = xxx   STE = xxx
```

REMARKS

- An announcement machine junction will have the BLK operating status (operator blocking) when undergoing blocking by command MD-JMASTE.
- An announcement machine junction will have the NBD operating status (no board) when the corresponding board has not been fitted.

SU-JMA Suppress Announcement Machine Junction

This command is used to suppress the association between an announcement machine junction and a message.

INPUT FORMAT

```
SU-JMA : JMA = xx-xx-xx ;
```

PARAMETERS

JMA: junction number in the unit-board-circuit format
Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..28)

REMARKS

- An announcement machine junction is only suppressed when in BLK (operator blocking) operating status. The suppressed junction assumes NCR (not created) operating status.

MD-JMASTE Modify Junction Operating Status

This command is used to block or unblock announcement machine junctions, changing their operating status.

INPUT FORMAT

```
MD-JMASTE : JMA = xx-xx-xx&..&xx-xx-xx, STE = xxx ;
```

PARAMETERS

JMA: junction number in the unit-board-circuit format
Unit: number of the terminal unit (1..1)
Board; terminal board number (1..2)
Circuit: board circuit number (1..28)
STE: junction operating status

BLK: operator blocking
SRV: in service

REMARKS

- Operator blocking (BLK) a junction applies to junctions in service (SRV) operating status.
- Unblocking or placing a junction in service (SRV) operating status applies to junctions with operator blocking (BLK) operating status.

TRK Commands

CR-TRK Create Trunks

This command is used to assign trunks to a route. The route should have been set up previously.

INPUT FORMAT

```
CR-TRK : TRK = xx-xx-xxx&..&xx-xx-xxx, ROUT = xxxxx [,
SNL = xxx ];
```

PARAMETERS

TRK: trunk number in the unit-board-circuit format
Unit: terminal unit number (1..1)
Board: trunk board number (1..2)
Circuit: board signaling circuit number (385..511)
ROUT: route ID
S1..S1024: outgoing routes
SNL: trunk line signaling
PEM: pulsed E+M
R1: digital R1

REMARKS

- A trunk is created in blocked operating status (BLK) and should be unblocked by the MD-TRKSTE command.
- A list of trunks may be created in Configuring Mode, in which case the trunks will be created with in service status.
- If parameter SNL is not specified, line signaling will be assumed as pulsed E+M (PEM).

IT-TRK Query Trunk Data

This command is used to display trunk data.

INPUT FORMAT

```
IT-TRK [ : { TRK = xx-xx-xxx | STE = xxx | SNL = xxx }
] ;
```

PARAMETERS

TRK: trunk number in the unit-board-circuit format

Unit: terminal unit number (1..1)

Board: trunk board number (1..2)

Circuit: board signaling circuit number (385..511)

STE: trunk operating status

NCR: not created

BLK: operator blocking

BLF: failure blocking

BLE: blocked by an external signal

SRV: in service

FAL: faulty

RET: retained

NBD: no board

BKD: blocked for outgoing

SNL: trunk line signaling

PEM: pulsed E+M

R1: digital R1

OUTPUT FORMAT

If the TRK parameter is specified the selected trunk data will be displayed in the following format:

```
TRK = xx-xx-xxx  ROUT = xxxxx  SNL = xxx   GRX = xx
GTX = xx  NCEO = xxx  STE = xxx
```

If the STE parameter is specified, trunks with the selected operating status will be displayed in the following format:

```
STE = xxx
TRK = xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx
                    .           .           .
                    .           .           .
                    .           .           .
        xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-
xx
```

If the SNL parameter is specified, the trunks operating with the selected line signaling will be displayed in the following format:

```
SNL = xxx
TRK = xx-xx-xxx  xx-xx-xxx  xx-xx-xxx  xx-xx-xxx
            .           .           .           .
                    .           .           .           .
                    .           .           .           .
        xx-xx-xxx  xx-xx-xxx  xx-xx-xxx  xx-xx-xxx
```

If no parameter is specified, the data on all trunks setup in the exchange will be displayed in the following format:

```
TRK = xx-xx-xxx  ROUT = xxxxx   SNL = xxx   GRX = xx
GTX = xx  NCEO = xxx   STE = xxx
                          .           .           .
      .     .
                          .           .           .
      .     .
TRK = xx-xx-xxx  ROUT = xxxxx   SNL = xxx   GRX = xx
GTX = xx  NCEO = xxx   STE = xxx
```

REMARKS

- A trunk will have not created (NCR) operating status when an existing created board exists has not yet been assigned to a route by the CR-TRK command.
- A trunk will have operator blocking (BLK) operating status when blocked by by the MD-TRKSTE command.
- A trunk will have faulty (FAL) operating status when the trunk number of consecutive unsuccessful seizures (NCEO) or percentage of unsuccessful seizures exceeds the respective failure supervision threshold for the route it belongs to. The reason for considering the trunk faulty is indicated by displaying mnemonics NCEO or MPEO.
- A trunk will have failure blocking (BLF) operating status when having been automatically blocked by the exchange failure supervision mechanism.
- A trunk will have blocked by an external signal (BLE) operating status when receiving an external blocking signal.
- A trunk will have retained (RET) operating status when waiting for a disconnect confirmation signal in the case of trunks with pulsed E+M (PEM) signaling.
- The GRX and GTX parameters specify the gain values applied to the trunk transmission and reception.
- The NCEO parameter specifies the number of unsuccessful seizures of the trunk.

SU-TRK Suppress Trunk

This command is used to suppress a route trunks.

INPUT FORMAT

```
SU-TRK : TRK = xx-xx-xxx, ROUT = xxxxx ;
```

PARAMETERS

TRK: trunk number in the unit-board-circuit format

Unit: terminal unit number (1..1)

Board: trunk board number (1..2)

Circuit: board signaling circuit number (385..511)

ROUT: route ID:
S1..S1024: outgoing routes

REMARKS

- A trunk is only suppressed when in BLK (operator blocking) operating status. A suppressed trunk assumes NCR(not created) operating status.
- For RAIU trunk definitions, the TRK parameter shall accept values between 1 and 511 for the CIR component.

MD-TRKSTE Modify Trunk Operating Status

This command is used for blocking or unblocking trunks, changing their operating status.

INPUT FORMAT

```
MD-TRKSTE : TRK = xx-xx-xx&..&xx-xx-xx, STE = xxx [,
IMME ] ;
```

PARAMETERS

TRK: trunk number in the unit-board-circuit format
Unit: terminal unit number (1..1)
Board: trunk board number (1..2)
Circuit: board signaling circuit number (385..511)
STE: trunk operating status
BLK: operator blocking
SRV: in service
BKD: outgoing blocked
IMME: trunk immediate blocking options

REMARKS

- Operator blocking (BLK) a trunk applied to trunks with in service operating status (SRV), failure blocking (BLF) and no board (NBD).
- Unblocking or placing a trunk in service (SRV) operating status applies to trunks in operator blocking (BLK) operating status.
- If the IMME parameter is not specified the exchange waits for the current call to end and only blocks the trunk when it is idle. At the moment the block comes into effect, the exchange dispatches a trunk blocking confirmation message to the CSR.
- If the IMME parameter is specified, the exchange immediately blocks the trunk interrupting the current call.
- For RAIU trunk definitions, the TRK parameter shall accept values between 1 and 448 for the CIR component.

LOG Commands

IT-LOGEXC Query Exchange Command Log

This command is used to display the exchange Command Log, a record of all commands affecting the exchange configuration.

INPUT FORMAT

```
IT-LOGEXC  [ : [ DAT = xx-xx-xx  ] [, PORT = xx-xxxx  ]
[, CMD = xxx-xxxxxxx] ] ;
```

PARAMETERS

DAT: date in format yy-mm-dd:

yy: year(00..99)

mm: month (01..12)

dd: day (01..31)

PORT: exchange unit serial communication port in the unit-port format

unit: unit number (1..1)

port: serial communication port

COM1: COM1 serial communication port

COM2: COM2 serial communication port

COM3: COM3 serial communication port

CMD: command code

OUTPUT FORMAT

Alarms and events recorded in the exchange are displayed in the following format:

```
DAT = xx-xx-xx   HOU = xx:xx:xx   PORT = xx-xxxx
CONTYP = xxx   CMD = xxx...xxx
             .            .            .            .
             .            .            .            .
DAT = xx-xx-xx   HOU = xx:xx:xx   PORT = xx-xxxx
CONTYP = xxx   CMD = xxx...xxx
```

REMARKS

- If the DAT parameter is specified, only the commands run from the chosen date onward will be displayed.
- If the PORT parameter is specified, only the commands run from the selected serial port will be displayed.
- The Log provides capacity for storing the last 1000 successfully run configuration commands.

RV-LOGEXC Remove Exchange Command Log

This command is used to remove the exchange Command Log.

INPUT FORMAT

```
RV-LOGEXC ;
```

MFC Commands

CR-MFC Create MFC Sender/Receiver

This command is used to create MFC senders/receivers.

INPUT FORMAT

```
CR-MFC : MFC = xx-xx-xx&..&xx-xx-xx  [, DIR = xxx ] ;
```

PARAMETERS

MFC: MFC sender/receiver number in the unit-board-circuit format

Unit: terminal unit number (1..1)
Board: trunk board number (1..2)
Circuit: board signaling circuit number (1..60)

DIR: traffic direction:

OUT: outgoing traffic
IN: incoming traffic
BID: two-way traffic

REMARKS

- The MFC sender/receiver is created in blocked (BLK) operating status and should be unblocked by the MD-MFCSTE command.
- If DIR parameter is not specified, the assigned traffic direction of the created MFC sender/receiver will be two-way.
- The total number of MFC transceivers plus the number of DTMF receivers must not exceed 60.

IT-MFC Query MFC Sender/Receiver Status

This command is used to display the operating status of MFC senders/receivers.

INPUT FORMAT

```
IT-MFC [ : { MFC = xx-xx-xx | STE = xxx } ] ;
```

PARAMETERS

MFC: MFC sender/receiver ID in the unit-board-circuit format
- **Unit**: terminal unit number (1..1)
- **Board**: trunk board number (1..2)
- **Circuit**: board signaling circuit number (1..60)

STE: STE sender/receiver operating status
- **BLK**: operator blocking
- **BLF**: failure blocking
- **SRV**: in service
- **FAL**: failed
- **NBD**: no board

OUTPUT FORMAT

If the STE parameter is specified, the MFC senders/receivers with the selected operating status will be displayed in the following format:

```
STE = xxx
MFC = xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx
                          .           .           .
      .
                          .           .           .
      .
                          .           .           .
      .
      xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx  xx-xx-xx
```

If the MFC parameter is specified, the operating status of the selected MFC sender/receiver will be displayed in the following format:

```
MFC = xx-xx-xx   DIR = xxx   NCEO = xxx   STE = xxx
```

If no parameter is selected, the operating status of all MFC senders/receivers in the exchange will be displayed in the following format:

```
MFC = xx-xx-xx   DIR = xxx   NCEO = xxx   STE = xxx
      .            .
      .            .
      .            .
MFC = xx-xx-xx   DIR = xxx   NCEO = xxx   STE = xxx
```

REMARKS

- A MFC sender/receiver will have the BLK (operator blocking) status when blocked by command MD-MFCSTE.
- A MFC sender/receiver will have the FAL (failed) status when the number of consecutive unsuccessful seizures (NCEO) or the percentage of unsuccessful seizures (MPEO) reaches or exceeds the respective threshold programmed for MFC sender/receiver failure supervision. The motive for considering the element failed will be displayed on the right of parameter STE, by mnemonics NCEO or MPEO.
- A MFC sender/receiver will have the BLF (failure blocking) status when automatically blocked by the exchange failure

supervision mechanism.

- A MFC sender/receiver will have the NBD (no board) status when the corresponding board is missing.
-

SU-MFC Suppress MFC Sender/Receiver

This command is used to suppress MFC senders/receivers

INPUT FORMAT

```
SU-MFC : MFC = xx-xx-xx ;
```

PARAMETERS

MFC: MFC sender/receiver ID in the unit-board-circuit format
Unit: terminal unit number (1..1)
Board: trunk board number (1..2)
Circuit: board signaling circuit number (1..60)

REMARKS

- A MFC sender/receiver can only be supressed if it has BLK (fully blocked) operating status.

MD-MFCSTE Modify MFC Sender/Receiver Status

This command is used to block or unblock a MFC sender/receiver.

INPUT FORMAT

```
MD-MFCSTE : MFC = xx-xx-xx&..&xx-xx-xx, STE = xxx ;
```

PARAMETERS

MFC: MFC sender/receiver ID in the unit-board-circuit format
Unit: terminal unit number (1..1)
Board: trunk board number (1..2)
Circuit: board signaling circuit number (1..60)
STE: MFC sender/receiver operating status
BLK: operator blocking
SRV: in service

REMARKS

- Operator blocking (BLK) a MFC sender/receiver only applies to MFC senders/receivers with SRV (in service), FAL (failure blocking) and NBD (no board) operating status.
- Unblocking or placing a MFC sender/receiver SRV (in service) operating status only applies to MFC senders/receivers with BLK (operator blocking) and BLF (failure blocking) operating status.

MSG Commands

COP-MSGDSP Copy DSP Messages

This command is used to transfer voice message files to the connected BZRS.

INPUT FORMAT

```
COP-MSGDSP : BOARD = xx-xx, FIL = "xxx..xxx" ;
```

PARAMETERS

BOARD: board number in the unit-board format
- **unit**: terminal unit number (1..1)
- **board**: trunk board number (1..2)

FIL: file name in the [drive:] [directory] filename format
- **drive**: drive (A, B or C) containing the disk where the file is stored in (if omitted, the current drive will be accessed)
- **directory**: name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
- **filename**: name of the file (up to 8 alphanumeric characters

REMARKS

- The binary file shall always be transferred to both MXTS board in the unit.

RE-MSGDSP Record DSP Messages Data File

This command is used to transfer voice message files from the connected BZRS generating the indicated data file.

INPUT FORMAT

```
RE-MSGDSP : BOARD = xx-xx, FIL = "xxx..xxx" ;
```

PARAMETERS

BOARD: board number in the unit-board format
- **unit**: terminal unit number (1..1)
- **board**: trunk board number (1..2)

FIL: file name in the [drive:] [directory] filename format
- **drive**: drive (A, B or C) containing the disk where the file is stored in (if omitted, the current drive will be accessed)
- **directory**: name of the directory containing the file (up to 63 alphanumeric characters; if omitted, the current directory will be accessed)
- **filename**: name of the file (up to 8 alphanumeric characters)

REMARKS

- This command shall not be run during the ESA mode.

ORP Commands

AT-ORP Activate Originating Routing Plan

This command is used to activate a new Originating Traffic Routing Plan in the exchange.

INPUT FORMAT

```
AT-ORP  [: ORP = x ];
```

PARAMETERS

ORP: Routing Plan (1..2)

REMARKS

- In order to apply one of the plans to routing call, it should be activated in the exchange.
- Activating a new originating routing plan interrupts all calls being set up.
- Test calls are forwarded according to the auxiliary routing plan.
- The exchange has a single active plane.

COP-ORP Copy Originating Routing Plan

This command is used to copy the contents of the auxiliary routing plan to the specified routing plan.

INPUT FORMAT

```
COP-ORP :  ORP = x ;
```

PARAMETERS

ORP: Routing Plan (1..2)

REMARKS

- After making the changes to the auxiliary routing plan, it will be copied to one of the exchange routing plans, for future activation.

END-ORP Conclude Changing Originating Routing Plan

This command is used to end a changing Originating Traffic Routing Plan session, thus allowing changes by other CSR.

INPUT FORMAT

```
END-ORP ;
```

REMARK

- This command releases the auxiliary plan for further modification initializations.

INI-ORP Begin Changing Originating Routing Plan

This command is used to begin a Originating Traffic Routing Plan changing session, blocking changes by other CSR and copying data from the specified routing plan to the auxiliary routing plan.

INPUT FORMAT

```
INI-ORP  : {ORP = xx | INI };
```

PARAMETERS

ORP: Routing Plan (1..2)

INI: option for initializing Auxiliary Originating Routing Plan data

REMARKS

- If parameter ORP is specified, the copy will be from this plan to the auxiliary routing plan.
- If parameter INI is specified, the auxiliary routing plan will be initialized with all sequences blocked.

IT-ORP Query Originating Routing Plan

This command is used to display Originating Routing Plan data.

INPUT FORMAT

```
IT-ORP [: [ORP = x, | AUX, ]  SEQ = xxxxxxxxxx,];
```

PARAMETERS

SEQ: call digit sequence (up to 10 digits), with 0..9, B, C, D, E as valid values

ORP: Routing Plan (1..3)

AUX: option for consulting Auxiliary Routing Plan data

OUTPUT FORMAT

If no parameter is specified, the exchange informs the active routing plan in the following format:

```
ORP=x  TabCtrf=x % TabInd=x %  TabClaChm=x % (ativo)
ORP=x  TabCtrf=x % TabInd=x %  TabClaChm=x %
```

If the SEQ parameter is specified, parameters of the selected digit sequence routing plan for the terminal classes and routes classes not blocked for the call will be displayed in the following format:

```
SEQ = xxxxxxxxxx
[ CLA = xxx&..&xxx ]
```

```
[ RCL = xx&..&xx ] [OCT = xx&..&xx]
TYP = xxxxx    CHCL = xx   [ BILSYS ] [MCB = xx]
[ROTL = xx-xx-xx [-xx]] .. [SROU = xx-xx-xx [-xx]]
[SECROU = xx-xx-xx [-xx]]
.
.
.
SEQ = xxxxxxxxxx
[ CLA = xxx&..&xxx ]
[ RCL = xx&..&xx ] [OCT = xx&..&xx]
TYP = xxxxx    CHCL = xx    [ BILSYS ] [MCB = xx]
[ROTL = xx-xx-xx [-xx]] ... [SROU = xx-xx-xx [-xx]]
[SECROU = xx-xx-xx [-xx]]
```

REMARKS

- Fields TabCtf, TabInd, and TabClaChm indicate the percentage of the memory space reserved for originating routing programming (ORP) currently in use.
- Field TabCtf relates the quantity of charging classes programmed for the specified ORP .
- Field TabClaChm relates the quantity of call of the specified ORP.
- Field TabInd Ctf reports the quantity of program lines included in the specified ORP.

MD-ORP Modify Originating Routing Plan

This command is used to change the Originating Traffic Routing Plan. Changes are processed in the Auxiliary Plan

INPUT FORMAT

```
MD-ORP:SEQ=xxxxxxxxxx[,CLA = xx&..&xx][,PMO = xx&..&xx]
[, RCL = xx&..&xx [, OCT = xx&..&xx ]] TYP = xxxxx
[, ROU1 = xx-xx-xx[-xx] [, ROU2 = xx-xx-xx[-xx]]
[, ROU3 = xx-xx-xx[-xx]] [, ROU4 = xx-xx-xx[-xx]]
[, ROU5 = xx-xx-xx[-xx]] [SECROU =  xx-xx-xx[-xx]]] ,
[CHCL = xx [, CHE = x ] [, CHP = x ]]
[, BILSYS ] [MCB = xx]
```

PARAMETERS

SEQ: called subscriber digit sequence (the sequence can be specified by up to 16 digits, the last replaceable by a set of up to 14 digits in parenthesis).

TYP: type of call

BLC: blocked
RINGT: ringing test
HD: dial test
INTRA: intra-exchange
LOC: local
REG: regional

DDD: national
IDD: international
FRP: free direct dialing
CDC: collect call direct dialing
DID: call from DDR PABX
LSS: local special service
ISS: long distance special service
RSTPP: reset public telephone coin counter
SPE1..SPE8: carrier-selected special classes
TRCALL: 180s timing in call answering
EME: emergency

CLA: terminal class (1..32)
RCL: list of route classes (1..48) to which all specified routing parameters apply
OCT: originating category (1..15) to which the specified routing parameter applies

ROU1: route of first choice in format rot-ip-ii[-id] where
rot: route number:
S1..S1024: for outgoing routes
I1: for intra-exchange route
ip: start index (1..16), i. e., the digit order number upon which a trunk should be seized in outgoing and tandem calls, or the order number of the units digit in intra-exchange calls (ip >= ii)
ii: start index (1..16), i. e., the order number of the first digit to be sent in register signaling in outgoing calls, or the order number of the digit upon which the backwards exchange should restart exchanging registry signaling with the forward exchange in tandem calls, or the order number of the thousands digit in intra-exchange calls
Id: ID index (1..16), i.e., the order number of the digit upon which the calling party ID should be sent in output calls routed through 5S signaling trunks (id ≥ ii). Pulsed signaling trunks handle this index as End Index and it refers to the last digit to be sent by the trunk in the call (id ≥ ip).

ROU2: second choice route in format rot-ip-ii[-id] described above
ROU3: third choice route in format rot-ip-ii[-id] described above
ROU4: fourth choice route in format rot-ip-ii[-id] described above
ROU5: fifth choice route in format rot-ip-ii[-id] described above

SECROU: safety route in format rot-ip-ii[-id] described above
CHCL: charging class (1..32), NCH, EXMM or BILTR, where:

NCH: indicates a non-charged call
EXMM: indicates an external multimetered call
BILTR: indicates an externally billed call

CHE: Charging Environment (1..8)
CHP: Charging Plan (1..8)
BILSYS: exchange call billing option
MCB: B code matrix (1..32)
PMO: Origin marking point (1..40). Define subscribers groups in the same billing area.

REMARKS

- The procedure for changing an Originating Traffic Routing Plan is described in the exchange Operating Manual.
- If the CLA parameter was omitted, the parameters specified for the call will apply to all terminal classes (1..32).
- The RCL Parameter should only be specified for intra-exchange and Tandem calls.
- If the call is type BLC, parameters ROU1, ROU2, ROU3, ROU4, ROU5, SECROU, CHCL, and BILSYS should not be specified.
- If the call is type RINGT, DISCO, LSS, RSTPP, parameters ROU1 and ROU2, ROU3, ROU4, ROU5, SECROU should not be specified, but parameter CHCL must be.
- For all other types of call, the parameterCHCL is compulsory and parameters ROU2, ROU3, ROU4, ROU5, SECROU, and BILSYS optional.
- A RSTPP type call should be specified in the sequence to be dialed from a public telephone, to initialize its collected-coin counter.
- A TRCALL type call increases the call answering timing to 180 sec, used for operator assisted calls (ex.: SEQ = 100 | 16x | 107).
- The start and end indexes on tandem call outgoing routes should be specified to take in consideration that exchanging MFC signaling with the backward exchange begun upon receiving the called subscriber prefix.
- BILTR billing class should be specified for outgoing, externally billed calls routed through 5S signaling trunks, for the exchange sending the calling party ID
- If the BILSYS parameter is specified, the call will be billed in the exchange.
- The End Index is also considered for applying TSCH timing. If programmed, TSCH timing will only be considered when the

End Index is reached (refer to command MD-EXCTME).

- For intra-exchange calls, primary route I1 must be defined to program the start and end indexes. Route I1 is fictitious and cannot be created
- If the CHE and CHP parameters were not specified, they will display the default to value 1 (CHE=1 and CHP =1)

CTRY Commands

IT-CTRY Query Country

This command is used to query the country where the switch is installed.

INPUT FORMAT

```
IT-CTRY ;
```

OUTPUT FORMAT

```
CTRY = xxx
```

where xxx is the country code:

BRA – Brazil
BOL – Bolivia
ARG – Argentina
VEN – Venezuela
GUB - Guinea Bissau
PER – Peru
CHI – China
USA – United States of America
IND – India

MD-CTRY Modify Country

This command is used to query the country where the switch is installed.

INPUT FORMAT

```
MD-CTRY : CTRY = xxx ;
```

PARAMETER

CTRY: country code
BRA: Brazil
BOL: Bolivia
ARG: Argentina
VEN: Venezuela
GUB: Guinea Bissau
PER: Peru
CHI: China

USA: United States of America
IND: India

BOARD Commands

CR-BOARD Create Board

This command is used to configure a board position in a BZ-RS exchange unit.

INPUT FORMAT

```
CR-BOARD : BOARD = xx-xx, TYP = xxxxxx [,T1 = xx&&xx ];
```

PARAMETERS

BOARD: board number in the unit-pos format
- **unit**: unit number (1..1)
- **pos**: unit position number (1..2)

TYP: type of board
- **MXTSA**: A model of MXTS board

T1: T1 links list (1 to16).

REMARKS

- The MXTSA board can only be created with unit numbers in the range from 1 to 2.
- The T1 parameter specifies which links are in T1 format. The others remain in E1 format.

IT-BOARD Query Board

This command is used to query the configuration of board positions in BZ-RS units.

INPUT FORMAT

```
IT-BOARD [ : { UNI = xx | BOARD = xx-xx } ] ;
```

PARAMETERS

UNI: unit number (1..1)

BOARD: board number in the unit-pos format
- **unit**: unit number (1..1)
- **pos**: unit position number (1..2)

OUTPUT FORMAT

If the BOARD parameter is specified, all data of the selected board will be displayed in the following format:

```
BOARD = xx-xx   [MOD = xxxxxxxxxx ] TYP = xxxxxx
[ T1 = xx&&xx ](Not installed)
```

If no parameter is specified, all boards created in the exchange will be displayed in the following format:

```
BOARD = xx-xx   TYP = xxxxxx  [ T1 = xx&&xx ]
```

```
       .            .            .
       .            .            .
       .            .            .
BOARD = xx-xx   TYP = xxxxxx  [ T1 = xx&&xx ]
```

SU-BOARD Suppress Board

This command is used to suppress the configuration of a board position in a BZ-RS exchange unit.

INPUT FORMAT

```
SU-BOARD : BOARD = xx-xx ;
```

PARMETERS

BOARD: board number in the unit-pos format

unit: unit number (1..1)

pos: unit position number (1..2)

REMARKS

- The indicated board can only be suppressed if there is no created assembly.

OPPSYNC Commands

IT-OPPSYNC Query Exchange Synchronization Parameters

This command is used to query the exchange synchronization parameters.

INPUT FORMAT

```
IT-OPPSYNC ;
```

OUTPUT FORMAT

The exchange synchronization parameters are displayed in the following format:

```
CLKTYP = xx IGEL = xx   PGEL = xx
                  IGIL = xx   PGLF = xxx   PGLS = xx
                  IGAL = xx   PGAL = xx
```

MD-OPPSYNC Modify Exchange Synchronization Parameters

This command is used to modify the exchange synchronization parameters.

INPUT FORMAT

```
MD-OPPSYNC : { [ CLKTYP = xx ] [, IGEL = xx ] [, PGEL =
xx ] [, IGIL = xx ] [, PGLF = xxx ] [, PGLS = xx ]
 [, IGAL = xx ] [, PGAL = xx ] };
```

PARAMETERS

CLKTYP: type of synchronization clock (R2), fitted on the

switching matrix board
IGEL: full external feedback gain (1..16)
PGEL: direct external feedback gain (1..20)
IGIL: full internal feedback gain (1..16)
PGLF: direct internal feedback gain (1..100)
PGLS: direct internal feedback gain - fine adjustment (1..10)
IGAL: full gain adjustment loop (1..16)
PGAL: direct gain adjustment loop (1..50)

REMARKS

- Clock type 1 should be programmed for applications in which the exchange operates as a transit or tandem switch, with a traffic flow above 480 Erl.
- Clock type 2 should be programmed for applications in which the exchange operates as a transit or tandem switch, with a traffic flow below 480 Erl.
- The other synchronization parameters are defined by the clock inner control loops. These parameters are preprogrammed and should never be changed without prior notice from LUCENT TECHNOLOGIES.

PRG Commands

COP-PRG Copy Control Program

This command is used to load the Control Program into the exchange.

INPUT FORMAT

```
COP-PRG : FIL = "xxx..xxx" ;
```

PARAMETERS

FIL: file name in format [drive:] [directory] filename
drive: drive (A, B, or C) containing the file source disk (if omitted, the current disk will be accessed)
directory: name of the directory containing the file (up to 63 alphanumeric characters; if omitted the current disk will be accessed)
filename: file name (up to 8 alphanumeric characters)

REMARKS

- This command is used to upgrade the version of exchange Control Program.
- The command may be run in two forms:

  When running with the exchange in load mode, the Control Program is copied to the primary area of the flash memory, replacing the current Control Program. This type

of copy is made by local connection and does not require running the TR-PRG command.

Connected in operating mode, the program being copied to a temporary memory position.

- The command copies the Control Program (*.bin file) to the flash memory secondary area. The current Control Program is running in the primary area.
- The TR-PRG Command must be run to replace the current Control Program by the version stored in secondary memory.
- Only load mode and local access apply to earlier versions.

TR-PRG Replace Control Program

This command is used to replace the current control program by the version stored in secondary memory.

INPUT FORMAT

```
TR-PRG;
```

REMARKS

- When this command is run, the exchange Boot Program will check the consistency of the contents of the secondary memory. If it is accepted, the contents will be transferred to the primary memory area.
- The software version available in the primary and secondary memory areas is shown by using the command IT-VER

RAIUDAT Commands

COP-RAIUDAT Copy RAIU Subscriber Data File to the BZ-RS

This command is used to transfer the RAIU subscriber data acquired from the 5ESS switch to the specified BZ-RS.

INPUT FORMAT

```
COP-RAIUDAT [: RAIU = xxx-xxx] ;
```

PARAMETERS

RAIU: 5ESS RAIU identification in format sm-raiu#
sm: 5ESS switch module (1..192)
raiu#: RAIU identification in each SM (0..125)

OUTPUT FORMAT

If the RAIU parameter is specified, the subscriber information file of the specified RAIU will be transferred to the connected BZRS.

If the RAIU parameter is not specified, the subscriber information files of all RAIUs connected to the current BZRS will be transferred. The command response is as the following:

```
RAIU = xxx-xxx      Beginning the procedure of subscriber
                          database file transference...
Upload message
Upload status
RAIU = xxx-xxx      Beginning the procedure of subscriber
                          database file transference...
Upload message
Upload status
.      .      .      .
.      .      .      .
RAIU = xxx-xxx      Beginning the procedure of subscriber
                          database file transference...
Upload message
Upload status
```

RAIUENL Commands

CR-RAIUENL Create RAIU Signaling Link

This command is used to create a RAIU signaling link associated with a RAIU interface.

INPUT FORMAT

```
CR-RAIUENL: LNK = xx, SNLT = xx-xx-xx, INT = xx,
                  PRO = xx, NENL = xx-xx, TSNLM = xx-
xx-xxx ;
```

PARAMETERS

LNK: link number (1..32)

SNLT: RAIU signaling terminal number in unit-board-circuit format

- **Unit**: terminal number unit (1..1)
- **Board**: terminal board number (odd positions 1..2)
- **Circuit**: Board signaling circuit number (1..511).

INT: RAIU interface number (1..6)

PRO: signaling protocol

- **RAIU**: signaling protocol to RAIU

NENL: link on RCOMDAC board

- **RCOMDAC**: RCOMDAC board (1..2);
- **PIDB**: link number (1..6).

TSNLM: 5ESS signaling terminal number (to monitor 5ESS signaling terminal) in unit-board-circuit format

- **Unit**: terminal number unit (1..1)
- **Board**: terminal board number (odd positions 1..2)
- **Circuit**: Board signaling circuit number (1..511)

IT-RAIUENL Query RAIU Signaling Link

This command is used to query RAIU interface signaling links.

INPUT FORMAT

```
IT-RAIUENL [ : LNK = xx | INT = x ] ;
```

PARAMETERS

LNK: link number (1..32)

INT: RAIU interface number (1..6)

OUTPUT FORMAT

If no parameter was specified, all created RAIU interface links are displayed in the following format:

```
LNK = xx   INT = xx   SNLT = xx-xx-xxx   NENL = xx-xx
TSNLM = xx-xx-xxx   PRO = xxx   STA = xxx   OPS = xxxx
      .            .     .           .           .
      .
      .            .     .           .           .
      .
LNK = xx   INT = xx   SNLT = xx-xx-xxx   NENL = xx-xx
TSNLM = xx-xx-xxx   PRO = xxx   STA = xxx   OPS = xxxx
```

If parameter LNK was specified, the corresponding RAIU signaling links of each created RAIU interface are displayed. The output format is as shown above.

If parameter INT was specified, only the signaling link of the corresponding RAIU interface is displayed. The output format is as shown above**.**

REMARKS

- The Operating Status parameter (OPS), indicates the status of the RAIU signaling link at the time of running the command IT-RAIUENL; OPS may assume the following states:
- ITV – inactive
- ATV - active
- IATV – under activation
- FAI – failed
- UNII - inactive unit
- STB – Standby

MD-RAIUENL Modify RAIU Signaling Link

This command is used to modify the operating status of a RAIU link.

INPUT FORMAT

```
MD-RAIUENL : LNK = xx,  STA = xxx ;
```

PARAMETERS

LNK: link number (1..32)

STA: signaling link operating status

ATV: Active

ITV: Inactive

SU- RAIUENL Suppress RAIU Signaling Link

This command is used to suppress a RAIU signaling link.

INPUT FORMAT

```
SU-RAIUENL : LNK = xx  ;
```

PARAMETERS

LNK: link number (1..32)

REMARKS

- A signaling link can only be suppressed if its STA (Activity Status) parameter is ITV (inactive).

RAIUINT Commands

CR-RAIUINT Create RAIU Interface

This command is used to create a RAIU interface in a BZ-RS.

INPUT FORMAT

```
CR-RAIUINT:INT = xxx, PS = xx [,LMI = xxx, LMS = xxxx];
```

PARAMETERS

INT: RAIU interface number (1..6)

PS: Peripheral Stage number (1..6)

LMI: Level of allocated channels (in percentage) below which a previously set "Low number of available channels" alarm will be turned off and the non-priority calls will be able to allocate channels.

LMS: Level of allocated channels (in percentage) above which a "Low number of available channels" alarm will be set and the non-priority calls will not be able to allocate channels though reserving the available channels to priority calls.

REMARKS

- The LMI parameter must be less than the LMS parameter.

IT- RAIUINT Query RAIU Interface

This command is used to query RAIU interfaces created in BZ-RS and its links.

INPUT FORMAT

```
IT-RAIUINT  [ : INT = xxx ] ;
```

PARAMETERS

INT: RAIU interface number (1..6)

OUTPUT FORMAT

If parameter INT was not specified, all RAIU interface operating parameters are displayed in the following format:

```
INT = xx   PS = xx   STA = xxx   LMI = xx   LMS = xx
ENL1 = xx  status
ENL2 = xx  status
.     .     .
.     .     .
ENLn = xx  status
.     .     .     .     .     .
.     .     .     .     .     .
INT = xx   PS = xx   STA = xxx   LMI = xx   LMS = xx
ENL1 = xx  status
ENL2 = xx  status
.     .     .
.     .     .
ENLn = xx  status
```

The status indicates if the LNK (link) is in ESA mode.
If parameter INT was specified, only operating parameters of the corresponding RAIU interface are displayed.

MD-RAIUINT Modify RAIU Interface

This command is used to modify interface operating parameters and operating status of a RAIU interface in a BZ-RS.

INPUT FORMAT

```
MD-RAIUINT : INT=xxx {[,STA=xxx] [,LMI=xxx, LMS=xxxx]};
```

PARAMETERS

INT: RAIU interface number (1..6)

STA: Signaling link set operating status:

ATV: active

ITV: inactive

LMI: Level of allocated channels (in percentage) below which a previously set “Low number of available channels” alarm will be turned off and the non-priority calls will be able to allocate channels.

LMS: Level of allocated channels (in percentage) above which a “Low number of available channels” alarm will be set and the

non-priority calls will not be able to allocate channels though reserving the available channels to priority calls.

REMARKS

- The LMI parameter must be less than the LMS parameter.
- To deactivate LMI and LMS make them equal to zero.

SU- RAIUINT Suppress RAIU Interface

This command is used to suppress a RAIU interface in an BZRS

INPUT FORMAT

```
SU- RAIUINT : INT = xxx ;
```

PARAMETERS

INT: RAIU interface number(1..6)

SYNCREF Commands

CR-SYNCREF Create Synchronization Reference

This command is used to program digital trunking for use as the exchange synchronization reference.

INPUT FORMAT

```
CR-SYNCREF : REF = x, BOARD = xx-xx [,TRKINT = xx]
[,TYP = DTR | CLK];
```

PARAMETERS

REF: synchronization reference (1..2)
BOARD: board number in format unit-pos
unit: terminal unit number (1..1)
pos: unit position number (1..2)
TRKINT: trunk interface number (1..16)
TYP: type of synchronization reference extracted
DTR: digital trunk (PCM a 2 Mbit/s)
CLK: external synchronization clock generator

REMARKS

- Reference 1 has the highest priority and reference 2 the lowest
- When no synchronization reference is configured or none is active, the exchange assumes self-synchronized operating mode.

IT-SYNCREF Query Synchronization Reference

This command is used to inquire synchronization references programmed for the exchange.

INPUT FORMAT

```
IT-SYNCREF [ : REF = x ] ;
```

PARAMETERS

REF: synchronization reference (1..2)

OUTPUT FORMAT

If parameter REF was specified, the board with the selected synchronization reference will be displayed in the following format:

```
REF = x   BOARD = xx-xx   TRKINT = xx TYP = xxx AL =
xxx   LR = xxx  IS = xxx
```

If parameter REF was not specified, all synchronization references created in the exchange will be displayed in the following format:

```
REF = x   BOARD = xx-xx   TRKINT = xx TYP = xxx AL =
xxx   LR = xxx  IS = xxx
      .           .           .           .
      .           .           .           .
      .           .           .           .
REF = x   BOARD = xx-xx   TRKINT = xx TYP = xxx AL =
xxx   LR = xxx  IS = xxx
```

REMARKS

- The following messages may be displayed after parameter IS:
  (Fault) - the unit has synchronization trouble
  (Without BOARD) - the board is absent
  (Inactive unit) - the unit is inactive

MD-SYNCREF Modify Synchronization References

This command is used to modify a synchronization reference of the exchange.

INPUT FORMAT

```
MD-SYNCREF : REF = x [,AL = xxx][,LR = xxx][,IS = xxx];
```

PARAMETERS

REF: synchronization reference (1..2)
AL: dropout threshold (1..254) in 2048-Mbit/s bits
LR: return threshold (1..254) in 2048-Mbit/s bits
IS: sampling interval in seconds (1..254)

REMARKS

- The merit figure analysis parameters have been preset and should never be altered without prior consulting LUCENT

TECHNOLOGIES.

- If no parameter was specified, the merit figure will not be included in the reference status analysis.

SU-SYNCREF Suppress Synchronization Reference

This command is used to suppress a synchronization reference of the exchange.

INPUT FORMAT

```
SU-SYNCREF : REF = x ;
```

PARAMETERS

REF: synchronization reference (1..2)

REMARKS

- If the reference to be suppressed is the external reference currently in use by the synchronization system, the exchange will retrieve the highest hierarchy reference from its external reference table. If no other external references have been created or none is active, the exchange will assume self-synchronized operating mode.

CLKSYNC Commands

IT-CLKSYNC Query Synchronization Clock

This command is used to query the exchange synchronization clock(s).

INPUT FORMAT

```
IT-CLKSYNC ;
```

OUTPUT FORMAT

```
CLK=x   UNI=xx  VOLTAGE=xx   MASTER=x  [REF=x ][SYNC]
VA = xx  VB = xx  VB = xx  VC = xx  VD = xx  VE = xx

      .           .           .           .
      .           .           .           .
      .           .           .           .
CLK=x   UNI=xx  VOLTAGE=xx   MASTER=x  [REF=x ][SYNC]
```

REMARKS

- VOLATGE is the voltage value applied to the clock D/A.
- Mnemonic MASTER indicates the clock considered master by the current clock.
- Mnemonic SYNC indicates if the clock is synchronized to the master clock.

- The VOLTAGE, MASTER and SYNC data are irrelevant for a failed clock.
- Mnemonic REF indicates which external reference is in use by the exchange. If there are no external references, the exchange will operate in self-synchronization mode.
- The parameters VA, VB, VC, VD and VE are velues of the digital phased locked loop.

RESET Commands

EX-RESET Reset Unit Processor

This command is used to reset an exchange unit processor.

INPUT FORMAT

```
EX-RESET : UNI = xx ;
```

PARAMETERS

UNI: unit number (1..1)

ROUT Commands

CR-ROUT Create Route

This command is used to create a route.

INPUT FORMAT

```
CR-ROUT : ROUT = xxxxx, NAM = "xxxxxxxx"
[,TYP = PSPN] [,TAM = x]
```

PARAMETERS

ROUT: route ID
S1..S1024: outgoing routes,
NAM: route ID (up to 8 alphanumeric characters in quotes)
TYP: Type of traffic on the route
PSPN: PSTN (Public Switched Telephone Network)
TAM: trunk assignment method (1..4)

REMARKS

- A route is created without trunks, which are included in the route by means of command CR-TRK.
- Programming parameter ROUT for a route is intended to set up a priority rule for trunk seizure, in order to avoid holding by simultaneous seizure.
- Parameter TAM defines the trunk assignment procedure and can assume the following values:
  1 cyclical assignment

2 trunk assignment in order of increasing CIC numbers
3 trunk assignment in order of decreasing CIC numbers

- Command MD-ROUT cannot be applied for altering parameter TYP.

IT-ROUT Query Route

This command is used to display exchange route parameters and trunks.

INPUT FORMAT

```
IT-ROUT [: { ROUT = xxxxx | NTRK }] ;
```

PARAMETERS

ROUT: route ID:

S1..S1024: outgoing routes,

NTRK: indicates that route trunks will not display

OUTPUT FORMAT

If parameter ROUT was specified, the selected route data are displayed in the following format:

```
ROUT=xxxxx  NAM=xxxxxxxx  TAM=x
SSO=xxxxxx TYP=xx&..&xx

EXCPRE=xxxx
TRK=xx-xx-xxx  SNL=xxx  ACS=xxx  STE=xxx
      .            .           .
      .            .           .
      .            .
TRK=xx-xx-xxx  SNL=xxx  ACS=xxx  STE=xxx
```

If parameter ROUT was not displayed, the data of all routes created in the exchange are displayed in the following format:

```
ROUT=xxxxx  NAM=xxxxxxxx TAM=x
SSO=xxxxxx TYP=xx&&..&xx
EXCPRE=xx

TRK=xx-xx-xxx  SNL=xxx  ACS=xxx  STE=xxx
                   .            .            .
                   .            .            .
                   .            .            .
TRK=xx-xx-xxx  SNL=xxx  ACS=xxx  STE=xxx
                             .
                  .
                             .
ROUT=xxxxx  NAM=xxxxxxxx TAM=x
SSO=xxxxxx TYP=xx&&..&xx
EXCPRE=xx
TRK=xx-xx-xxx  SNL=xxx  ACS=xxx  STE=xxx
                   .            .            .
                   .            .            .
TRK=xx-xx-xxx  SNL=xxx  ACS=xxx  STE=xxx
                   .            .            .
                   .            .            .
TRK=xx-xx-xxx  SNL=xxx  ACS=xxx  STE=xxx
```

REMARKS

- A trunk will have operator blocking (BLK) operating status when blocked via command MD-TRKSTE.
- A trunk will have failed (FAL) operating status when the number of consecutive unsuccessful seizures (NCEO) or the percentage of unsuccessful seizures (MPEO) of the trunk exceeds the respective fault supervision threshold for the trunk route. The reason for the trunks being considered failed is displayed on the right of parameter STE, via mnemonics NCEO or MPEO.
- A trunk will have fault blocking (BLF) operating status when automatically blocked by the exchange supervision mechanism.
- A trunk will have external signal blocking (BLE) operating status when it receives an external blocking signal.
- A retained (RET) operating status applies when the trunk assigned to the link is waiting for a disconnection confirmation signal.

MD-ROUT Modify Route

This command is used for altering a route parameters.

INPUT FORMAT

```
MD-ROUT: ROUT=xxxxx [, NAM="xxxxxxxx" ] [, SSO=xxxxxx ]
       [, OPP=xxxx&..&xxxx ] [,TAM=x]
       [, FRNM=x ];
```

PARAMETERS

ROUT: route ID
- **S1..S1024**: outgoing routes,

SSO: Service requested for the route
- **VOI**: voice
- **AUDIO**: data and voice communication
- **NRESTR**: unrestricted 64 kbit/s

NAM: route ID (up to 8 alphanumeric characters in quotes)

TAM: trunk assignment method (1..4)

FRMM: MF signaling exchange noise rejection figure (0..7)
- **0**: maximum rejection (Default)
- **7**: minimum rejection

OPP: route operating parameters:
- **TATE**: indicates that the exchange should consider the answering pulse as first charging pulse in externally multi-metered calls.
- **RAPU**: indicates that the exchange should skip the first

random charging pulse in externally multi-metered calls originating from payphones.
REAN: indicates that timing should be applied by the exchange on answering and re-answering intra-exchange calls with non-charged called subscribers and in outgoing calls on detecting end-of selection signal B5.
NIDENT: indicates that the exchange should not send calling party ID when requested by the forward exchange.
STL: to be specified for satellite routes using number 7 common channel signaling.
SUPE: to be specified for satellite routes requiring the insertion of echo semi-suppressors using number 7 common channel signaling
CNAC: indicates that the exchange must send a National Area Code, together with the origin subscriber identification, when queried by the forehead exchange.

REMARKS

- At least one optional parameter should be specified. Non-specified parameters are not altered.
- To suppress operating parameters programmed for a route, specify OPP = NOPP.
- Operating parameters RAPU, TATE, REAN and NIDENT only apply to outgoing routes.
- Parameter TAM defines the trunk assignment procedure and can assume the following values:
  1. Cyclical assignment
  2. Trunk assignment according to increasing CIC numbers
  3. Trunk assignment according to decreasing CIC numbers
  4. This type of trunk assignment exchanges maintaining signaling relationship create two trunk groups: priority and non priority. The highest DPC numbered exchange control trunks with the highest CIC. The remaining trunks are controlled by the exchange with lowest DPC. The trunk group controlled by each exchange is the call priority group and the trunks not controlled are the non-priority group
- Within a priority group, assignment is based on increasing CIC. In a non priority group, assignment is on a decreasing CIC basis

SU-ROUT Suppress Route

This command is used to suppress a route.

INPUT FORMAT

```
SU-ROUT : ROUT = xxxxx ;
```

PARAMETERS

ROUT: route ID:

S1..S1024: outgoing routes

REMARKS

- A route can only be suppressed when it does not have any created trunk.

LSS Commands

CR-LSS Create Special Local Service

This command is used to create special local services in the exchange.

INPUT FORMAT

```
CR-LSS : SEQ = xxxxxxxxxx, {SUB = [xxxx-]xxxx | SEQ2 =
xx..xx} [, PMO = xx | RCL = xx];
```

PARAMETERS

SEQ: special local service sequence (up to 10 digits)

SUB: subscriber directory number in prefix-subscriber format

Prefix: exchange prefix (3 or 4 digits)

Subscriber: THTU digits (0000..9999)

SEQ2: Digits sequence to be dialed through the switch

PMO: Origin marking point (1..40). Define subscribers groups in the same billing area.

RCL: Route class (1..16)

REMARKS

- BZ-RS exchanges allow creating up to 64 local special services and programming sequences of up to 10 digits in parameter SEQ.
- To program a local special service, the corresponding sequence must be included in the exchange originated routing plan and a terminal or group of terminals must be assigned to the required service. The sequence is included in the originated routing plan via command MD-ORP, specifying the sequence, the type of LSS (special local service), the charging class to be applied for charging call and the terminals classes that can access the service.
- The sequence is associated to the number of the terminal or group of terminals that will receive calls made to the special service, specifying, for each special service sequence, the corresponding subscriber number.
- If more than a single terminal is required for answering calls

addressed to a given special service, a PABX group should be set up for all call-answering terminals and the group number should be associated to the required special service. In these cases, the exchange forwards calls to the PABX group so as to distribute the traffic among terminals.

- If PMO parameter is not specified, the default value is 1.

IT-LSS Query Special Local Service

This command is used to display special local services set up in the exchange

INPUT FORMAT

```
IT-LSS [ : SEQ = xxxxxxxxxx ] ;
```

PARAMETERS

SEQ: special local services sequence (up to 10 digits)

OUTPUT FORMAT

If parameter SEQ is specified, the corresponding subscriber (or the destiny sequence) is displayed in the following format:

```
SEQ = xxx   SUB (or SEQ2) = xxxx PMO = xx (or RCL = xx)
```

If parameter SEQ is not specified, all sequences set up in the exchange will be displayed with their respective subscribers (or the destiny sequence) in the following format:

```
SEQ = xxx   SUB (or SEQ2) = xxxx PMO = xx (or RCL = xx)
      .            .
      .            .
      .            .
SEQ = xxx   SUB (or SEQ2) = xxxx PMO = xx (or RCL = xx)
```

REMARKS

- The SUB exit format can be changed through the option menu, exit format submenu, in the main window of the CSR program.

SU-LSS Suppress Special Local Service

This command is used to suppress special local services in the exchange

INPUT FORMAT

```
SU-LSS : SEQ = xxxxxxxxxx [,PMO = xx | RCL = xx];
```

PARAMETERS

SEQ: special local service sequence (up to 10 digits)

PMO: Origin marking point (1..40). Define subscribers groups in the same billing area

RCL: Route class (1..16)

REMARKS

- If PMO parameter is not specified, the default value is 1.

SNLR2 Commands

IT-SNLR2 Query R2 Signaling

This command is used to display the meaning of multifrequency signals used for inter-register signaling.

INPUT FORMAT

```
IT-SNLR2;
```

OUTPUT FORMAT

```
Group A:    SND = xx  SA1 = xx  BGR = xx  AGC = xx
                  AIS = xx  SAC = xx  SE1 = xx  SE2 =
xx
            SE3 = xx  SIT = xx  SIR = xx  ESS = xx
            ISC = xx
Group B:    ISL = xx  LOC = xx  LNC = xx  BGC = xx
                  LWC = xx  FRC = xx  LVC = xx  LOS =
xx
```

MD-SNLR2 Modify R2 Signaling

This command is used to change the meaning of multifrequency signals used for inter-register signaling

INPUT FORMAT

```
MD-SNLR2 : {[SND=xx,] [SA1=xx,] [BGR=xx,] [AGC=xx,]
                  [AIS=xx,] [SAC=xx,] [SE1=xx,]
[SE2=xx,]               [SE3=xx,] [SIT=xx,] [SIR=xx,]
[ESS=xx,]
                  [ISC=xx,] [ISL=xx,] [LOC=xx,]
[LNC=xx,]
                  [BGC=xx,] [LWC=xx,] [FRC=xx,]
[LVC=xx,]
                  [LOS=xx] | [INI]}
```

PARAMETERS

SND: request sending next digit
SA1: request sending first digit or informing need for echo suppressor at destination
BGR: transfer to B-group signals
AGC: A-group signal informing congestion
AIS: request sending calling party ID
SAC: request sending category subscriber A

SE2: request sending digit n-2
SE3: request sending digit n-3
SE1: request sending digit n-1
SIT: request sending international transit exchange indication
SIR: request sending originating international register indication
ESS: request information on need for inserting echo semi-suppressor at destination
ISC: congestion at international exchange
ISL: idle subscriber line, with charging
LOC: busy subscriber line
LNC: changed number subscriber line
LWC: idle subscriber line, no charging
FRC: idle subscriber, with charging, under called subscriber holding control
LVC: vacant level or number
LOS: out of service line
BGC: B-group signal informing congestion
INI: Put the R2 signals parameters in their default values

SSV Commands

IP-SSV

Query Supplementary Service Programming

This command is used to display the subscriber supplementary services programmed in the exchange.

INPUT FORMAT

```
IP-SSV [ : SSV = xxxxxx | SUB = [xxxx-]xxxx ] ;
```

PARAMETERS

SUB: subscriber directory number in prefix-subscriber format
- **Prefix**: exchange prefix (1 to 4 digits)
- **Subscriber**: THTU digits (0000..9999)

SSV: supplementary services
- **CAID**: calling party ID
- **PRIORI**: Subscriber with priority

OUTPUT FORMAT

If parameter SUB was specified, the selected user programmed supplementary services are displayed in the following format:

```
SUB = xxxx-xxxx  SSV = xxxxxx&..&xxxxxx
```

If parameter SSV was specified, all subscribers with the selected supplementary service are displayed in the following format:

```
SSV=xxxxxxx SUB=xxxx-xxxx xxxx-xxxx xxxx-xxxx xxxx-xxxx
```

```
                                        .      .
                                        .      .
                              xxxx-xxxx xxxx-xxxx xxxx-xxxx xxxx-
xxxx
```

If no parameter was specified, all subscribers programmed for supplementary services are displayed in the following format:

```
SUB = xxxx-xxxx    SSV = xxxxxx&..&xxxxxx
                   .      .
                   .      .
SUB = xxxx-xxxx    SSV = xxxxxx&..&xxxxxx
```

PR-SSV Program Supplementary Services

This command is used to program subscriber supplementary services in the exchange.

INPUT FORMAT

```
PR-SSV:SUB=xxxx-xxxx&..&xxxx-xxxx, SSV=xxxxxx&..&xxxxxx
       ;
```

PARAMETERS

SUB: subscriber directory number in prefix-subscriber format
- **Prefix**: exchange prefix (3 or 4 digits)
- **Subscriber**: THTU digits (0000..9999)

SSV: supplementary services
- **CAID**: calling party ID
- **PRIORI**: Subscriber with priority

RP-SSV Remove Supplementary Service Programming

This command is used to remove subscriber supplementary services programming in the exchange.

INPUT FORMAT

```
RP-SSV : SUB=[xxxx-]xxxx&..&xxxx-xxxx,
SSV=xxxxxx&..&xxxxxx;
```

PARAMETERS

SUB: subscriber directory number in prefix-subscriber format
- **Prefix**: exchange prefix (3 or 4 digits)
- **Subscriber**: THTU digits (0000..9999)

SSV: supplementary services:
- **CAID**: calling party ID

PRIORI: Subscriber with priority

REMARKS

- To delete all supplementary services of a subscriber(s), specify SSV=WSSV.

TER Commands

CR-TER Create Terminal

This command is used to create all Central Stage terminals (CS side), connected to the Peripheral Stages (PS side) via RAIU signaling protocol.

INPUT FORMAT

```
CR-TER : TER=xx-xx-xx&..&xx-xx-xx, {PS=xx | CIC=xxx};
```

PARAMETERS

TER: terminal number in unit-board-circuit format:

Unit: terminal unit number (1..1)

Board: terminal board number (1..2)

Circuit: board circuit number (1..511)

PS: Peripheral Stage number (1..6)

CIC: sequence number in a same 2048 kbps system. The rule for creating CICs is

First system: 1..31

Second system: 33..63

. .

. .

REMARKS

- For RAIU terminal definitions, the TER parameter shall accept values between 1 and 511 for the CIR component.
- Annex A shows the correspondence between CIC and link/channel numbering formats.

IT-TER Query Terminal

This command is used to display all exchange terminal, either with created or non-created operating status.

INPUT FORMAT

```
IT-TER [ : { TER = xx-xx-xxx | STE = xxx | PS = xx } ];
```

PARAMETERS

TER: terminal number in unit-board-circuit format:

Unit: terminal unit number (1..1)

Board: terminal board number (1..2)

Circuit: board circuit number (1..511)
STE: terminal operating status
NCR: non-created
BLK: blocked
SRV: in service
PS: Peripheral Stage number (1..6)

OUTPUT FORMAT

If parameter TER was specified, the number of the terminal created will be displayed, as well as the operating status, in the following format:

```
TER = xx-xx-xxx  STE = xxx  PS = xx  CIC = xxx
```

If parameter STE was specified, all terminals created in the exchange meeting the given operating status will be displayed in the following format:

```
STE = xxx
TER = xx-xx-xxx  xx-xx-xxx  xx-xx-xxx  xx-xx-xxx
          .          .          .         .
          .          .          .         .
          .          .          .         .
        xx-xx-xxx  xx-xx-xxx  xx-xx-xxx  xx-xx-xxx
```

If parameter PS was specified, all terminal created in this PS will be displayed, as well as the assigned trunk circuit ID code and the terminal operating status, in the following format:

```
TER = xx-xx-xxx   STE = xxx   PS = xx   CIC = xxx
              .                .                .
              .
              .                .                .
              .
              .                .                .
              .
TER = xx-xx-xxx   STE = xxx   PS = xx   CIC = xxx
```

If no parameter was specified, all terminals created in the exchange, as well as its circuit gain and operating status, will be displayed in the following format:

```
TER = xx-xx-xxx   STE = xxx   PS = xx   CIC = xxx
      .                            .
      .                            .
      .                            .
TER = xx-xx-xxx   STE = xxx   PS = xx   CIC = xxx
```

REMARKS

- For RAIU terminal definitions, the TER parameter has values between 1 and 511 for the CIR component.
- The STE = SRV OSC indicate terminal in service and in use

MD-TER Modify Terminal

This command is used to modify a terminal gain.

INPUT FORMAT

```
MD-TER : TER = xx-xx-xx , SCG = xx;
```

PARAMETERS

TER: terminal number in unit-board-circuit format:
Unit: terminal unit number (1..1)
Board: terminal board number (1..2)
Circuit: board circuit number (1..511)
SCG: subscriber circuit gain (1..15)

REMARKS

- The gain values assigned to subscriber circuits are listed in the following table:

Zb	GAIN	Input(Rx)	Output (Tx)
Zbc	1	0 dBr	-3 dBr
	2	0 dBr	-5 dBr
	3	**0 dBr**	**-7 dBr**
	4	-2 dBr	-5 dBr
	5	+3 dBr	-7 dBr
Zbp	6	0 dBr	-3 dBr
	7	0 dBr	-5 dBr
	8	0 dBr	-7 dBr
	9	-2 dBr	-5 dBr
	10	+3 dBr	-7 dBr
Zbt	11	0 dBr	-3 dBr
	12	0 dBr	-5 dBr
	13	0 dBr	-7 dBr
	14	-2 dBr	-5 dBr
	15	+3 dBr	-7 dBr

Table 5-5 - Gain values assigned to subscriber circuits

where: Zbc - common line impedance
Zbp - coil loaded line impedance
Zbt - test impedance

- The lines in the table in **bold type** stand for the factory gain settings.
- For RAIU terminal definitions, the TER parameter shall accept values between 1 and 448 for the CIR component.

SU-TER Suppress Terminal

This command is used to suppress a terminal in exchanges using RAIU interfaces.

INPUT FORMAT

```
SU-TER : TER = xx-xx-xx& ..&xx-xx-xx;
```

PARAMETERS

TER: terminal number in unit-board-circuit format:
- **Unit**: terminal unit number (1..1)
- **Board**: terminal board number (1..2)
- **Circuit**: board circuit number (1..511)

REMARKS

- For RAIU terminal definitions, the TER parameter shall accept values between 1 and 448 for the CIR component.
- The terminal to be supressed must be in blocked state (see MD-TERSTE).

MD-TERSTE Modify Terminal Status

This command is used to alter a terminal operating status.

INPUT FORMAT

```
MD-TERSTE : TER = xx-xx-xx, STE = xxx ;
```

PARAMETERS

TER: terminal number in unit-board-circuit format:
- **Unit**: terminal unit number (1..1)
- **Board**: terminal board number (1..2)
- **Circuit**: board circuit number (1..511)

STE: terminal operating status
- **SRV**: in service
- **BLK**: blocked

REMARKS

- For RAIU terminal definitions, the TER parameter shall accept values between 1 and 448 for the CIR component.

TON Commands

IT-TON Query Exchange Control Tones

This command is used to display the cadence values of the exchange control tones.

INPUT FORMAT

```
IT-TON ;
```

OUTPUT FORMAT

All exchange control tones are displayed with their values of cadence.

```
RC    = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
DT    = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
CWT   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
PST   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
BT    = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
UNT   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
AOT   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
CCS   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
SRC   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
SDT   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
PPAT  = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
CGTT  = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
IOT   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
CTI   = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
TCCE  = xxxx-xxxx-xxxx-xxxx     FREQ = xxxxx
```

REMARKS

- Each tone has the following meaning, with the indicated default cadence value:

RC - Ringing current { 1000, 4000, 1000, 4000 }

FREQ { HZ25 }

DT - Dial tone { 0000, 0000, 00000, 00000 }

FREQ { HZ425 }

CWT - Call waiting warning tone { 0050, 0250, 0050, 9000 }

FREQ { HZ425 }

PST - Programming warning tone { 0100, 0100, 0100, 0100 }

FREQ { HZ425 }

BT - Busy tone { 0250, 0250, 0250, 0250 } FREQ { HZ425 }

UNT - Inaccessible number tone { 0250, 0250, 0750, 0250 }

FREQ { HZ425 }

AOT - Accepted operation tone (acknowledgement) { 0100, 0100,

0250, 0100 } { HZ425 }

CCS - Ringback tone { 1000, 4000, 1000, 4000 } { HZ425}

SRC - Special ringing current { 0350, 0300, 0350, 4000 } { HZ25 }

SDT - Special dial tone { 0950, 0050, 0950, 0050 } { HZ425 }

PPAT - Prepaid alert tone { 0100, 0100, 0100, 0100 } { HZ425 }

CGTT - Congestion tone { 0500, 0500, 0500, 0500 } { HZ425 }

IOT - Incorrect operation tone { 0100, 0100, 0100, 0100 } { HZ425 }

CTI - Initial ringing current { 0200, 0000, 0000, 0000} { HZ25 }

TCCE - Call Waiting Control Tone {0400, 5000, 0400, 5000}{ HZ425}

- When the cadence is { 0, 0, 0, 0 }, the tone is continuous.
- FREQ is the tone frequency and can be:

HZ400	- 400 Hertz
HZ425	- 425 Hertz
HZ440	- 440 Hertz
HZ480	- 480 Hertz
HZ350e440	- 350 and 440 Hertz
HZ392e417	- 392 and 417 Hertz
HZ440e480	- 440 and 480 Hertz
HZ480e620	- 420 and 620 Hertz
HZ25	- 25 Hertz

MD-TON Modify Exchange Control Tones

This command is used to modify the cadences of the exchange control tones.

INPUT FORMAT

```
MD-TON: [TON=xxxx, CAD=xxxxx-xxxxx-xxxxx-xxxxx, FREQ =
xxxxx ]|[INI];
```

PARAMETERS

TON: Exchange control tones

DT: Dial tone

CWT: Call waiting warning tone

PST: Programming warning tone

BT: Busy tone
UNT: Inaccessible number tone
AOT: Accepted operation tone (confirmation)
CCS: Ringback tone
SRC: Special ringing current
SDT: Special dial tone
PPAT: Prepaid alert tone
CGTT: Congestion tone
IOT: Incorrect operation tone
CTI: Inicial ringing current
TCCE

CAD: value of the cadence of control tones, in milliseconds (0..10000)

FREQ: frequency of the control tones
HZ25: 25 Hertz
HZ400: 400 Hertz
HZ425: 425 Hertz
HZ440: 440 Hertz
HZ480: 480 Hertz
HZ350e440: 350 and 440 Hertz
HZ392e417: 392 and 417 Hertz
HZ440e480: 440 and 480 Hertz
HZ480e620: 480 and 620 Hertz

INI: Put the switch control tones in their default values

REMARKS

- To obtain a continuous tone, specify cadence as { 0, 0, 0, 0 };
- The Tone current (CT) will be automaticaly set by the command MD-CTRY (Country selection)
- The defaults of cadences are:

	CCS - {1000, 4000, 1000, 4000}
DT - { 0, 0, 0, 0 }	SRC - { 350, 300, 350, 4000 }
CWT - { 50, 250, 50, 5000 }	SDT - { 950, 50, 950, 50 }
PST - { 100, 100, 100, 100 }	PPAT - { 100, 100, 100, 100 }
BT - { 250, 250, 250, 250 }	CGTT - { 250, 250, 250, 250 }
UNT - { 250, 250, 750, 250 }	IOT - { 250, 250, 250, 250 }
AOT - { 250, 250, 250, 2000 }	CTI - { 200, 0, 0, 0 }

NDPRE Commands

MD-NDPRE Modify Number of Digits of the Exchange Prefix

This command is used to modify the number of digits that specify

the exchange prefix of the subscriber directory number.

INPUT FORMAT

```
MD-NDPRE : NDPRE = x ;
```

PARAMETERS

NDPRE: number of digits (1..4)

REMARKS

- The number of digits is used during the processing of the COP-RAIUDAT command. The BZ-RS interprets the directory numbers transmitted during the execution of the COP-RAIUDAT command considering the current number of digits.
- The default (factory set) value is 3.
- If the command "MD EXCOPP OPP=ESA NOAC" is used in Configuration Mode (COP-RAIUDAT), the SW won´t use the parameter NDPRE and the format of prefix will be EXCPRE=XXXXXX whitout "-".

IT-NDPRE Query Number of Digits of the Exchange Prefix

This command is used to query the number of digits that specify the exchange prefix of the subscriber directory number.

INPUT FORMAT

```
IT-NDPRE ;
```

OUTPUT FORMAT

```
   NDPRE = x
```

CPCT Commands

CR-CPCT Create PABX Group

This command is used to include subscribers in a PABX group.

INPUT FORMAT

```
CR-CPCT : KEY = [xxxx-]xxxx, SUB = [xxxx-]xxxx&..&xxxx;
```

PARAMETERS

KEY: subscriber directory number (the PABX key number), in the prefix-subscriber format
SUB: subscriber directory number to be included in the PABX group, in the prefix-subscriber format
Prefix: exchange prefix (3 or 4 digits)
Subscriber: THTU digits (0000..9999)

REMARKS

- The PABX group is created when the first subscriber is included in the group.
- To include subscribers in an existing PABX group, just specify the subscribers to be included.
- A subscriber can only be included in a PABX group when in the fully blocked (BLK) operating status.
- Every subscriber in the PABX group is created with two-way traffic and active numbering.
- Up to 256 PABX groups can be created.
- Each PABX group may be created with a maximum of 200 subscribers.
- A PABX group is created with uniform sequential hunting.
- When the PABX group is programmed for uniform sequential hunting, the hunt for an idle subscriber in the group will be carried out in order of the numbering sequence of subscribers, with no preference being assigned.

IT-CPCT Query PABX Group

This command is used to display PABX groups created in the exchange.

INPUT FORMAT

```
IT-CPCT [: KEY = [xxxx-]xxxx] ;
```

PARAMETERS

KEY: PABX group key subscriber directory number, in the prefix-subscriber format

Prefix: exchange prefix (3 or 4 digits)

Subscriber: THTU digits (0000..9999)

OUTPT FORMAT

If the KEY parameter is specified, the PABX group billing type and subscribers with traffic direction will be displayed in the following format:

```
KEY=XXXX-XXXX  CHT=XXXX   TSG=XXX
    SUB=XXXX-XXXX(DIR-NUM)  SUB=XXXX-XXXX(DIR-NUM)
    ... ... ...
    SUB=XXXX-XXXX(DIR-NUM)  SUB=XXXX-XXXX(DIR-NUM)
```

If the KEY parameter is not specified, all PABX groups created in the exchange will be displayed in the following format:

```
KEY=XXXX-XXXX  CHT=XXXX   TSG=XXX
    SUB=XXXX-XXXX(DIR-NUM)  SUB=XXXX-XXXX(DIR-NUM)
    ... ... ...
    SUB=XXXX-XXXX(DIR-NUM)  SUB=XXXX-XXXX(DIR-NUM)
```

```
. . .
KEY=XXXX-XXXX  CHT=XXXX   TSG=XXX
     SUB=XXXX-XXXX(DIR-NUM)   SUB=XXXX-XXXX(DIR-NUM)
     ... ... ...
     SUB=XXXX-XXXX(DIR-NUM)   SUB=XXXX-XXXX(DIR-NUM)
```

The DIR characters in parenthesis above correspond to the direction of traffic and can be: OUT, IN or BID. Characters NUM indicate whether the numbering of this subscriber is active (numbered terminal) or inactive (unnumbered terminal) and can be ATV or ITV.

Note: Information regarding hunting groups is not acquired automatically. This information must be provisioned and updated manually by the operator.

MD-CPCT Modify PABX Group

This command is used to modify the parameters of a PABX group.

INPUT FORMAT

```
MD-CPCT : KEY = [xxxx-]xxxx
          {[CHT=XXX][,TSG=XXX]|
           SUB=[xxxx-]xxxx,[DIR=XXX][,NUM=XXX]} ;
```

PARAMETERS

KEY: PABX group key subscriber directory number, in the prefix-subscriber format

Prefix: exchange prefix (3 or 4 digits)

Subscriber: THTU digits (0000..9999)

CHT: Billing type identification. Possible values:

CHASUB (charging by subscriber)

CHAKEY (charging by key number)

TSG: Type of group hunting. Possible values:

SPR (preferred sequence)

SEU (uniform sequence)

AGR (general access)

KAN (unnumbered access key)

CAP (general extension pick up)

SUB: Subscriber directory number, in the prefix-subscriber format.

DIR: Traffic direction. Possible values:

OUT (outgoing traffic)

IN (incoming traffic)

BID (two-way traffic)

NUM: Numbering.

ATV (active - numbered terminal)
ITV (inactive – unnumbered terminal)

REMARKS

- Hunting extensions in a PABX group can be carried out in five manners:
  Uniform Sequence Hunting: when accessed through the key number a hunting algorithm is run to seek an idle terminal subsequent to the terminal most recently assigned for taking a call; when accessed through a subscriber number only the terminal with this number is accessed;
  Preferred Sequence Hunting: when accessed through the key number hunting always starts from the key terminal; when accessed by a subscriber number only the terminal with this number is accessed;
  General Access: when accessed by the key number or by a subscriber number, the hunting algorithm is run to seek an idle terminal subsequent to the terminal most recently assigned for taking a call;
  Unnumbered Access Key: when accessed by the key number a hunting algorithm is run only on the unnumbered terminals (NUM=ITV), beginning with an idle terminal subsequent to the terminal most recently assigned for taking a call; when the access is established by a subscriber number, all idle terminals will be accessed by the same hunting algorithm;
  General Extension Pick Up: when a call is directed to an extension of the Virtual PABX Group, it can be picked up and answered from another extension of the Virtual PABX Group.
- CHT parameter and TSG relate to the PABX group.
- DIR parameter sets the traffic direction for each PABX Group subscriber.
- NUM parameter establishes whether the subscriber directory number should be considered. If the ITV argument is provided, this subscriber will be handled as an unnumbered subscriber. It should be used jointly with the CAN (Unnumbered Access KEY) type of hunting.

SU-CPCT Suppress PABX Group

This command is used to suppress PABX group subscribers.

INPUT FORMAT

```
SU-CPCT : KEY = [xxxx-]xxxx, SUB=[xxxx-]xxxx&..&xxxx ;
```

PARAMETERS

KEY: PABX group key subscriber directory number, in the

prefix-subscriber format
Prefix: exchange prefix (3 or 4 digits)
Subscriber: THTU digits (0000..9999)
SUB: Subscriber directory number, in the prefix-subscriber format.

REMARKS

- A PABX Group is suppressed when its last subscriber is suppressed.
- PABX Group subscriber can only be suppressed when in the fully blocked (BLT) operating status.

VER Commands

IT-VER Query Version of CSR

This command is used to display the versions of SGP, CSR, DLL, Communication Language and Control Programs of the exchange units.

INPUT FORMAT

```
IT-VER [ : UNI = xx ] ;
```

PARAMETERS

UNI: unit number (1..1)

OUTPUT FORMAT

If parameter UNI was specified, the version of CSR, DLL, Communication Language (LIN) and Control Program of the selected unit are listed in the following format:

SCS96007XX

CSR xxxxxxxxxx

DLL xxxxxxxxxx

Customer:

Location:

Obs:

Date: xx-xx-xx

Active capabilities:

xxx..xxx..xxx..xxx..xxx

.

.

xxx..xxx..xxx..xxx..xxx

```
UNI = 01    LPN 109232249.xxx.xxx
BACKUP = LPN 109232256.xxx.xxx
```

6 Alarms

Overview

Purpose This chapter presents a description of the alarms along with the reason for each occurrence.

Alarm Records at the Switch

The BZ-RS Switches are capable of detecting and recording several types of alarms, as listed in the coming items of this chapter.

Alarms detected in each switch unit are recorded on the Event Log and kept on a nonvolatile memory. The switches are fitted with a capacity to store up to 200 records. When the Event Log reaches its maximum capacity, the new records are written in place of the oldest records.

CSR Alarm Panel

The BZ-RS Switch Supervision Centers (CSR) have the facility to supervise the presence of alarms via the CSR alarm panel

This panel is located on the upper central portion of the CSR working screen. Whenever the CSR is connected to a switch, it reports the presence of alarms and its urgency levels. The CSR, then, signals to the operator the alarm presence in the connected switches via the panel.

□

Alarm Signaling

The alarm records detected in the switch are automatically sent to the CSR in case the switch is connected to a CSR or it is programmed to make an alarm call to the CSR and the CSR is enabled to receive an alarm call. The attempt to generate a call to the CSR occurs according to the programmed timeout (1 to 60 seconds), by means of the MD-EXCTME command.

The CSR is enabled to receive alarms from the switch by means of the ENA-ALARM (Enable Alarm Receiving from Switch) command and is disabled by means of the DSB-ALARM (Disable Alarm Receiving from Switch) command. The following example illustrates the use of these commands:

```
<ENA ALARM LOC = "LUCENT01"
OK

<DSB ALARM LOC = "LUCENT01"
OK
```

The automatic alarm transmission from the switch to the CSR will occur in the following instances:

- Detection of urgent or major alarms in the switch;
- When the number of alarms recorded on a unit and not sent to the CSR reaches 80% of the unit maximum alarm recording capacity (for basic-structure switches).

In order to have automatic alarm transmission, the CR-CSRCAL (Create Calling Number to CSR) command, which is used to program the switch to make an alarm call to the CSR, should be used. The programming is made by specifying the expedition mode and the sequence of digits to be dialed by the switch to make alarm calls to the CSR. The following example demonstrates how this command is used:

```
<CR-CSRCAL SEQ = 0382213987
OK
```

In order for the ENA ALARM command to operate, the communication with the CSR must be terminated and then established again, or execute the command prior to start the communication with the switch. This information will be sent to the switch when the communication is being established.

In order to set up an alarm call, the switch checks whether it is already in communication with a CSR enabled to receive alarms; otherwise, it tries to establish the communication by making a call to the CSR call number.

The alarm call is automatically answered by the CSR. The communication will not be established on the following instances:

- Error in the CSR configured password for accessing the switch;
- Incompatibility between the CSR and the switch control program versions;
- CSR not enabled to receive calls.

The switch data directory should already exist when the urgent alarm reception is started.

The event logs kept on the CSR present a capacity limited only by the available disk area.

The CSR signals the reception of an urgent or major alarm record by showing the alarm button. The alarm signaling is only stopped when an operator makes the urgent alarm inquiry described in the following item.

The alarm record transfer will be interrupted in case a failure occurs on the disk recording.

Alarm Inquiry

The IT-ALARM command inquires the alarms currently present on the switch. The command can be executed via any CSR and requires communication with a switch is established. This command provides the identification of the alarm type and alarm urgency level of each switch unit.

The urgency level to be inquired can be specified via the ASE (Urgency Level) parameter or by selecting the respective button of the CSR alarm panel with the mouse. Refer to Chapter 5, Detailed Command Description, in order to obtain more details on this command.

The IT-URGALARM command allows the urgent alarms received from the switch to be inquired. The command can be executed via any CSR via command line or pressing the alarm button.

□

Event Log Inquiry

The IT-EXCHST (Inquiry Switch Event Log) command allows the alarms and occurrences stored on the Event Log of the switch to be inquired. The IT-CSRHST (Inquiry Switch Event Log stored on CSR) command allows the switch occurrences and alarms stored on the CSR to be inquired.

By means of remote access, the BZ-RS Switch allows the log from one or more switches to be received by CSR in other location. For such, the ENA-ALARM command has to be enabled and the switch sending the alarms needs to have a connection to CSR (or the number of the CSR modem programmed, in the case of a dial up link). All urgent and major alarms will, this way, be sent to the destination CSR, generating two files concurrently. The ALAURG.DAT file on the CSR directory containing the alarm message remotely sent, and the HSTCSR.DAT file on the switch location directory containing the remote switch CSR log.

The RV-EXCHST command allows the event logs of the switch to be removed via a remote access.

The RV-CSRHST command allows the occurrences and alarms stored on the CSR to be removed.

□

External Failure Alarms

The BZ-RS Switches are capable of supervising failures on equipment not incorporated into the switch through the sensors located on the MXTS boards.

This equipment is usually an integral part of the required infrastructure for the switch operation, such as: air conditioning, rectifier, transmission, etc.

Failures on external equipment are handled similarly to the switch internal alarms, and are recorded on the Event Log and signaled on the alarm panel.

External alarm detection points should be created by means of the CR-EXTALARM command, specifying the failure urgency level and, optionally, the period of time, in seconds, the switch should wait prior to recording an external alarm detection. The following example illustrates the use of this command.

```
<CR EXTALARM PDT = 01-01-01, ASE = UR, TME = 5
OK
```

The external failure detection point can be suppressed by means of the SU-EXTALARM command. The external failure detection points at the switch can be inquired by means of the IT-EXTALARM command.

External Alarm Messages

The BZ-RS Switches allow indication messages to be associated for each external alarm detection point. This operation is performed by means of the PR-EXTALARM (External Alarm Message Program) command.

The indication message association for external alarms is a CSR operation. For more details, refer to Chapter 5, Detailed Command Description.

□

Failure Indication

The indication of a given failure via CSR is accompanied by the following information:

- Failure occurrence date and time;
- Unit which detected the alarm;
- Failure classification.

The following pattern is used on the failure indication so as to identify the various switch devices:

TER = xx-xx-xx: Identifies the terminal. The first argument identifies the unit where the terminal is present, the second argument identifies the board position in the shelf, and the third argument indicates the terminal circuit on the board.

TRK = xx-xx-xx: Identifies the trunk. The first argument identifies the unit where the trunk is present, the second argument identifies the board position in the shelf, and the third argument indicates the trunk circuit on the board.

MFC = xx-xx-xx: Identifies the MFC receiver/sender. The first argument identifies the unit where the MFC receiver/sender is present, the second argument identifies the board position in the shelf, and the third argument indicates the MFC receiver/sender circuit on the board.

BOARD = xx-xx: Identifies the board. The first argument identifies the unit where the board is present and the second argument identifies the board position in the shelf.

ROUT = xxx: Identifies the route.

UNI = xx: Identifies the unit

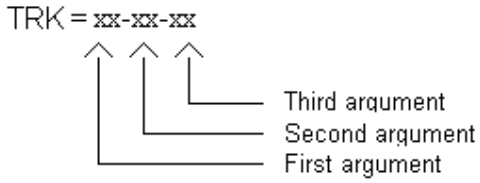
REF = xx: Identifies the synchronization reference.

CLK = xx: Identifies the synchronization clock.

JMA = xx-xx-xx: Identifies the announcement machine trunk. The first argument identifies the unit where the trunk is present, the second argument identifies the board position in the shelf, and the third argument indicates the announcement machine trunk number on the respective board.

PDT = xx-xx-xx: Identifies the external alarm detection point. The first argument identifies the u t where the detection point is present, the second argument iden ies the board position in the shelf, and the third argument indic es the detection point circuit number on the respective board.

NOTE The example below illustrates the arguments definition:



□

Urgent Failures

The urgent failures indicated on the BZ-RS Switch are the following:

Halted Calendar

a. Definition: Indicates that the switch calendar is halted.

b. Probable Causes: Failure on the CPU of the unit generating the alarm.

c. Corrective Actions: Set the calendar again and check whether it continues with problem. If so, replace the CPU and verify again.

Invalid Board BOARD=xx-xx

a. Definition: Indicates that the xx board does not match with what is specified in the switch configuration file.

b. Probable Causes: The xx board is in the wrong position;

There is an error in the switch configuration.

c. Corrective Actions: Check whether the board was inserted in the wrong position. If so, move it to the proper position.

In case the error is on the configuration, program the board again.

Route with trunks out of service ROUT=xx (xxx%)

a. Definition: Indicates that the number of out-of-service trunks on the xx route has exceeded the limit stipulated for the generation of urgent alarm. It also indicates the percentage of route trunks that are out of service.

b. Probable Causes: Removal of the xx route trunk boards.

Excessive number of blocked trunks on the xx route.

Failure on xx route trunks.

c. Corrective Actions: Replace the xx route trunk boards.

Identify, via the IT-TRK command, which trunks are in failure or blocked.

Unblock the trunks blocked by failure. For such, block via command the trunks blocked by failure and then unblock them via command.

If the above operation fails to solve the problem, replace the board presenting failures.

Failing Trunk in Service TRK=xx-xx-xx

a. Definition: Indicates that the xx-xx-xx trunk, despite being in failure, remains in service, as the number of failing trunks on the route to which the xx-xx-xx trunk belongs reached the PTOS limit ..

b. Probable Causes: Failure on the trunk.

c. Corrective Actions: Check the cause for the alarm. In case of trunk failure, replace the board presenting problems as described in the replacement procedures for each board.

Switch with MFC senders/receivers out of service (xx%)

a. Definition: Indicates the percentage of out-of-service MFC senders and receivers at the switch. It reports that the number of out-of-service senders and receivers reached the limit for generating the urgent alarm.

b. Probable Causes: MFC blocking by the operator.

c. Corrective Actions: Check, via the IT-MFC command, which senders/receivers are blocked or failing.

The MFC senders/receivers blocked by failure can be unblocked. For such, block these MFC senders/receivers via command and then unblock them via command.

Unit with DTMF detectors out of service (xx%)

a. Definition: Indicates the percentage of out-of-service DTMF detectors. It reports that the number of out-of-service DTMF detectors reached the limit for generating the urgent alarm.

b. Probable Causes: DTMF blocking by the operator.

c. Corrective Actions: Check, via the IT-DTMF command, which detectors are blocked or failing.

The DTMF detectors blocked by failure can be unblocked. For such, block the DTMF detectors via command, and then unblock them via command.

Faulty MFC in service MFC=xx-xx-xx

a. Definition: Indicates that the xx-xx-xx MFC sender/receiver, despite being in failure, remains in service.

b. Probable Causes: Problems on the xx-xx-xx MFC sender/receiver.

c. Corrective Actions: Replacement of the faulty board.

No receiving digital signal (2MR) BOARD=xx-xx

a. Definition: Indicates that the xx-xx MXTS board receiver is not receiving a signal from the remote switch.

b. Probable Causes: Problems on the signal from the remote switch.

c. Corrective Actions: Check cabling.

Check if signal is present on the trunk input.

Receiving the alarm indication signal (AIS) BOARD=xx-xx

a. Definition: Indicates that the remote switch has problems with the received signal.

b. Probable Causes: Alignment loss of the signal received in the remote switch.

No signal receiving at the remote switch.

Excessive error rate on the signal received by the remote switch.

Problems on cabling.

c. Corrective Actions: Check the BZ-RS Switch Tx cable.

Check the transmission means between the switches.

Loss of frame alignment (ALQ) BOARD=xx-xx

a. Definition: Indicates that the BZ-RS Switch lost the frame alignment

b. Probable Causes: Synchronization problems between the BZ-RS and the remote switch.

c. Corrective Actions: Check if there is any synchronization

problem with the remote switch.

Loss of multi-frame alignment (ALM) BOARD=xx-xx

a. Definition: Indicates that the BZ-RS Switch lost the multiframe alignment of the received signal.

b. Probable Causes: Synchronization problems between the BZ-RS and the remote switch.

c. Corrective Actions: Check if there is any synchronization problem with the remote switch.

Loss of remote frame alignment (ALRQ) BOARD=xx-xx

a. Definition: Indicates that the remote switch lost the frame alignment.

b. Probable Causes: Synchronization problems between the BZ-RS and the remote switch.

c. Corrective Actions: Check if there is any synchronization problem with the remote switch.

Loss of remote multi-frame alignment (ALRM) BOARD=xx-xx

a. Definition: Indicates that the remote switch lost the multiframe alignment.

b. Probable Causes: Synchronization problems between the supervised switch and the remote switch.

c. Corrective Actions: Check if there is any synchronization problem with the remote switch.

Excessive error rate in the reception (TE3) BOARD=xx-xx

a. Definition: Indicates that the signal received on the xx-xx MXTS board shows an error rate above 10^{-3}.

b. Probable Causes: Transmission problems between the switches.

c. Corrective Actions: Check the transmission equipment between the switches.

Check the condition of the transmission cables between the switches.

MERIT higher than the abandonment limit REF=xx BOARD=xx-xx

a. Definition: Indicates that the reference xx of the board xx-xx presents frequency variations higher than the limit allowed by the switch.

b. Probable Causes: Synchronization problems on the remote switch.

c. Corrective Actions: Check if there is any synchronization problem with the remote switch.

In case the other switch references present the same problem, check if any of the internal generators is faulty and, if so, replace the failing generator board.

Failure on the Synchronization Clock CLK=xx

a. Definition: Shows that the indicated synchronization clock presents failures regarding the switch master clock.

b. Probable Causes: Problems on the switch synchronization signal cabling;

c. Corrective Actions: Check the condition of the cables interconnecting links and synchronization signals.

Beginning of ESA mode (ESA_BEGIN)

a. Definition: Indicates that the RAIU is being controlled by BZ-RS switch.

b. Probable Causes: 5ESS and RAIU connection fail.

c. Corrective Actions: Check the condition of the interconnecting links between 5ESS and RAIU switches.

Ending of ESA mode (ESA_END)

Definition: Indicates that communication between 5ESS and RAIU switches was established.

Diagnostic fail

a. Definition: Shows MXTS board diagnostic fail.

b. Probable Causes: Problems/Fail on MXTS board components.

c. Corrective Actions: If the problem persist, change the MXTS board.

Invalid switch data base

a. Definition: Indicates that the BZ-RS switch database is invalid.

b. Probable Causes: BZ-RS Switch lost its configuration.

c. Corrective Actions: Configure BZ-RS Switch again.

RAIU Subscribers database out of date

a. Definition: Indicates that RAIU subscribers database acquired from the 5ESS switch was not actualized in BS-RS database in schedule time.

b. Probable Causes: Fail in COP-RAIUDAT or RE-RAIUDAT commands.

c. Corrective Actions: Execute COP-RAIUDAT command . Verify if the commands schedule is correct.

Detection Point External Alarm PDT=xx-xx-xx

a. Definition: Indicates that the switch has detected an alarm occurrence on the external alarm detection point. The alarm message of the external detection point can be programmed by the operator.

b. Probable Causes: Alarm command via external device.

c. Corrective Actions: Check the device, which generated the alarm.

□

Major Failures

The major failures indicated by the switch are the following:

Route with trunks out of service ROUT=xx (xx%)

a. Definition: Indicates that the number of out-of-service trunks from the xx route exceeded the threshold set for generating the major alarm. This alarm also reports the percentage of out-of-service trunks on the route.

b. Probable Causes: Excessive number of *xx* route trunks blocked.

Removal of MXTS boards from the *xx* route.
Failure on the *xx* route trunks.

c. Corrective Actions: Identify, by means of the IT-TRK command, which trunks are faulty or blocked.

Unblock the failure-blocked trunks. For such, block these trunks via command, and then unblock them via command.

Excessive number of slips BOARD=xx-xx

a. Definition: Indicates that the MXTS board for the xx-xx is operating with an excessive number of slips (more than 2 slips in 1 minute).

b. Probable Causes: Synchronization problems between the BZ-RS and the remote switch.
c. Corrective Actions: Check if the slips are causing degradation on the indicated trunk channels.

Check if there are any synchronization problems with the remote switch.

Switch with MFC senders/receivers out of service (xx%)

a. Definition: Indicates the percentage of out-of-service MFC senders and receivers at the switch. Reports that the number of out-of-service senders and receivers has reached the limit for generating the major alarm.

b. Probable Causes: Excessive number of blocked MFCs;

c. Corrective Actions: Check, via the IT-MFC command, which senders/receivers are blocked or faulty.

The failure-blocked MFC senders/receivers can be unblocked. For such, block these MFC senders/receivers via command, and then unblock them via command.

Unit with DTMF detectors out of service (xx%)

a. Definition: Indicates the percentage of out-of-service DTMF detectors on the unit. Reports that the number of out-of-service DTMF detectors reached the limit for generating the major alarm.

b. Probable Causes: Excessive number of blocked DTMFs;

c. Corrective Actions: Check, via the IT-DTMF command, which detectors are blocked or faulty.

The failure-blocked DTMF detectors can be unblocked. For such, block these DTMF detectors via command, and then unblock them via command.

Excessive error rate on the reception (TE4) BOARD=xx-xx

a. Definition: Indicates that the signal received on the xx-xx MXTS board presents an error rate higher than 10^{-4}.

b. Probable Causes: Transmission problems between the switches.

c. Corrective Actions: Check the transmission equipment between the switches.

Check the conditions of the transmission cables between the switches.

External Alarm on the Detection Point PDT=xx-xx-xx

a. Definition: Indicates that the switch has detected the occurrence of an alarm on an external alarm detection point. The alarm message to be presented in that case can be programmed by the operator.

b. Probable Causes: Alarm issuing by means of an external device.

c. Corrective Actions: Check the device, which generated the alarm.

End of the voltage drift on clock oscillators CLK = xx

a. Definition: Indicates that the oscillator natural frequency may drift beyond the required adjustment limit for the PLL circuit.

b. Probable Causes: Crystal aging.

c. Corrective Actions: Replace the MXTS board equipped with the CLK = *xx* synchronization clock.

Inconsistent calendar

a. Definition: The CSR supervises the calendar of the connected BZ-RSs. In case of having a difference greater than or equal to the value set by the EXCTME command via its TSP1 parameter (in seconds), this alarm is generated.

b. Probable Causes: Either the CSR or the BZ-RS calendar was modified. This can happen in case the BZ-RS enters in a mode (usually in configuration operations) that causes its calendar to be stopped..

c. Corrective Actions: Set the calendar again by the CSR command MD-CAL.

Minor Failures

The minor failures indicated by the switch are the following:

Excessive error rate on reception (TE5) BOARD=xx-xx

a. Definition: Indicates that the signal received on the xx-xx MXTS board shows an error rate higher than 10^{-5}.

b. Probable Causes: Transmission problems between the switches.

c. Corrective Actions: Check the transmission equipment between the switches.

Check the conditions of the transmission cables between the switches.

External Alarm on the Detection Point PDT=xx-xx-xx

a. Definition: Indicates that the switch has detected an alarm occurrence on an external alarm detection point. The alarm message related to the external detection point can be programmed by the operator.

b. Probable Causes: Alarm issuing via an external device.

c. Corrective Actions: Check the device, which generated the alarm.

Switch Reset due to CPU Interruption UNI=xx

a. Definition: Indicates that the system generated a reset on the indicated unit.

b. Probable Causes: Problems on the indicated unit CPU.

c. Corrective Actions: Check the operation of the CPU regarding the concerned unit. In case the CPU does not return to normal service, replace it.

Control Program Error

a. Definition: The switch control program identified an unexpected condition for its processing.

Concurrent Processing Monitor Error

a. Definition: Indicates that an error occurred internally to the software, which implements the switch concurrent processing monitor (CORE).

b. Probable Causes: Failure on the allocation or handling of resources used for the CORE processing.

c. Corrective Actions: Contact Lucent Customer Service, reporting the condition in which the error occurred and the code displayed the alarm occurrence.

Failure on the command execution

a. Definition: The CSR program did not acknowledge the entered command and therefore it was not executed.

b. Probable Causes: Syntax error on the entered command.

c. Corrective Actions: Check the command syntax. In case errors exist, re-enter the command.

Board was taken out BOARD=xx-xx

a. Definition: The CSR indicates the operation performed with the respective board and the time it happened.

Occurrences

The occurrences indicate the switch operational conditions and they function as instruction for the operator.

The following-listed are the occurrences indicated by the BZ-RS Switch.

MFC blocking by an operator *MFC=xx-xx-xx*

MFC unblocking by an operator *MFC=xx-xx-xx*

DTMF blocking by an operator *DTMF=xx-xx-xx*

DTMF unblocking by an operator *DTMF=xx-xx-xx*

Trunk blocking by an operator *TRK=xx-xx-xx*

Trunk unblocking by an operator *TRK=xx-xx-xx*

Unit start a. Definition: Indicates that the unit has been started.

b. Probable Causes: Return of a reset.

Return of a power failure.

Loss of Event Log records

a. Definition: The above-listed occurrences (13 to 16) report that the switch lost the contents of the indicated records.

b. Probable Causes: Failure on the switch storage.

Unit dropping due to lack of power

a. Definition: Indicates that the unit went through a power failure period. The unit generates this occurrence once the failure is cleared.

Event Log Start

a. Definition: This occurrence is a response to the switch Event Log start command. It indicates the time of execution of this command.

End of External Alarm on the Detection Point PDT=xx-xx-xx

a. Definition: Indicates that the device interconnected to the corresponding external alarm detection point is not under an alarm status any more.

Trunk external blocking TRK=xx-xx-xx

a. Definition: Reports that the remote switch blocked the indicated trunk.

b. Probable Causes: Failures on the *xx-xx-xx* trunk;

Command of the remote switch operator.

c. Corrective Actions: Check the reason for the trunk blocking with the remote switch.

Trunk external unblocking TRK=xx-xx-x

a. Definition: Indicates that the *xx-xx-xx* trunk blocked by the remote switch has been unblocked.

Placement of board BOARD=xx-xx

BOARD=xx-xx

Board was taken off BOARD=xx-xx

BOARD=xx-xx

MFC blocking by failure MFC=xx-xx-xx

a. Definition: Indicates that the xx-xx-xx MFC sender/receiver has been blocked by failures.

b. Probable Causes: The number of ineffective seizures exceeded the limit programmed for the MFC sender/receiver blocking by ineffective seizures.

c. Corrective Actions: Check if the number of circuits blocked by failure on the indicated board is still acceptable.

Trunk blocking by failure TRK=xx-xx-xx

a. Definition: Indicates that the xx-xx-xx trunk has been blocked by failures.

b. Probable Causes: The number of ineffective seizures exceeded the limit programmed for the trunk blocking by ineffective seizures.

c. Corrective Actions: Check if the number of trunks blocked by failure on the indicated board is still acceptable. In case all the trunks of the board present a failure-blocking situation, the board should be replaced.

MERIT lower than the return limit REF=xx, BOARD=xx-xx

a. Definition: Indicates if the xx reference is in condition to be used as a switch synchronization reference.

Diagnostic of ESA mode (ESA_DIAG)

Definition: Indicates that BZ-RS and RAIU switches established communication to test the communication link.

5ESS and RAUI switches are connected normally.

Ending of diagnostic fail

Definition: Indicates the ending of fail situation on MXTS board.

Ending of non priority calls rejection

Definition: Indicates the ending of rejection to non priority calls, when System is operating in ESA mode. There are available resource to non priority calls

Acceptable number of slips BOARD=xx-xx

a. Definition: Indicates that the xx-xx MXTS board is presenting slips.

b. Probable Causes: Synchronization problems between the local switch and the remote switch.

c. Corrective Actions: As the number of slips is acceptable (less than 2 slips per minute), check if the number of slips is increasing or decreasing by means of supervision via CSR.

Existence of receiving digital signal (2MR)

BOARD=xx-xx

Lack of alarm indication signal (AIS)

BOARD=xx-xx

Frame alignment recovery (ALQ)

BOARD=xx-xx

Error rate normalization on the reception (TE3)

BOARD=xx-xx

Multi-frame alignment recovery (ALM)

BOARD=xx-xx

Frame remote alignment recovery (ALRQ)

BOARD=xx-xx

Multiframe remote alignment recovery (ALRM)

BOARD=xx-xx

Error rate normalization in case of reception error (TE4)

BOARD=xx-xx

Error rate normalization in case of reception error (TE5) BOARD=xx-xx

a. Definition: The occurrence reports that the indicated failure is not present any longer.

Switch operating on a stand-alone synchronization mode

a. Definition: Indicates that the switch is not slaved to any external synchronization reference.

b. Probable Causes: On switches trunked with others having a higher hierarchical level, this occurrence indicates an external reference abandon due to a failure.

c. Corrective Actions: Check the reason for the change in the synchronization mode.

Change in the switch synchronization reference REF=xx, BOARD=xx-xx

a. Definition: Indicates that the switch has started to synchronize with the xx external reference.

b. Probable Causes: Failure on the previous reference.

c. Corrective Actions: Check the reason for the failure on the previous reference.

Change in the switch master clock CLK=xx

a. Definition: Indicates that the switch has selected a new master clock.

b. Probable Causes: Failures on the old master clock.

c. Corrective Actions: Check if the previous clock master board was not disconnected.

Verify if the previous clock master has any failure. If it has, replace the MXTS board.

Announcement Machine Trunk Blocking by an Operator

JMA=xx-xx-xx

Announcement Machine Trunk Unblocking by an Operator JMA=xx-xx-xx

JMA=xx-xx-xx

Connection ending with the CSR PORT=xx-xxxx, CAUSA=xxxx

a. Definition: Indicates a drop in the connection between the CSR and the switch, due to one of the following occurrences: CDSB, NALA, QUNI, FIMC.

Probable Causes: CDSB - The CSR is not enabled to receive an alarm;

NALA - Switch with no alarms to be sent;
FIMC - Connection ending by the CSR;
QUNI – Drop of unit connected to the CSR.

□

Activation of Actuator Relays

The BZ-RS Switches are equipped with relays intended for commands on external equipment. These relays are called actuators and are located on the switch MXTS board.

These relays can operate in two different ways: first, the operator commands the relay manual operation via the AT-EXTEM (Activate External Alarm Emitter) command; second, the relay is associated with an alarm occurrence with a certain urgency level. This association is made via the PR-PEMALA (Program External Alarm Issuing Point) command.

Manual Operation

The manual operation of the BZ-RS Switch actuator relays is performed via the AT-EXTEM (Activate External Alarm Emitter) command. The switch responds to this command by activating the indicated relay. The following example illustrates the described command:

```
<AT EXTEM EMP = 01-01-01
OK
```

The switch allows the actuator relay to be deactivated via the DS-EXTEM (Deactivate External Alarm Emitter) command. It also allows the switch actuator relays, which are active, to be queried via the IT-EXTEM (Inquiry Active External Alarm Emitters) command.

The following example illustrates the IT-EXTEM command:

```
<IT EXTEM
EMP = 01-01-01
```

Associated Operation

On this operation mode, the switch activates a certain alarm issuing point when an alarm, with a previously specified urgency level, is detected.
The association between the external alarm issuing point and the alarm urgency level is made via the PR-PEMALA (Program External Alarm Issuing Point) command. Whenever the alarm vanishes, the external alarm issuing point is deactivated.
The following example illustrates the urgent level association with the 01-01-01 alarm issuing point.

```
<PR PEMALA  ASE = UR, EMP = 01-01-01
OK
```

The switch also allows the programming of a given external alarm issuing point to be removed via the RP-PEMALA (Remove External Alarm Issuing Point Programming) command.
The IP-PEMALA (Inquiry External Alarm Issuing Point Programming) command is used to inquiry the urgency levels associated with the external alarm issuing points.

NOTE: It may be checked if the manual actuation points are not matching the associated actuation points, as there is no physical difference between them. Any of the MXTS board actuation points can be programmed for any of the operation modes.

7 BZ-RS Technical Specification

Overview

Purpose This chapter presents the technical specification of the BZ-RS as well as the standards that it is compliant.

Main Processor

- Intel® (based) Pentium 133 MHz or higher;
- 64 Mbytes DRAM or higher;
- 32 Mbytes FLASH Memory or higher;
- Internal watch-dog-timer;
- CompactPCI standard form factor (6U - 4 or 8 HP);
- MTBF higher than 75,000 hours;
- Full passive cooling system;

DSP

- Texas Instruments® DSP 6x family (TMS320C6202) 2,000 MIPS processor
- 16 Mbytes of external SDRAM

- 8 Mbytes FLASH memory

Back Plane

- H.110 (and internal) non-blocking TDM switch with hot-swap – based on Lucent T8100 family (2 X T8105 IC)
- 32 bit 33 MHz target PCI interface with hot-swap capability, PICMG 2.1 compliant.

MXTS Board

- 16 T1 or E1 (ITU-T G.703) interfaces – framer type selected by software.
- Synchronization circuitry (Stratum 3E or 4E – depending on the application) from any T1/E1 trunk or the external 2.048 MHz input.
- Clock output 2.048 MHz
- 10BaseT Ethernet interface
- Serial interface 16550 compatible
- Modem V.90/K56flex™/V.34/V32bis – Conexant SocketModem Family
- 7 electrically insulated Distribute Points (output control to other equipment)

- 8 Scan Points (external sensor/alarm reading)

System Capacities

General

- Up to 2 MXTS boards per BZ-RS chassis
- Up to 8 BZ-RS per EM unit (private line mode)
- Up to 20 BZ-RS per EM unit (dial up line mode)
- Up to 6 R/EAIU shelves per BZ-RS chassis
- Up to 4 emergency trunks (DS1's) per MXTS board (R1 signaling only)
- Up to 60 DTMF + MFC transceivers per MXTS board
- Up to 28 messages (900 seconds total time) per MXTS board

□

Traffic T1

- 46 intracluster simultaneous half calls for each RAIU (276 total)
- Up to192 outgoing simultaneous half calls (8 T1's)

□

Traffic E1

- 58 intracluster simultaneous half calls for each RAIU (348 total)
- Up to 240 outgoing simultaneous half calls (8 E1's)

□

Consumption

- 75 Watts per BZ-RS shelf
- 96 Watts per Element Manager

□

Standards

Safety

UL1950 – Underwriters Laboratories # 1950

EN60950 (European Norm # 60950)

EMC (Electro-Magnetic Compatibility)

Bellcore SR-3580 Network Equipment Building System (NEBS) Criteria (Level 3)

Bellcore GR-1089 Electromagnetic Compatibility and Electrical Safety

EN 300-386-2 Electromagnetic Compatibility and Radio Spectrum Matters; Telecommunications Network Equipment; electromagnetic Compatibility Requirements; Part2: Product Family Standards

EN 55022 Radiated and Conducted Emission

EN 61000-4-2 ESD Immunity

EN 61000-4-3 Radiated Immunity

EN 61000-4-4 Electrical Fast Transients

EN 61000-4-5 Electrical Surge Immunity

EN 61000-4-6 Conducted Immunity on Power and Signals Lead

Environmental

Bellcore SR-3580 Network Equipment Building System (NEBS) Criteria (Level 3)

Bellcore GR-63 – Network Equipment Building System (NEBS) Requirements

ETSI 300-019 – Environmental Conditions and environmental tests for telecommunications equipment

Note: Zip drive, Floppy drive and CD-ROM has its operation temperature range limited in the upper side to 45 degrees Celsius.□

A. Annex - CIC and Link/Channel

Overview

Purpose To show the correspondence between CIC and link/channel numbering formats.

CIC and Link/ Channel

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
1	1	0	1	1	1	0	RAIU
2	1	0	1	2	1	1	RAIU
3	1	0	1	3	1	2	RAIU
4	1	0	1	4	1	3	RAIU
5	1	0	1	5	1	4	RAIU
6	1	0	1	6	1	5	RAIU
7	1	0	1	7	1	6	RAIU
8	1	0	1	8	1	7	RAIU
9	1	0	1	9	1	8	RAIU
10	1	0	1	10	1	9	RAIU
11	1	0	1	11	1	10	RAIU
12	1	0	1	12	1	11	RAIU
13	1	0	1	13	1	12	RAIU
14	1	0	1	14	1	13	RAIU
15	1	0	1	15	1	14	RAIU
16	1	0	1	16	1	15	RAIU
17	1	0	1	17	1	16	RAIU
18	1	0	1	18	1	17	RAIU
19	1	0	1	19	1	18	RAIU
20	1	0	1	20	1	19	RAIU
21	1	0	1	21	1	20	RAIU
22	1	0	1	22	1	21	RAIU
23	1	0	1	23	1	22	RAIU
24	1	0	1	24	1	23	RAIU
25	1	0	1	25	1	24	RAIU
26	1	0	1	26	1	25	RAIU
27	1	0	1	27	1	26	RAIU
28	1	0	1	28	1	27	RAIU
29	1	0	1	29	1	28	RAIU
30	1	0	1	30	1	29	RAIU
31	1	0	1	31	1	30	RAIU
32	1	0	1	32	1	31	RAIU
33	1	0	1	33	2	0	HOST
34	1	0	1	34	2	1	HOST
35	1	0	1	35	2	2	HOST
36	1	0	1	36	2	3	HOST
37	1	0	1	37	2	4	HOST
38	1	0	1	38	2	5	HOST
39	1	0	1	39	2	6	HOST
40	1	0	1	40	2	7	HOST
41	1	0	1	41	2	8	HOST
42	1	0	1	42	2	9	HOST
43	1	0	1	43	2	10	HOST
44	1	0	1	44	2	11	HOST
45	1	0	1	45	2	12	HOST
46	1	0	1	46	2	13	HOST
47	1	0	1	47	2	14	HOST
48	1	0	1	48	2	15	HOST
49	1	0	1	49	2	16	HOST
50	1	0	1	50	2	17	HOST
51	1	0	1	51	2	18	HOST
52	1	0	1	52	2	19	HOST
53	1	0	1	53	2	20	HOST
54	1	0	1	54	2	21	HOST
55	1	0	1	55	2	22	HOST
56	1	0	1	56	2	23	HOST
57	1	0	1	57	2	24	HOST

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
65	2	0	1	65	3	0	RAIU
66	2	0	1	66	3	1	RAIU
67	2	0	1	67	3	2	RAIU
68	2	0	1	68	3	3	RAIU
69	2	0	1	69	3	4	RAIU
70	2	0	1	70	3	5	RAIU
71	2	0	1	71	3	6	RAIU
72	2	0	1	72	3	7	RAIU
73	2	0	1	73	3	8	RAIU
74	2	0	1	74	3	9	RAIU
75	2	0	1	75	3	10	RAIU
76	2	0	1	76	3	11	RAIU
77	2	0	1	77	3	12	RAIU
78	2	0	1	78	3	13	RAIU
79	2	0	1	79	3	14	RAIU
80	2	0	1	80	3	15	RAIU
81	2	0	1	81	3	16	RAIU
82	2	0	1	82	3	17	RAIU
83	2	0	1	83	3	18	RAIU
84	2	0	1	84	3	19	RAIU
85	2	0	1	85	3	20	RAIU
86	2	0	1	86	3	21	RAIU
87	2	0	1	87	3	22	RAIU
88	2	0	1	88	3	23	RAIU
89	2	0	1	89	3	24	RAIU
90	2	0	1	90	3	25	RAIU
91	2	0	1	91	3	26	RAIU
92	2	0	1	92	3	27	RAIU
93	2	0	1	93	3	28	RAIU
94	2	0	1	94	3	29	RAIU
95	2	0	1	95	3	30	RAIU
96	2	0	1	96	3	31	RAIU
97	2	0	1	97	4	0	HOST
98	2	0	1	98	4	1	HOST
99	2	0	1	99	4	2	HOST
100	2	0	1	100	4	3	HOST
101	2	0	1	101	4	4	HOST
102	2	0	1	102	4	5	HOST
103	2	0	1	103	4	6	HOST
104	2	0	1	104	4	7	HOST
105	2	0	1	105	4	8	HOST
106	2	0	1	106	4	9	HOST
107	2	0	1	107	4	10	HOST
108	2	0	1	108	4	11	HOST
109	2	0	1	109	4	12	HOST
110	2	0	1	110	4	13	HOST
111	2	0	1	111	4	14	HOST
112	2	0	1	112	4	15	HOST
113	2	0	1	113	4	16	HOST
114	2	0	1	114	4	17	HOST
115	2	0	1	115	4	18	HOST
116	2	0	1	116	4	19	HOST
117	2	0	1	117	4	20	HOST
118	2	0	1	118	4	21	HOST
119	2	0	1	119	4	22	HOST
120	2	0	1	120	4	23	HOST
121	2	0	1	121	4	24	HOST

58	1	0	1	58	2	25	HOST
59	1	0	1	59	2	26	HOST
60	1	0	1	60	2	27	HOST
61	1	0	1	61	2	28	HOST
62	1	0	1	62	2	29	HOST
63	1	0	1	63	2	30	HOST
64	1	0	1	64	2	31	HOST
CIC	**RAIU**	**RCOMDAC**	**MXTS**	**CIRC**	**LINK**	**CHN**	**DIR TO**
129	3	0	1	129	5	0	RAIU
130	3	0	1	130	5	1	RAIU
131	3	0	1	131	5	2	RAIU
132	3	0	1	132	5	3	RAIU
133	3	0	1	133	5	4	RAIU
134	3	0	1	134	5	5	RAIU
135	3	0	1	135	5	6	RAIU
136	3	0	1	136	5	7	RAIU
137	3	0	1	137	5	8	RAIU
138	3	0	1	138	5	9	RAIU
139	3	0	1	139	5	10	RAIU
140	3	0	1	140	5	11	RAIU
141	3	0	1	141	5	12	RAIU
142	3	0	1	142	5	13	RAIU
143	3	0	1	143	5	14	RAIU
144	3	0	1	144	5	15	RAIU
145	3	0	1	145	5	16	RAIU
146	3	0	1	146	5	17	RAIU
147	3	0	1	147	5	18	RAIU
148	3	0	1	148	5	19	RAIU
149	3	0	1	149	5	20	RAIU
150	3	0	1	150	5	21	RAIU
151	3	0	1	151	5	22	RAIU
152	3	0	1	152	5	23	RAIU
153	3	0	1	153	5	24	RAIU
154	3	0	1	154	5	25	RAIU
155	3	0	1	155	5	26	RAIU
156	3	0	1	156	5	27	RAIU
157	3	0	1	157	5	28	RAIU
158	3	0	1	158	5	29	RAIU
159	3	0	1	159	5	30	RAIU
160	3	0	1	160	5	31	RAIU
161	3	0	1	161	6	0	HOST
162	3	0	1	162	6	1	HOST
163	3	0	1	163	6	2	HOST
164	3	0	1	164	6	3	HOST
165	3	0	1	165	6	4	HOST
166	3	0	1	166	6	5	HOST
167	3	0	1	167	6	6	HOST
168	3	0	1	168	6	7	HOST
169	3	0	1	169	6	8	HOST
170	3	0	1	170	6	9	HOST
171	3	0	1	171	6	10	HOST
172	3	0	1	172	6	11	HOST
173	3	0	1	173	6	12	HOST
174	3	0	1	174	6	13	HOST
175	3	0	1	175	6	14	HOST
176	3	0	1	176	6	15	HOST
177	3	0	1	177	6	16	HOST
178	3	0	1	178	6	17	HOST
179	3	0	1	179	6	18	HOST
180	3	0	1	180	6	19	HOST
181	3	0	1	181	6	20	HOST
182	3	0	1	182	6	21	HOST
183	3	0	1	183	6	22	HOST

122	2	0	1	122	4	25	HOST
123	2	0	1	123	4	26	HOST
124	2	0	1	124	4	27	HOST
125	2	0	1	125	4	28	HOST
126	2	0	1	126	4	29	HOST
127	2	0	1	127	4	30	HOST
128	2	0	1	128	4	31	HOST
CIC	**RAIU**	**RCOMDAC**	**MXTS**	**CIRC**	**LINK**	**CHN**	**DIR TO**
193	4	0	1	193	7	0	RAIU
194	4	0	1	194	7	1	RAIU
195	4	0	1	195	7	2	RAIU
196	4	0	1	196	7	3	RAIU
197	4	0	1	197	7	4	RAIU
198	4	0	1	198	7	5	RAIU
199	4	0	1	199	7	6	RAIU
200	4	0	1	200	7	7	RAIU
201	4	0	1	201	7	8	RAIU
202	4	0	1	202	7	9	RAIU
203	4	0	1	203	7	10	RAIU
204	4	0	1	204	7	11	RAIU
205	4	0	1	205	7	12	RAIU
206	4	0	1	206	7	13	RAIU
207	4	0	1	207	7	14	RAIU
208	4	0	1	208	7	15	RAIU
209	4	0	1	209	7	16	RAIU
210	4	0	1	210	7	17	RAIU
211	4	0	1	211	7	18	RAIU
212	4	0	1	212	7	19	RAIU
213	4	0	1	213	7	20	RAIU
214	4	0	1	214	7	21	RAIU
215	4	0	1	215	7	22	RAIU
216	4	0	1	216	7	23	RAIU
217	4	0	1	217	7	24	RAIU
218	4	0	1	218	7	25	RAIU
219	4	0	1	219	7	26	RAIU
220	4	0	1	220	7	27	RAIU
221	4	0	1	221	7	28	RAIU
222	4	0	1	222	7	29	RAIU
223	4	0	1	223	7	30	RAIU
224	4	0	1	224	7	31	RAIU
225	4	0	1	225	8	0	HOST
226	4	0	1	226	8	1	HOST
227	4	0	1	227	8	2	HOST
228	4	0	1	228	8	3	HOST
229	4	0	1	229	8	4	HOST
230	4	0	1	230	8	5	HOST
231	4	0	1	231	8	6	HOST
232	4	0	1	232	8	7	HOST
233	4	0	1	233	8	8	HOST
234	4	0	1	234	8	9	HOST
235	4	0	1	235	8	10	HOST
236	4	0	1	236	8	11	HOST
237	4	0	1	237	8	12	HOST
238	4	0	1	238	8	13	HOST
239	4	0	1	239	8	14	HOST
240	4	0	1	240	8	15	HOST
241	4	0	1	241	8	16	HOST
242	4	0	1	242	8	17	HOST
243	4	0	1	243	8	18	HOST
244	4	0	1	244	8	19	HOST
245	4	0	1	245	8	20	HOST
246	4	0	1	246	8	21	HOST
247	4	0	1	247	8	22	HOST

184	3	0	1	184	6	23	HOST
185	3	0	1	185	6	24	HOST
186	3	0	1	186	6	25	HOST
187	3	0	1	187	6	26	HOST
188	3	0	1	188	6	27	HOST
189	3	0	1	189	6	28	HOST
190	3	0	1	190	6	29	HOST
191	3	0	1	191	6	30	HOST
192	3	0	1	192	6	31	HOST
CIC	**RAIU**	**RCOMDAC**	**MXTS**	**CIRC**	**LINK**	**CHN**	**DIR TO**
257	5	0	1	257	9	0	RAIU
258	5	0	1	258	9	1	RAIU
259	5	0	1	259	9	2	RAIU
260	5	0	1	260	9	3	RAIU
261	5	0	1	261	9	4	RAIU
262	5	0	1	262	9	5	RAIU
263	5	0	1	263	9	6	RAIU
264	5	0	1	264	9	7	RAIU
265	5	0	1	265	9	8	RAIU
266	5	0	1	266	9	9	RAIU
267	5	0	1	267	9	10	RAIU
268	5	0	1	268	9	11	RAIU
269	5	0	1	269	9	12	RAIU
270	5	0	1	270	9	13	RAIU
271	5	0	1	271	9	14	RAIU
272	5	0	1	272	9	15	RAIU
273	5	0	1	273	9	16	RAIU
274	5	0	1	274	9	17	RAIU
275	5	0	1	275	9	18	RAIU
276	5	0	1	276	9	19	RAIU
277	5	0	1	277	9	20	RAIU
278	5	0	1	278	9	21	RAIU
279	5	0	1	279	9	22	RAIU
280	5	0	1	280	9	23	RAIU
281	5	0	1	281	9	24	RAIU
282	5	0	1	282	9	25	RAIU
283	5	0	1	283	9	26	RAIU
284	5	0	1	284	9	27	RAIU
285	5	0	1	285	9	28	RAIU
286	5	0	1	286	9	29	RAIU
287	5	0	1	287	9	30	RAIU
288	5	0	1	288	9	31	RAIU
289	5	0	1	289	10	0	HOST
290	5	0	1	290	10	1	HOST
291	5	0	1	291	10	2	HOST
292	5	0	1	292	10	3	HOST
293	5	0	1	293	10	4	HOST
294	5	0	1	294	10	5	HOST
295	5	0	1	295	10	6	HOST
296	5	0	1	296	10	7	HOST
297	5	0	1	297	10	8	HOST
298	5	0	1	298	10	9	HOST
299	5	0	1	299	10	10	HOST
300	5	0	1	300	10	11	HOST
301	5	0	1	301	10	12	HOST
302	5	0	1	302	10	13	HOST
303	5	0	1	303	10	14	HOST
304	5	0	1	304	10	15	HOST
305	5	0	1	305	10	16	HOST
306	5	0	1	306	10	17	HOST
307	5	0	1	307	10	18	HOST
308	5	0	1	308	10	19	HOST
309	5	0	1	309	10	20	HOST

248	4	0	1	248	8	23	HOST
249	4	0	1	249	8	24	HOST
250	4	0	1	250	8	25	HOST
251	4	0	1	251	8	26	HOST
252	4	0	1	252	8	27	HOST
253	4	0	1	253	8	28	HOST
254	4	0	1	254	8	29	HOST
255	4	0	1	255	8	30	HOST
256	4	0	1	256	8	31	HOST
CIC	**RAIU**	**RCOMDAC**	**MXTS**	**CIRC**	**LINK**	**CHN**	**DIR TO**
321	6	0	1	321	11	0	RAIU
322	6	0	1	322	11	1	RAIU
323	6	0	1	323	11	2	RAIU
324	6	0	1	324	11	3	RAIU
325	6	0	1	325	11	4	RAIU
326	6	0	1	326	11	5	RAIU
327	6	0	1	327	11	6	RAIU
328	6	0	1	328	11	7	RAIU
329	6	0	1	329	11	8	RAIU
330	6	0	1	330	11	9	RAIU
331	6	0	1	331	11	10	RAIU
332	6	0	1	332	11	11	RAIU
333	6	0	1	333	11	12	RAIU
334	6	0	1	334	11	13	RAIU
335	6	0	1	335	11	14	RAIU
336	6	0	1	336	11	15	RAIU
337	6	0	1	337	11	16	RAIU
338	6	0	1	338	11	17	RAIU
339	6	0	1	339	11	18	RAIU
340	6	0	1	340	11	19	RAIU
341	6	0	1	341	11	20	RAIU
342	6	0	1	342	11	21	RAIU
343	6	0	1	343	11	22	RAIU
344	6	0	1	344	11	23	RAIU
345	6	0	1	345	11	24	RAIU
346	6	0	1	346	11	25	RAIU
347	6	0	1	347	11	26	RAIU
348	6	0	1	348	11	27	RAIU
349	6	0	1	349	11	28	RAIU
350	6	0	1	350	11	29	RAIU
351	6	0	1	351	11	30	RAIU
352	6	0	1	352	11	31	RAIU
353	6	0	1	353	12	0	HOST
354	6	0	1	354	12	1	HOST
355	6	0	1	355	12	2	HOST
356	6	0	1	356	12	3	HOST
357	6	0	1	357	12	4	HOST
358	6	0	1	358	12	5	HOST
359	6	0	1	359	12	6	HOST
360	6	0	1	360	12	7	HOST
361	6	0	1	361	12	8	HOST
362	6	0	1	362	12	9	HOST
363	6	0	1	363	12	10	HOST
364	6	0	1	364	12	11	HOST
365	6	0	1	365	12	12	HOST
366	6	0	1	366	12	13	HOST
367	6	0	1	367	12	14	HOST
368	6	0	1	368	12	15	HOST
369	6	0	1	369	12	16	HOST
370	6	0	1	370	12	17	HOST
371	6	0	1	371	12	18	HOST
372	6	0	1	372	12	19	HOST
373	6	0	1	373	12	20	HOST

310	5	0	1	310	10	21	HOST
311	5	0	1	311	10	22	HOST
312	5	0	1	312	10	23	HOST
313	5	0	1	313	10	24	HOST
314	5	0	1	314	10	25	HOST
315	5	0	1	315	10	26	HOST
316	5	0	1	316	10	27	HOST
317	5	0	1	317	10	28	HOST
318	5	0	1	318	10	29	HOST
319	5	0	1	319	10	30	HOST
320	5	0	1	320	10	31	HOST

374	6	0	1	374	12	21	HOST
375	6	0	1	375	12	22	HOST
376	6	0	1	376	12	23	HOST
377	6	0	1	377	12	24	HOST
378	6	0	1	378	12	25	HOST
379	6	0	1	379	12	26	HOST
380	6	0	1	380	12	27	HOST
381	6	0	1	381	12	28	HOST
382	6	0	1	382	12	29	HOST
383	6	0	1	383	12	30	HOST
384	6	0	1	384	12	31	HOST

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
385	-	-	1	385	13	0	EMERG
386	-	-	1	386	13	1	EMERG
387	-	-	1	387	13	2	EMERG
388	-	-	1	388	13	3	EMERG
389	-	-	1	389	13	4	EMERG
390	-	-	1	390	13	5	EMERG
391	-	-	1	391	13	6	EMERG
392	-	-	1	392	13	7	EMERG
393	-	-	1	393	13	8	EMERG
394	-	-	1	394	13	9	EMERG
395	-	-	1	395	13	10	EMERG
396	-	-	1	396	13	11	EMERG
397	-	-	1	397	13	12	EMERG
398	-	-	1	398	13	13	EMERG
399	-	-	1	399	13	14	EMERG
400	-	-	1	400	13	15	EMERG
401	-	-	1	401	13	16	EMERG
402	-	-	1	402	13	17	EMERG
403	-	-	1	403	13	18	EMERG
404	-	-	1	404	13	19	EMERG
405	-	-	1	405	13	20	EMERG
406	-	-	1	406	13	21	EMERG
407	-	-	1	407	13	22	EMERG
408	-	-	1	408	13	23	EMERG
409	-	-	1	409	13	24	EMERG
410	-	-	1	410	13	25	EMERG
411	-	-	1	411	13	26	EMERG
412	-	-	1	412	13	27	EMERG
413	-	-	1	413	13	28	EMERG
414	-	-	1	414	13	29	EMERG
415	-	-	1	415	13	30	EMERG
416	-	-	1	416	13	31	EMERG
417	-	-	1	417	14	0	EMERG
418	-	-	1	418	14	1	EMERG
419	-	-	1	419	14	2	EMERG
420	-	-	1	420	14	3	EMERG
421	-	-	1	421	14	4	EMERG
422	-	-	1	422	14	5	EMERG
423	-	-	1	423	14	6	EMERG
424	-	-	1	424	14	7	EMERG
425	-	-	1	425	14	8	EMERG
426	-	-	1	426	14	9	EMERG
427	-	-	1	427	14	10	EMERG
428	-	-	1	428	14	11	EMERG
429	-	-	1	429	14	12	EMERG
430	-	-	1	430	14	13	EMERG
431	-	-	1	431	14	14	EMERG
432	-	-	1	432	14	15	EMERG
433	-	-	1	433	14	16	EMERG
434	-	-	1	434	14	17	EMERG
435	-	-	1	435	14	18	EMERG

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
449	-	-	1	449	15	0	EMERG
450	-	-	1	450	15	1	EMERG
451	-	-	1	451	15	2	EMERG
452	-	-	1	452	15	3	EMERG
453	-	-	1	453	15	4	EMERG
454	-	-	1	454	15	5	EMERG
455	-	-	1	455	15	6	EMERG
456	-	-	1	456	15	7	EMERG
457	-	-	1	457	15	8	EMERG
458	-	-	1	458	15	9	EMERG
459	-	-	1	459	15	10	EMERG
460	-	-	1	460	15	11	EMERG
461	-	-	1	461	15	12	EMERG
462	-	-	1	462	15	13	EMERG
463	-	-	1	463	15	14	EMERG
464	-	-	1	464	15	15	EMERG
465	-	-	1	465	15	16	EMERG
466	-	-	1	466	15	17	EMERG
467	-	-	1	467	15	18	EMERG
468	-	-	1	468	15	19	EMERG
469	-	-	1	469	15	20	EMERG
470	-	-	1	470	15	21	EMERG
471	-	-	1	471	15	22	EMERG
472	-	-	1	472	15	23	EMERG
473	-	-	1	473	15	24	EMERG
474	-	-	1	474	15	25	EMERG
475	-	-	1	475	15	26	EMERG
476	-	-	1	476	15	27	EMERG
477	-	-	1	477	15	28	EMERG
478	-	-	1	478	15	29	EMERG
479	-	-	1	479	15	30	EMERG
480	-	-	1	480	15	31	EMERG
481	-	-	1	481	16	0	EMERG
482	-	-	1	482	16	1	EMERG
483	-	-	1	483	16	2	EMERG
484	-	-	1	484	16	3	EMERG
485	-	-	1	485	16	4	EMERG
486	-	-	1	486	16	5	EMERG
487	-	-	1	487	16	6	EMERG
488	-	-	1	488	16	7	EMERG
489	-	-	1	489	16	8	EMERG
490	-	-	1	490	16	9	EMERG
491	-	-	1	491	16	10	EMERG
492	-	-	1	492	16	11	EMERG
493	-	-	1	493	16	12	EMERG
494	-	-	1	494	16	13	EMERG
495	-	-	1	495	16	14	EMERG
496	-	-	1	496	16	15	EMERG
497	-	-	1	497	16	16	EMERG
498	-	-	1	498	16	17	EMERG
499	-	-	1	499	16	18	EMERG

436	-	-	1	436	14	19	EMERG
437	-	-	1	437	14	20	EMERG
438	-	-	1	438	14	21	EMERG
439	-	-	1	439	14	22	EMERG
440	-	-	1	440	14	23	EMERG
441	-	-	1	441	14	24	EMERG
442	-	-	1	442	14	25	EMERG
443	-	-	1	443	14	26	EMERG
444	-	-	1	444	14	27	EMERG
445	-	-	1	445	14	28	EMERG
446	-	-	1	446	14	29	EMERG
447	-	-	1	447	14	30	EMERG
448	-	-	1	448	14	31	EMERG

500	-	-	1	500	16	19	EMERG
501	-	-	1	501	16	20	EMERG
502	-	-	1	502	16	21	EMERG
503	-	-	1	503	16	22	EMERG
504	-	-	1	504	16	23	EMERG
505	-	-	1	505	16	24	EMERG
506	-	-	1	506	16	25	EMERG
507	-	-	1	507	16	26	EMERG
508	-	-	1	508	16	27	EMERG
509	-	-	1	509	16	28	EMERG
510	-	-	1	510	16	29	EMERG
511	-	-	1	511	16	30	EMERG
512	-	-	1	512	16	31	EMERG

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
513	1	1	2	1	1	0	RAIU
514	1	1	2	2	1	1	RAIU
515	1	1	2	3	1	2	RAIU
516	1	1	2	4	1	3	RAIU
517	1	1	2	5	1	4	RAIU
518	1	1	2	6	1	5	RAIU
519	1	1	2	7	1	6	RAIU
520	1	1	2	8	1	7	RAIU
521	1	1	2	9	1	8	RAIU
522	1	1	2	10	1	9	RAIU
523	1	1	2	11	1	10	RAIU
524	1	1	2	12	1	11	RAIU
525	1	1	2	13	1	12	RAIU
526	1	1	2	14	1	13	RAIU
527	1	1	2	15	1	14	RAIU
528	1	1	2	16	1	15	RAIU
529	1	1	2	17	1	16	RAIU
530	1	1	2	18	1	17	RAIU
531	1	1	2	19	1	18	RAIU
532	1	1	2	20	1	19	RAIU
533	1	1	2	21	1	20	RAIU
534	1	1	2	22	1	21	RAIU
535	1	1	2	23	1	22	RAIU
536	1	1	2	24	1	23	RAIU
537	1	1	2	25	1	24	RAIU
538	1	1	2	26	1	25	RAIU
539	1	1	2	27	1	26	RAIU
540	1	1	2	28	1	27	RAIU
541	1	1	2	29	1	28	RAIU
542	1	1	2	30	1	29	RAIU
543	1	1	2	31	1	30	RAIU
544	1	1	2	32	1	31	RAIU
545	1	1	2	33	2	0	HOST
546	1	1	2	34	2	1	HOST
547	1	1	2	35	2	2	HOST
548	1	1	2	36	2	3	HOST
549	1	1	2	37	2	4	HOST
550	1	1	2	38	2	5	HOST
551	1	1	2	39	2	6	HOST
552	1	1	2	40	2	7	HOST
553	1	1	2	41	2	8	HOST
554	1	1	2	42	2	9	HOST
555	1	1	2	43	2	10	HOST
556	1	1	2	44	2	11	HOST
557	1	1	2	45	2	12	HOST
558	1	1	2	46	2	13	HOST
559	1	1	2	47	2	14	HOST
560	1	1	2	48	2	15	HOST
561	1	1	2	49	2	16	HOST

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
577	2	1	2	65	3	0	RAIU
578	2	1	2	66	3	1	RAIU
579	2	1	2	67	3	2	RAIU
580	2	1	2	68	3	3	RAIU
581	2	1	2	69	3	4	RAIU
582	2	1	2	70	3	5	RAIU
583	2	1	2	71	3	6	RAIU
584	2	1	2	72	3	7	RAIU
585	2	1	2	73	3	8	RAIU
586	2	1	2	74	3	9	RAIU
587	2	1	2	75	3	10	RAIU
588	2	1	2	76	3	11	RAIU
589	2	1	2	77	3	12	RAIU
590	2	1	2	78	3	13	RAIU
591	2	1	2	79	3	14	RAIU
592	2	1	2	80	3	15	RAIU
593	2	1	2	81	3	16	RAIU
594	2	1	2	82	3	17	RAIU
595	2	1	2	83	3	18	RAIU
596	2	1	2	84	3	19	RAIU
597	2	1	2	85	3	20	RAIU
598	2	1	2	86	3	21	RAIU
599	2	1	2	87	3	22	RAIU
600	2	1	2	88	3	23	RAIU
601	2	1	2	89	3	24	RAIU
602	2	1	2	90	3	25	RAIU
603	2	1	2	91	3	26	RAIU
604	2	1	2	92	3	27	RAIU
605	2	1	2	93	3	28	RAIU
606	2	1	2	94	3	29	RAIU
607	2	1	2	95	3	30	RAIU
608	2	1	2	96	3	31	RAIU
609	2	1	2	97	4	0	HOST
610	2	1	2	98	4	1	HOST
611	2	1	2	99	4	2	HOST
612	2	1	2	100	4	3	HOST
613	2	1	2	101	4	4	HOST
614	2	1	2	102	4	5	HOST
615	2	1	2	103	4	6	HOST
616	2	1	2	104	4	7	HOST
617	2	1	2	105	4	8	HOST
618	2	1	2	106	4	9	HOST
619	2	1	2	107	4	10	HOST
620	2	1	2	108	4	11	HOST
621	2	1	2	109	4	12	HOST
622	2	1	2	110	4	13	HOST
623	2	1	2	111	4	14	HOST
624	2	1	2	112	4	15	HOST
625	2	1	2	113	4	16	HOST

562	1	1	2	50	2	17	HOST
563	1	1	2	51	2	18	HOST
564	1	1	2	52	2	19	HOST
565	1	1	2	53	2	20	HOST
566	1	1	2	54	2	21	HOST
567	1	1	2	55	2	22	HOST
568	1	1	2	56	2	23	HOST
569	1	1	2	57	2	24	HOST
570	1	1	2	58	2	25	HOST
571	1	1	2	59	2	26	HOST
572	1	1	2	60	2	27	HOST
573	1	1	2	61	2	28	HOST
574	1	1	2	62	2	29	HOST
575	1	1	2	63	2	30	HOST
576	1	1	2	64	2	31	HOST

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
641	3	1	2	129	5	0	RAIU
642	3	1	2	130	5	1	RAIU
643	3	1	2	131	5	2	RAIU
644	3	1	2	132	5	3	RAIU
645	3	1	2	133	5	4	RAIU
646	3	1	2	134	5	5	RAIU
647	3	1	2	135	5	6	RAIU
648	3	1	2	136	5	7	RAIU
649	3	1	2	137	5	8	RAIU
650	3	1	2	138	5	9	RAIU
651	3	1	2	139	5	10	RAIU
652	3	1	2	140	5	11	RAIU
653	3	1	2	141	5	12	RAIU
654	3	1	2	142	5	13	RAIU
655	3	1	2	143	5	14	RAIU
656	3	1	2	144	5	15	RAIU
657	3	1	2	145	5	16	RAIU
658	3	1	2	146	5	17	RAIU
659	3	1	2	147	5	18	RAIU
660	3	1	2	148	5	19	RAIU
661	3	1	2	149	5	20	RAIU
662	3	1	2	150	5	21	RAIU
663	3	1	2	151	5	22	RAIU
664	3	1	2	152	5	23	RAIU
665	3	1	2	153	5	24	RAIU
666	3	1	2	154	5	25	RAIU
667	3	1	2	155	5	26	RAIU
668	3	1	2	156	5	27	RAIU
669	3	1	2	157	5	28	RAIU
670	3	1	2	158	5	29	RAIU
671	3	1	2	159	5	30	RAIU
672	3	1	2	160	5	31	RAIU
673	3	1	2	161	6	0	HOST
674	3	1	2	162	6	1	HOST
675	3	1	2	163	6	2	HOST
676	3	1	2	164	6	3	HOST
677	3	1	2	165	6	4	HOST
678	3	1	2	166	6	5	HOST
679	3	1	2	167	6	6	HOST
680	3	1	2	168	6	7	HOST
681	3	1	2	169	6	8	HOST
682	3	1	2	170	6	9	HOST
683	3	1	2	171	6	10	HOST
684	3	1	2	172	6	11	HOST
685	3	1	2	173	6	12	HOST
686	3	1	2	174	6	13	HOST
687	3	1	2	175	6	14	HOST

626	2	1	2	114	4	17	HOST
627	2	1	2	115	4	18	HOST
628	2	1	2	116	4	19	HOST
629	2	1	2	117	4	20	HOST
630	2	1	2	118	4	21	HOST
631	2	1	2	119	4	22	HOST
632	2	1	2	120	4	23	HOST
633	2	1	2	121	4	24	HOST
634	2	1	2	122	4	25	HOST
635	2	1	2	123	4	26	HOST
636	2	1	2	124	4	27	HOST
637	2	1	2	125	4	28	HOST
638	2	1	2	126	4	29	HOST
639	2	1	2	127	4	30	HOST
640	2	1	2	128	4	31	HOST

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
705	4	1	2	193	7	0	RAIU
706	4	1	2	194	7	1	RAIU
707	4	1	2	195	7	2	RAIU
708	4	1	2	196	7	3	RAIU
709	4	1	2	197	7	4	RAIU
710	4	1	2	198	7	5	RAIU
711	4	1	2	199	7	6	RAIU
712	4	1	2	200	7	7	RAIU
713	4	1	2	201	7	8	RAIU
714	4	1	2	202	7	9	RAIU
715	4	1	2	203	7	10	RAIU
716	4	1	2	204	7	11	RAIU
717	4	1	2	205	7	12	RAIU
718	4	1	2	206	7	13	RAIU
719	4	1	2	207	7	14	RAIU
720	4	1	2	208	7	15	RAIU
721	4	1	2	209	7	16	RAIU
722	4	1	2	210	7	17	RAIU
723	4	1	2	211	7	18	RAIU
724	4	1	2	212	7	19	RAIU
725	4	1	2	213	7	20	RAIU
726	4	1	2	214	7	21	RAIU
727	4	1	2	215	7	22	RAIU
728	4	1	2	216	7	23	RAIU
729	4	1	2	217	7	24	RAIU
730	4	1	2	218	7	25	RAIU
731	4	1	2	219	7	26	RAIU
732	4	1	2	220	7	27	RAIU
733	4	1	2	221	7	28	RAIU
734	4	1	2	222	7	29	RAIU
735	4	1	2	223	7	30	RAIU
736	4	1	2	224	7	31	RAIU
737	4	1	2	225	8	0	HOST
738	4	1	2	226	8	1	HOST
739	4	1	2	227	8	2	HOST
740	4	1	2	228	8	3	HOST
741	4	1	2	229	8	4	HOST
742	4	1	2	230	8	5	HOST
743	4	1	2	231	8	6	HOST
744	4	1	2	232	8	7	HOST
745	4	1	2	233	8	8	HOST
746	4	1	2	234	8	9	HOST
747	4	1	2	235	8	10	HOST
748	4	1	2	236	8	11	HOST
749	4	1	2	237	8	12	HOST
750	4	1	2	238	8	13	HOST
751	4	1	2	239	8	14	HOST

688	3	1	2	176	6	15	HOST
689	3	1	2	177	6	16	HOST
690	3	1	2	178	6	17	HOST
691	3	1	2	179	6	18	HOST
692	3	1	2	180	6	19	HOST
693	3	1	2	181	6	20	HOST
694	3	1	2	182	6	21	HOST
695	3	1	2	183	6	22	HOST
696	3	1	2	184	6	23	HOST
697	3	1	2	185	6	24	HOST
698	3	1	2	186	6	25	HOST
699	3	1	2	187	6	26	HOST
700	3	1	2	188	6	27	HOST
701	3	1	2	189	6	28	HOST
702	3	1	2	190	6	29	HOST
703	3	1	2	191	6	30	HOST
704	3	1	2	192	6	31	HOST

752	4	1	2	240	8	15	HOST
753	4	1	2	241	8	16	HOST
754	4	1	2	242	8	17	HOST
755	4	1	2	243	8	18	HOST
756	4	1	2	244	8	19	HOST
757	4	1	2	245	8	20	HOST
758	4	1	2	246	8	21	HOST
759	4	1	2	247	8	22	HOST
760	4	1	2	248	8	23	HOST
761	4	1	2	249	8	24	HOST
762	4	1	2	250	8	25	HOST
763	4	1	2	251	8	26	HOST
764	4	1	2	252	8	27	HOST
765	4	1	2	253	8	28	HOST
766	4	1	2	254	8	29	HOST
767	4	1	2	255	8	30	HOST
768	4	1	2	256	8	31	HOST

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
769	5	1	2	257	9	0	RAIU
770	5	1	2	258	9	1	RAIU
771	5	1	2	259	9	2	RAIU
772	5	1	2	260	9	3	RAIU
773	5	1	2	261	9	4	RAIU
774	5	1	2	262	9	5	RAIU
775	5	1	2	263	9	6	RAIU
776	5	1	2	264	9	7	RAIU
777	5	1	2	265	9	8	RAIU
778	5	1	2	266	9	9	RAIU
779	5	1	2	267	9	10	RAIU
780	5	1	2	268	9	11	RAIU
781	5	1	2	269	9	12	RAIU
782	5	1	2	270	9	13	RAIU
783	5	1	2	271	9	14	RAIU
784	5	1	2	272	9	15	RAIU
785	5	1	2	273	9	16	RAIU
786	5	1	2	274	9	17	RAIU
787	5	1	2	275	9	18	RAIU
788	5	1	2	276	9	19	RAIU
789	5	1	2	277	9	20	RAIU
790	5	1	2	278	9	21	RAIU
791	5	1	2	279	9	22	RAIU
792	5	1	2	280	9	23	RAIU
793	5	1	2	281	9	24	RAIU
794	5	1	2	282	9	25	RAIU
795	5	1	2	283	9	26	RAIU
796	5	1	2	284	9	27	RAIU
797	5	1	2	285	9	28	RAIU
798	5	1	2	286	9	29	RAIU
799	5	1	2	287	9	30	RAIU
800	5	1	2	288	9	31	RAIU
801	5	1	2	289	10	0	HOST
802	5	1	2	290	10	1	HOST
803	5	1	2	291	10	2	HOST
804	5	1	2	292	10	3	HOST
805	5	1	2	293	10	4	HOST
806	5	1	2	294	10	5	HOST
807	5	1	2	295	10	6	HOST
808	5	1	2	296	10	7	HOST
809	5	1	2	297	10	8	HOST
810	5	1	2	298	10	9	HOST
811	5	1	2	299	10	10	HOST
812	5	1	2	300	10	11	HOST
813	5	1	2	301	10	12	HOST

CIC	RAIU	RCOMDAC	MXTS	CIRC	LINK	CHN	DIR TO
833	6	1	2	321	11	0	RAIU
834	6	1	2	322	11	1	RAIU
835	6	1	2	323	11	2	RAIU
836	6	1	2	324	11	3	RAIU
837	6	1	2	325	11	4	RAIU
838	6	1	2	326	11	5	RAIU
839	6	1	2	327	11	6	RAIU
840	6	1	2	328	11	7	RAIU
841	6	1	2	329	11	8	RAIU
842	6	1	2	330	11	9	RAIU
843	6	1	2	331	11	10	RAIU
844	6	1	2	332	11	11	RAIU
845	6	1	2	333	11	12	RAIU
846	6	1	2	334	11	13	RAIU
847	6	1	2	335	11	14	RAIU
848	6	1	2	336	11	15	RAIU
849	6	1	2	337	11	16	RAIU
850	6	1	2	338	11	17	RAIU
851	6	1	2	339	11	18	RAIU
852	6	1	2	340	11	19	RAIU
853	6	1	2	341	11	20	RAIU
854	6	1	2	342	11	21	RAIU
855	6	1	2	343	11	22	RAIU
856	6	1	2	344	11	23	RAIU
857	6	1	2	345	11	24	RAIU
858	6	1	2	346	11	25	RAIU
859	6	1	2	347	11	26	RAIU
860	6	1	2	348	11	27	RAIU
861	6	1	2	349	11	28	RAIU
862	6	1	2	350	11	29	RAIU
863	6	1	2	351	11	30	RAIU
864	6	1	2	352	11	31	RAIU
865	6	1	2	353	12	0	HOST
866	6	1	2	354	12	1	HOST
867	6	1	2	355	12	2	HOST
868	6	1	2	356	12	3	HOST
869	6	1	2	357	12	4	HOST
870	6	1	2	358	12	5	HOST
871	6	1	2	359	12	6	HOST
872	6	1	2	360	12	7	HOST
873	6	1	2	361	12	8	HOST
874	6	1	2	362	12	9	HOST
875	6	1	2	363	12	10	HOST
876	6	1	2	364	12	11	HOST
877	6	1	2	365	12	12	HOST

814	5	1	2	302	10	13	HOST
815	5	1	2	303	10	14	HOST
816	5	1	2	304	10	15	HOST
817	5	1	2	305	10	16	HOST
818	5	1	2	306	10	17	HOST
819	5	1	2	307	10	18	HOST
820	5	1	2	308	10	19	HOST
821	5	1	2	309	10	20	HOST
822	5	1	2	310	10	21	HOST
823	5	1	2	311	10	22	HOST
824	5	1	2	312	10	23	HOST
825	5	1	2	313	10	24	HOST
826	5	1	2	314	10	25	HOST
827	5	1	2	315	10	26	HOST
828	5	1	2	316	10	27	HOST
829	5	1	2	317	10	28	HOST
830	5	1	2	318	10	29	HOST
831	5	1	2	319	10	30	HOST
832	5	1	2	320	10	31	HOST

878	6	1	2	366	12	13	HOST
879	6	1	2	367	12	14	HOST
880	6	1	2	368	12	15	HOST
881	6	1	2	369	12	16	HOST
882	6	1	2	370	12	17	HOST
883	6	1	2	371	12	18	HOST
884	6	1	2	372	12	19	HOST
885	6	1	2	373	12	20	HOST
886	6	1	2	374	12	21	HOST
887	6	1	2	375	12	22	HOST
888	6	1	2	376	12	23	HOST
889	6	1	2	377	12	24	HOST
890	6	1	2	378	12	25	HOST
891	6	1	2	379	12	26	HOST
892	6	1	2	380	12	27	HOST
893	6	1	2	381	12	28	HOST
894	6	1	2	382	12	29	HOST
895	6	1	2	383	12	30	HOST
896	6	1	2	384	12	31	HOST

CIC	**RAIU**	**RCOMDAC**	**MXTS**	**CIRC**	**LINK**	**CHN**	**DIR TO**
897	-	-	2	385	13	0	EMERG
898	-	-	2	386	13	1	EMERG
899	-	-	2	387	13	2	EMERG
900	-	-	2	388	13	3	EMERG
901	-	-	2	389	13	4	EMERG
902	-	-	2	390	13	5	EMERG
903	-	-	2	391	13	6	EMERG
904	-	-	2	392	13	7	EMERG
905	-	-	2	393	13	8	EMERG
906	-	-	2	394	13	9	EMERG
907	-	-	2	395	13	10	EMERG
908	-	-	2	396	13	11	EMERG
909	-	-	2	397	13	12	EMERG
910	-	-	2	398	13	13	EMERG
911	-	-	2	399	13	14	EMERG
912	-	-	2	400	13	15	EMERG
913	-	-	2	401	13	16	EMERG
914	-	-	2	402	13	17	EMERG
915	-	-	2	403	13	18	EMERG
916	-	-	2	404	13	19	EMERG
917	-	-	2	405	13	20	EMERG
918	-	-	2	406	13	21	EMERG
919	-	-	2	407	13	22	EMERG
920	-	-	2	408	13	23	EMERG
921	-	-	2	409	13	24	EMERG
922	-	-	2	410	13	25	EMERG
923	-	-	2	411	13	26	EMERG
924	-	-	2	412	13	27	EMERG
925	-	-	2	413	13	28	EMERG
926	-	-	2	414	13	29	EMERG
927	-	-	2	415	13	30	EMERG
928	-	-	2	416	13	31	EMERG
929	-	-	2	417	14	0	EMERG
930	-	-	2	418	14	1	EMERG
931	-	-	2	419	14	2	EMERG
932	-	-	2	420	14	3	EMERG
933	-	-	2	421	14	4	EMERG
934	-	-	2	422	14	5	EMERG
935	-	-	2	423	14	6	EMERG
936	-	-	2	424	14	7	EMERG
937	-	-	2	425	14	8	EMERG
938	-	-	2	426	14	9	EMERG
939	-	-	2	427	14	10	EMERG

CIC	**RAIU**	**RCOMDAC**	**MXTS**	**CIRC**	**LINK**	**CHN**	**DIR TO**
961	-	-	2	449	15	0	EMERG
962	-	-	2	450	15	1	EMERG
963	-	-	2	451	15	2	EMERG
964	-	-	2	452	15	3	EMERG
965	-	-	2	453	15	4	EMERG
966	-	-	2	454	15	5	EMERG
967	-	-	2	455	15	6	EMERG
968	-	-	2	456	15	7	EMERG
969	-	-	2	457	15	8	EMERG
970	-	-	2	458	15	9	EMERG
971	-	-	2	459	15	10	EMERG
972	-	-	2	460	15	11	EMERG
973	-	-	2	461	15	12	EMERG
974	-	-	2	462	15	13	EMERG
975	-	-	2	463	15	14	EMERG
976	-	-	2	464	15	15	EMERG
977	-	-	2	465	15	16	EMERG
978	-	-	2	466	15	17	EMERG
979	-	-	2	467	15	18	EMERG
980	-	-	2	468	15	19	EMERG
981	-	-	2	469	15	20	EMERG
982	-	-	2	470	15	21	EMERG
983	-	-	2	471	15	22	EMERG
984	-	-	2	472	15	23	EMERG
985	-	-	2	473	15	24	EMERG
986	-	-	2	474	15	25	EMERG
987	-	-	2	475	15	26	EMERG
988	-	-	2	476	15	27	EMERG
989	-	-	2	477	15	28	EMERG
990	-	-	2	478	15	29	EMERG
991	-	-	2	479	15	30	EMERG
992	-	-	2	480	15	31	EMERG
993	-	-	2	481	16	0	EMERG
994	-	-	2	482	16	1	EMERG
995	-	-	2	483	16	2	EMERG
996	-	-	2	484	16	3	EMERG
997	-	-	2	485	16	4	EMERG
998	-	-	2	486	16	5	EMERG
999	-	-	2	487	16	6	EMERG
1000	-	-	2	488	16	7	EMERG
1001	-	-	2	489	16	8	EMERG
1002	-	-	2	490	16	9	EMERG
1003	-	-	2	491	16	10	EMERG

940	-	-	2	428	14	11	EMERG
941	-	-	2	429	14	12	EMERG
942	-	-	2	430	14	13	EMERG
943	-	-	2	431	14	14	EMERG
944	-	-	2	432	14	15	EMERG
945	-	-	2	433	14	16	EMERG
946	-	-	2	434	14	17	EMERG
947	-	-	2	435	14	18	EMERG
948	-	-	2	436	14	19	EMERG
949	-	-	2	437	14	20	EMERG
950	-	-	2	438	14	21	EMERG
951	-	-	2	439	14	22	EMERG
952	-	-	2	440	14	23	EMERG
953	-	-	2	441	14	24	EMERG
954	-	-	2	442	14	25	EMERG
955	-	-	2	443	14	26	EMERG
956	-	-	2	444	14	27	EMERG
957	-	-	2	445	14	28	EMERG
958	-	-	2	446	14	29	EMERG
959	-	-	2	447	14	30	EMERG
960	-	-	2	448	14	31	EMERG

1004	-	-	2	492	16	11	EMERG
1005	-	-	2	493	16	12	EMERG
1006	-	-	2	494	16	13	EMERG
1007	-	-	2	495	16	14	EMERG
1008	-	-	2	496	16	15	EMERG
1009	-	-	2	497	16	16	EMERG
1010	-	-	2	498	16	17	EMERG
1011	-	-	2	499	16	18	EMERG
1012	-	-	2	500	16	19	EMERG
1013	-	-	2	501	16	20	EMERG
1014	-	-	2	502	16	21	EMERG
1015	-	-	2	503	16	22	EMERG
1016	-	-	2	504	16	23	EMERG
1017	-	-	2	505	16	24	EMERG
1018	-	-	2	506	16	25	EMERG
1019	-	-	2	507	16	26	EMERG
1020	-	-	2	508	16	27	EMERG
1021	-	-	2	509	16	28	EMERG
1022	-	-	2	510	16	29	EMERG
1023	-	-	2	511	16	30	EMERG
1024	-	-	2	512	16	31	EMERG

B. Annex - Correspondence of subscriber numbers

Overview

Purpose To show the correspondence of subscriber numbers between the E/RAIU and the BZ-RS.

E/RAIU OE numbers x BZ-RS RMT numbers

The following table shows the correspondence of subscriber numbers between the E/RAIU and the BZ-RS (E/RAIU OE numbers to BZ-RS RMT numbers).
The SM and E/RAIU parameters are defined in the field RAIU inside the CR-PS command.
AP is the E/RAIU Application Pack and LC is the Line Circuit number inside each AP.

SM	E/RAIU	AP	LC	PS	POS
XXX	YYY	0	0	[1..6]	1
XXX	YYY	0	1	[1..6]	2
XXX	YYY	0	2	[1..6]	3
XXX	YYY	0	3	[1..6]	4
XXX	YYY	0	4	[1..6]	5
XXX	YYY	0	5	[1..6]	6
XXX	YYY	0	6	[1..6]	7
XXX	YYY	0	7	[1..6]	8
XXX	YYY	0	8	[1..6]	9
XXX	YYY	0	9	[1..6]	10
XXX	YYY	0	10	[1..6]	11
XXX	YYY	0	11	[1..6]	12
XXX	YYY	0	12	[1..6]	13
XXX	YYY	0	13	[1..6]	14
XXX	YYY	0	14	[1..6]	15
XXX	YYY	0	15	[1..6]	16
XXX	YYY	0	16	[1..6]	17
XXX	YYY	0	17	[1..6]	18
XXX	YYY	0	18	[1..6]	19
XXX	YYY	0	19	[1..6]	20
XXX	YYY	0	20	[1..6]	21
XXX	YYY	0	21	[1..6]	22
XXX	YYY	0	22	[1..6]	23
XXX	YYY	0	23	[1..6]	24
XXX	YYY	0	24	[1..6]	25
XXX	YYY	0	25	[1..6]	26
XXX	YYY	0	26	[1..6]	27
XXX	YYY	0	27	[1..6]	28
XXX	YYY	0	28	[1..6]	29
XXX	YYY	0	29	[1..6]	30
XXX	YYY	0	30	[1..6]	31
XXX	YYY	0	31	[1..6]	32
XXX	YYY	1	0	[1..6]	33
XXX	YYY	1	1	[1..6]	34
XXX	YYY	1	2	[1..6]	35
XXX	YYY	1	3	[1..6]	36
XXX	YYY	1	4	[1..6]	37
XXX	YYY	1	5	[1..6]	38
XXX	YYY	1	6	[1..6]	39
XXX	YYY	1	7	[1..6]	40
XXX	YYY	1	8	[1..6]	41
XXX	YYY	1	9	[1..6]	42
XXX	YYY	1	10	[1..6]	43
XXX	YYY	1	11	[1..6]	44
XXX	YYY	1	12	[1..6]	45
XXX	YYY	1	13	[1..6]	46
XXX	YYY	1	14	[1..6]	47
XXX	YYY	1	15	[1..6]	48
XXX	YYY	1	16	[1..6]	49
XXX	YYY	1	17	[1..6]	50
XXX	YYY	1	18	[1..6]	51
XXX	YYY	1	19	[1..6]	52
XXX	YYY	1	20	[1..6]	53
XXX	YYY	1	21	[1..6]	54
XXX	YYY	1	22	[1..6]	55
XXX	YYY	1	23	[1..6]	56
XXX	YYY	1	24	[1..6]	57
XXX	YYY	1	25	[1..6]	58
XXX	YYY	1	26	[1..6]	59
XXX	YYY	1	27	[1..6]	60
XXX	YYY	1	28	[1..6]	61
XXX	YYY	1	29	[1..6]	62
XXX	YYY	1	30	[1..6]	63

SM	E/RAIU	AP	LC	PS	POS
XXX	YYY	2	0	[1..6]	65
XXX	YYY	2	1	[1..6]	66
XXX	YYY	2	2	[1..6]	67
XXX	YYY	2	3	[1..6]	68
XXX	YYY	2	4	[1..6]	69
XXX	YYY	2	5	[1..6]	70
XXX	YYY	2	6	[1..6]	71
XXX	YYY	2	7	[1..6]	72
XXX	YYY	2	8	[1..6]	73
XXX	YYY	2	9	[1..6]	74
XXX	YYY	2	10	[1..6]	75
XXX	YYY	2	11	[1..6]	76
XXX	YYY	2	12	[1..6]	77
XXX	YYY	2	13	[1..6]	78
XXX	YYY	2	14	[1..6]	79
XXX	YYY	2	15	[1..6]	80
XXX	YYY	2	16	[1..6]	81
XXX	YYY	2	17	[1..6]	82
XXX	YYY	2	18	[1..6]	83
XXX	YYY	2	19	[1..6]	84
XXX	YYY	2	20	[1..6]	85
XXX	YYY	2	21	[1..6]	86
XXX	YYY	2	22	[1..6]	87
XXX	YYY	2	23	[1..6]	88
XXX	YYY	2	24	[1..6]	89
XXX	YYY	2	25	[1..6]	90
XXX	YYY	2	26	[1..6]	91
XXX	YYY	2	27	[1..6]	92
XXX	YYY	2	28	[1..6]	93
XXX	YYY	2	29	[1..6]	94
XXX	YYY	2	30	[1..6]	95
XXX	YYY	2	31	[1..6]	96
XXX	YYY	3	0	[1..6]	97
XXX	YYY	3	1	[1..6]	98
XXX	YYY	3	2	[1..6]	99
XXX	YYY	3	3	[1..6]	100
XXX	YYY	3	4	[1..6]	101
XXX	YYY	3	5	[1..6]	102
XXX	YYY	3	6	[1..6]	103
XXX	YYY	3	7	[1..6]	104
XXX	YYY	3	8	[1..6]	105
XXX	YYY	3	9	[1..6]	106
XXX	YYY	3	10	[1..6]	107
XXX	YYY	3	11	[1..6]	108
XXX	YYY	3	12	[1..6]	109
XXX	YYY	3	13	[1..6]	110
XXX	YYY	3	14	[1..6]	111
XXX	YYY	3	15	[1..6]	112
XXX	YYY	3	16	[1..6]	113
XXX	YYY	3	17	[1..6]	114
XXX	YYY	3	18	[1..6]	115
XXX	YYY	3	19	[1..6]	116
XXX	YYY	3	20	[1..6]	117
XXX	YYY	3	21	[1..6]	118
XXX	YYY	3	22	[1..6]	119
XXX	YYY	3	23	[1..6]	120
XXX	YYY	3	24	[1..6]	121
XXX	YYY	3	25	[1..6]	122
XXX	YYY	3	26	[1..6]	123
XXX	YYY	3	27	[1..6]	124
XXX	YYY	3	28	[1..6]	125
XXX	YYY	3	29	[1..6]	126
XXX	YYY	3	30	[1..6]	127

SM	E/RAIU	AP	LC	PS	POS
XXX	YYY	4	0	[1..6]	129
XXX	YYY	4	1	[1..6]	130
XXX	YYY	4	2	[1..6]	131
XXX	YYY	4	3	[1..6]	132
XXX	YYY	4	4	[1..6]	133
XXX	YYY	4	5	[1..6]	134
XXX	YYY	4	6	[1..6]	135
XXX	YYY	4	7	[1..6]	136
XXX	YYY	4	8	[1..6]	137
XXX	YYY	4	9	[1..6]	138
XXX	YYY	4	10	[1..6]	139
XXX	YYY	4	11	[1..6]	140
XXX	YYY	4	12	[1..6]	141
XXX	YYY	4	13	[1..6]	142
XXX	YYY	4	14	[1..6]	143
XXX	YYY	4	15	[1..6]	144
XXX	YYY	4	16	[1..6]	145
XXX	YYY	4	17	[1..6]	146
XXX	YYY	4	18	[1..6]	147
XXX	YYY	4	19	[1..6]	148
XXX	YYY	4	20	[1..6]	149
XXX	YYY	4	21	[1..6]	150
XXX	YYY	4	22	[1..6]	151
XXX	YYY	4	23	[1..6]	152
XXX	YYY	4	24	[1..6]	153
XXX	YYY	4	25	[1..6]	154
XXX	YYY	4	26	[1..6]	155
XXX	YYY	4	27	[1..6]	156
XXX	YYY	4	28	[1..6]	157
XXX	YYY	4	29	[1..6]	158
XXX	YYY	4	30	[1..6]	159
XXX	YYY	4	31	[1..6]	160
XXX	YYY	5	0	[1..6]	161
XXX	YYY	5	1	[1..6]	162
XXX	YYY	5	2	[1..6]	163
XXX	YYY	5	3	[1..6]	164
XXX	YYY	5	4	[1..6]	165
XXX	YYY	5	5	[1..6]	166
XXX	YYY	5	6	[1..6]	167
XXX	YYY	5	7	[1..6]	168
XXX	YYY	5	8	[1..6]	169
XXX	YYY	5	9	[1..6]	170
XXX	YYY	5	10	[1..6]	171
XXX	YYY	5	11	[1..6]	172
XXX	YYY	5	12	[1..6]	173
XXX	YYY	5	13	[1..6]	174
XXX	YYY	5	14	[1..6]	175
XXX	YYY	5	15	[1..6]	176
XXX	YYY	5	16	[1..6]	177
XXX	YYY	5	17	[1..6]	178
XXX	YYY	5	18	[1..6]	179
XXX	YYY	5	19	[1..6]	180
XXX	YYY	5	20	[1..6]	181
XXX	YYY	5	21	[1..6]	182
XXX	YYY	5	22	[1..6]	183
XXX	YYY	5	23	[1..6]	184
XXX	YYY	5	24	[1..6]	185
XXX	YYY	5	25	[1..6]	186
XXX	YYY	5	26	[1..6]	187
XXX	YYY	5	27	[1..6]	188
XXX	YYY	5	28	[1..6]	189
XXX	YYY	5	29	[1..6]	190
XXX	YYY	5	30	[1..6]	191

XXX	YYY	1	31	[1..6]	64
XXX	YYY	6	0	[1..6]	193
XXX	YYY	6	1	[1..6]	194
XXX	YYY	6	2	[1..6]	195
XXX	YYY	6	3	[1..6]	196
XXX	YYY	6	4	[1..6]	197
XXX	YYY	6	5	[1..6]	198
XXX	YYY	6	6	[1..6]	199
XXX	YYY	6	7	[1..6]	200
XXX	YYY	6	8	[1..6]	201
XXX	YYY	6	9	[1..6]	202
XXX	YYY	6	10	[1..6]	203
XXX	YYY	6	11	[1..6]	204
XXX	YYY	6	12	[1..6]	205
XXX	YYY	6	13	[1..6]	206
XXX	YYY	6	14	[1..6]	207
XXX	YYY	6	15	[1..6]	208
XXX	YYY	6	16	[1..6]	209
XXX	YYY	6	17	[1..6]	210
XXX	YYY	6	18	[1..6]	211
XXX	YYY	6	19	[1..6]	212
XXX	YYY	6	20	[1..6]	213
XXX	YYY	6	21	[1..6]	214
XXX	YYY	6	22	[1..6]	215
XXX	YYY	6	23	[1..6]	216
XXX	YYY	6	24	[1..6]	217
XXX	YYY	6	25	[1..6]	218
XXX	YYY	6	26	[1..6]	219
XXX	YYY	6	27	[1..6]	220
XXX	YYY	6	28	[1..6]	221
XXX	YYY	6	29	[1..6]	222
XXX	YYY	6	30	[1..6]	223
XXX	YYY	6	31	[1..6]	224
XXX	YYY	7	0	[1..6]	225
XXX	YYY	7	1	[1..6]	226
XXX	YYY	7	2	[1..6]	227
XXX	YYY	7	3	[1..6]	228
XXX	YYY	7	4	[1..6]	229
XXX	YYY	7	5	[1..6]	230
XXX	YYY	7	6	[1..6]	231
XXX	YYY	7	7	[1..6]	232
XXX	YYY	7	8	[1..6]	233
XXX	YYY	7	9	[1..6]	234
XXX	YYY	7	10	[1..6]	235
XXX	YYY	7	11	[1..6]	236
XXX	YYY	7	12	[1..6]	237
XXX	YYY	7	13	[1..6]	238
XXX	YYY	7	14	[1..6]	239
XXX	YYY	7	15	[1..6]	240
XXX	YYY	7	16	[1..6]	241
XXX	YYY	7	17	[1..6]	242
XXX	YYY	7	18	[1..6]	243
XXX	YYY	7	19	[1..6]	244
XXX	YYY	7	20	[1..6]	245
XXX	YYY	7	21	[1..6]	246
XXX	YYY	7	22	[1..6]	247
XXX	YYY	7	23	[1..6]	248
XXX	YYY	7	24	[1..6]	249
XXX	YYY	7	25	[1..6]	250
XXX	YYY	7	26	[1..6]	251
XXX	YYY	7	27	[1..6]	252
XXX	YYY	7	28	[1..6]	253
XXX	YYY	7	29	[1..6]	254
XXX	YYY	7	30	[1..6]	255
XXX	YYY	7	31	[1..6]	256
XXX	YYY	12	0	[1..6]	385

XXX	YYY	3	31	[1..6]	128
XXX	YYY	8	0	[1..6]	257
XXX	YYY	8	1	[1..6]	258
XXX	YYY	8	2	[1..6]	259
XXX	YYY	8	3	[1..6]	260
XXX	YYY	8	4	[1..6]	261
XXX	YYY	8	5	[1..6]	262
XXX	YYY	8	6	[1..6]	263
XXX	YYY	8	7	[1..6]	264
XXX	YYY	8	8	[1..6]	265
XXX	YYY	8	9	[1..6]	266
XXX	YYY	8	10	[1..6]	267
XXX	YYY	8	11	[1..6]	268
XXX	YYY	8	12	[1..6]	269
XXX	YYY	8	13	[1..6]	270
XXX	YYY	8	14	[1..6]	271
XXX	YYY	8	15	[1..6]	272
XXX	YYY	8	16	[1..6]	273
XXX	YYY	8	17	[1..6]	274
XXX	YYY	8	18	[1..6]	275
XXX	YYY	8	19	[1..6]	276
XXX	YYY	8	20	[1..6]	277
XXX	YYY	8	21	[1..6]	278
XXX	YYY	8	22	[1..6]	279
XXX	YYY	8	23	[1..6]	280
XXX	YYY	8	24	[1..6]	281
XXX	YYY	8	25	[1..6]	282
XXX	YYY	8	26	[1..6]	283
XXX	YYY	8	27	[1..6]	284
XXX	YYY	8	28	[1..6]	285
XXX	YYY	8	29	[1..6]	286
XXX	YYY	8	30	[1..6]	287
XXX	YYY	8	31	[1..6]	288
XXX	YYY	9	0	[1..6]	289
XXX	YYY	9	1	[1..6]	290
XXX	YYY	9	2	[1..6]	291
XXX	YYY	9	3	[1..6]	292
XXX	YYY	9	4	[1..6]	293
XXX	YYY	9	5	[1..6]	294
XXX	YYY	9	6	[1..6]	295
XXX	YYY	9	7	[1..6]	296
XXX	YYY	9	8	[1..6]	297
XXX	YYY	9	9	[1..6]	298
XXX	YYY	9	10	[1..6]	299
XXX	YYY	9	11	[1..6]	300
XXX	YYY	9	12	[1..6]	301
XXX	YYY	9	13	[1..6]	302
XXX	YYY	9	14	[1..6]	303
XXX	YYY	9	15	[1..6]	304
XXX	YYY	9	16	[1..6]	305
XXX	YYY	9	17	[1..6]	306
XXX	YYY	9	18	[1..6]	307
XXX	YYY	9	19	[1..6]	308
XXX	YYY	9	20	[1..6]	309
XXX	YYY	9	21	[1..6]	310
XXX	YYY	9	22	[1..6]	311
XXX	YYY	9	23	[1..6]	312
XXX	YYY	9	24	[1..6]	313
XXX	YYY	9	25	[1..6]	314
XXX	YYY	9	26	[1..6]	315
XXX	YYY	9	27	[1..6]	316
XXX	YYY	9	28	[1..6]	317
XXX	YYY	9	29	[1..6]	318
XXX	YYY	9	30	[1..6]	319
XXX	YYY	9	31	[1..6]	320
XXX	YYY	14	0	[1..6]	449

XXX	YYY	5	31	[1..6]	192
XXX	YYY	10	0	[1..6]	321
XXX	YYY	10	1	[1..6]	322
XXX	YYY	10	2	[1..6]	323
XXX	YYY	10	3	[1..6]	324
XXX	YYY	10	4	[1..6]	325
XXX	YYY	10	5	[1..6]	326
XXX	YYY	10	6	[1..6]	327
XXX	YYY	10	7	[1..6]	328
XXX	YYY	10	8	[1..6]	329
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