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Meridian 1 Options 21 through 81C

# Fault Clearing Guide

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## Revision history

### **June 1999**

Standard 5.00. This document is up-issued for software Release 24.2x. New messages have been added to the BUG, ERR, CSA, DCH, DTI, IOD, MSDL, NPR, SYS, TRA, and TRK sections.

### **December 1997**

First standard release of documentation for software Release 23.0x. New messages have been added to the AUD, BUG, CCED, CIOD, EDD, ERR, HWI, NPR, and SYS sections.

### **September 1996**

First standard release of documentation for software Release 22.0x

### **January 1996**

First standard release of documentation for software Release 21.1x

### **September 1995**

First standard release of documentation for software Release 20.1x



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## About this guide

### Who should use this guide

This guide is intended for use by on-site technicians to clear faults on Meridian 1 Options 21 through 81.

### How to use this guide

To use this guide, comply with the following steps:

1. Refer to the *Table of Contents*.
2. Locate the chapter *Start here to find faults*.
3. Follow the *Basic system fault finding* flow chart.

If the system develops a fault, the system will issue a message mnemonic that tells you what is wrong. For example **BSD815**.

This guide is arranged so you can respond to system messages.

### The use of *italics* in this guide

*Italics* are used to indicate a title.

Italic titles that contain capital letters are the exact titles. For example: *Automatic Call Distribution reference guide*

Italic titles that do not contain capital letters are generic titles. For example: *administration input/output guide*

In some cases it is not possible to exactly match the title of a referred Northern Telecom Publication (NTP). For example the *Software input/output guide* NTP, the *X11 input /output guide* NTP, and the *DATA ADMINISTRATION INPUT/OUTPUT REFERENCE* NTP

contain similar material but have different titles depending on the release. These NTPs are referred by the generic title *administration input/output guide*.

## How the chapters of this guide work

### Table of Contents

The *Table of Contents* is very compact as it lists only the chapter headings, in alphabetical order. The chapter heading begins with a message mnemonic. This arrangement allows you to quickly locate the chapters that match the system message.

### Chapter table of contents

Chapters that contain many sections have a mini table of contents at the beginning of the chapter. The mini table of contents is called *In this chapter*. *In this chapter* is included so you do not have to return to the *Table of Contents* to locate a section within the chapter. This arrangement also keeps the *Table of Contents* compact and easy to use.

### Header mnemonics

Large type size chapter mnemonics are included in the header at the top of the page. This chapter does not have a mnemonic. Therefore, all you see in this header is the page number and *About this guide*. The large type mnemonic is included for those of you who like to thumb through the pages to locate the chapter you need.

### Message description and actions

Most of the system messages are mnemonic codes. Each mnemonic code has its own chapter. Every mnemonic code has a message description and an action. For example:

#### **NPR000**

LD 32 program identifier.

**ACTION:** The NPR program is loaded and ready for you to enter commands.

The actions are grouped into four broad classes, as follows.

- ◆ changing hardware components
- ◆ changing the response to administration programming
- ◆ contacting your technical support group
- ◆ information only, no action required

## Chapter structure

Certain mnemonic messages indicate card or hardware faults. For example **IOD060**. These chapters contain the following:

- ◆ a description of the card
- ◆ a graphic representation of the card
- ◆ a faceplate hexadecimal display description and action, if applicable
- ◆ the overlay load (LD) used to test the card
- ◆ messages pertaining to the card

All the information about the card is located in one area within the chapter.

## Card faceplate hexadecimal displays

Card faceplate hexadecimal displays are found by locating the card name in the *Index of cards*. The descriptions and actions for the display follows the card description.

## How commands are represented

The overlay load (LD) command design allows you to scan the commands without reading the description. If you need to read it, the complete description is located to the right of the command.

The commands used to interact with each card are grouped together. Each group of commands are located after the description of the card.

## Diagnostic column layout

The title bar, depicted below, appears at the top of each page containing diagnostic commands:

| PE unit commands |             |         |
|------------------|-------------|---------|
| Command          | Description | Release |

The following explains the meaning of each heading in the title bar.

**Command** - This column shows the format of the input keyed on a DTE or telephone.

**Description** - This column explains the following:

- ◆ how the system components react to commands
- ◆ the structure of the lengthy output formats
- ◆ special instructions

**Release** - Release indicates the software package or machine type and earliest software release needed to use this command.

Commands are grouped according to the activity to be performed on a given entity (hardware, customer, route and so on). For example in LD 32 the commands STAT l s c u, DISU l s c u, and ENLU l s c u, are under the activity header *PE unit commands* (the black bar above the Command Description Release bar in this example).

The commands are in the order of use, as follows:

- ◆ status
- ◆ disable
- ◆ enable
- ◆ test, list or print

## How TTY entries and print outs are represented

A system printout on a TTY is represented in this guide by Courier Bold font, as follows:

**TIM061 09:00 9/3/1995 CPU0**

An entry you type on the TTY keyboard is represented in this guide by Courier font, as follows:

STAT 10 0 5 14

## Icons, precautionary messages, and flowchart symbols

These symbols and icons are used in the guide.

### Icons and precautionary messages



#### **CAUTION**

This symbol alerts you to the risk of a service interruption.



#### **WARNING**

This symbol alerts you to the risk of causing electrostatic damage to components.



**DANGER**

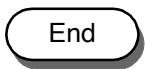
This symbol alerts you to the risk of personal injury or death caused by electric shock.

## Flowchart symbols

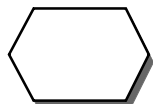
This guide uses CCITT standard flowchart symbols.



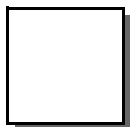
Every flowchart begins with this symbol.



This symbol appears at the end of a pathway within a flowchart.



This symbol contains text explaining what you have to decide.



This symbol contains text explaining an action that you should take or information that you should know.

## Terminology

Terminology is not explained within the text where it appears. Terminology is explained in the last chapter of this guide, *Terms and abbreviations*. This arrangement allows you to glean the information without pausing to read an explanation you may already understand.

If you have any suggestions for additions to this chapter, or this guide, please let us know.

Fax to: Terminology,

Dept. 9V50,

Nortel

506-674-7314

## Language standards and translations

This document is written to North American English standards. For versions of this document in other than North American English, please check with your supplier or with Nortel. 





# You should know this

## In this chapter

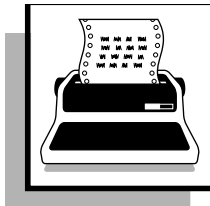
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## Communicating with the Meridian 1

### System terminal

You can exchange information within the systems through system terminals and maintenance telephones.



Communication with the Meridian 1 is accomplished by using a RS232 Data Terminal Equipment (DTE), or TTY as they are commonly called, to access the CPU. A DTE device can operate in the following two modes:

- ◆ receiving status and error messages from the Meridian 1 CPU
- ◆ transmitting input commands via the keyboard to the CPU

### How many DTE Devices can interact with the system?

Many devices can receive status and error messages from the system. The Multi User Log In feature allows up to three devices to input to the Meridian 1. Without the Multi User Log In feature, only one device at a time can input commands to the system. To determine if your system has Multi User Log In, use LD 22 PRT PKG to check if package MULT\_USER 242 is included in the software.

### System message outputs

All systems output coded messages. This guide, in the appropriate sections, explains the codes and any required action. The Option 51C, 61C and 81 outputs coded system messages similar to all other systems, except for the Core messages. These Core messages are output in plain language.

### Data output speed

Without the *Enhanced (I/O) Buffering* feature, if the same data is sent to more than one port, the throughput of each port equals the speed of the slowest device. For example, if a traffic report prints on two ports, one configured for 9600 baud and the other for 300 baud, the effective throughput of both ports is 300 baud.

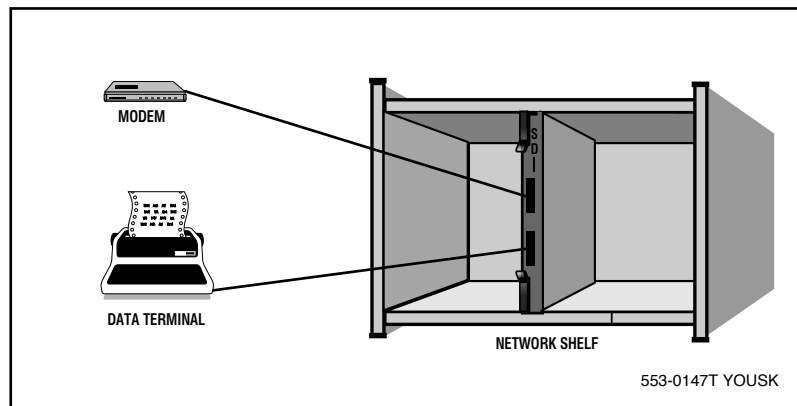
The Enhanced I/O Buffering feature for independent throughput provides the capability to output data at the speed set for each port, rather than the speed of the slowest port.

## Local and remote access

You can access a Meridian 1 at the site or remotely. To gain local access to a Meridian 1, connect a system terminal directly to a Serial Data Interface (SDI) card. For remote access, a telephone line and a Data Circuit-Terminating Equipment (DCE), commonly called a modem, are required between the terminal and the SDI card.

A DTE or a DCE must remain permanently connected to an SDI port in order to provide a constant I/O interface to the system

The SDI card is located in a network shelf or module.



## You should know this before you Log In

Log In allows you to access the overlay area. The overlay area is part of Meridian 1 memory and it is used to run maintenance and administration programs.

You can command the system to load one maintenance or administration program into the overlay area at a time.

To check for users in the overlay area, press the DTE keyboard return key. The system outputs one of the following:

- ◆ OVL111 nn TTY x shows an SDI device active in the overlay area
- ◆ OVL111 nn SL-1 shows a maintenance telephone active in the overlay area

- ◆ OVL111 nn IDLE/BKGD shows an idle system or a background routine running in the overlay area
- ◆ OVL000 shows that you activated Log In
- ◆ OVL111 nn FHWR shows the Localized Faulty Hardware Recovery feature is disabling faulty hardware. Unless it is absolutely necessary, do not log in until the FHWR is finished. If you do log in the FHWR will continue after you Log Out.

To Log In while another device is already active will cause that device to Log Out, unless the Multi User Log In feature is equipped.

There are two levels of password and either can be used to Log In.

- ◆ Level 1, a general password is used by service personnel.
- ◆ Level 2, an administrative password is used by the person responsible for the system, or the system administrator, to protect LD 17, the configuration record.

The initial or default password is 0000 or the system serial number, and should be changed subsequent to the first Log In.

Except for the Option 51C, 61C, 81 and 81C all keyboard inputs require uppercase text. The Option 51C, 61C, 81 and 81C will accept either uppercase or lowercase inputs.

If your systems has Limited Access Passwords (LAPW), and the Log In option LNAME\_OPTION is changed from NO to YES, the Log In is as follows:

```
LOGI ADMIN1<cr>
```

```
PASS? xxxx
```

The ADMIN1 can be changed to a user name consisting of any combination of upper and lower case characters from four to sixteen with no spaces.

Use LD 22 PRT, PKG to print a list of your system packages. If you have package 164 LAPW, your system is equipped with Limited Access Passwords.

For more information, refer to the Fault Clearing Guide, Book 3 of 3, Management Applications.



## How to Log In and Log Out

| STEP                                                    | ACTION                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |    |                                                         |        |                                           |                                                     |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---------------------------------------------------------|--------|-------------------------------------------|-----------------------------------------------------|
| <b>1</b>                                                | <b>Log In.</b><br>Type LOGI and then press the <i>return</i> or <i>enter</i> key.<br>System responds by displaying PASS?                                                                                                                                                                                                                                                                                                                             |    |    |                                                         |        |                                           |                                                     |
| <b>2</b>                                                | <b>Enter the password.</b><br>Type level 1 or 2 password then press the <i>return</i> or <i>enter</i> key.                                                                                                                                                                                                                                                                                                                                           |    |    |                                                         |        |                                           |                                                     |
| <b>3</b>                                                | <b>The system's response.</b><br><table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>the system responds with<br/>&gt; or OVL111 nn<br/>IDLE/BKGD</td><td>step 4</td></tr> <tr> <td>the system responds with<br/>anything else</td><td>negotiate with the other<br/>users for Log In rights</td></tr> </table>                                                                                                                                         | If | Do | the system responds with<br>> or OVL111 nn<br>IDLE/BKGD | step 4 | the system responds with<br>anything else | negotiate with the other<br>users for Log In rights |
| If                                                      | Do                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |    |                                                         |        |                                           |                                                     |
| the system responds with<br>> or OVL111 nn<br>IDLE/BKGD | step 4                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |    |                                                         |        |                                           |                                                     |
| the system responds with<br>anything else               | negotiate with the other<br>users for Log In rights                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |                                                         |        |                                           |                                                     |
| <b>4</b>                                                | <b>Select an overlay.</b><br>Type LD xx then press the <i>return</i> or <i>enter</i> key. xx is the number of the program or load in which you want to work.                                                                                                                                                                                                                                                                                         |    |    |                                                         |        |                                           |                                                     |
| <b>5</b>                                                | <b>Perform tasks</b><br>When you are finished your tasks, do step 6.                                                                                                                                                                                                                                                                                                                                                                                 |    |    |                                                         |        |                                           |                                                     |
| <b>6</b>                                                | <b>Stop the overlay.</b><br>Type END or **** to end the program and reserve the overlay area for you for 20 minutes. **** aborts the program and the overlay area allowing the system to use the overlay area for daily routines. If you abort the current program when the system is running daily routines, you have to Log In again to use another program. If you END the current program you can use another program, without Logging In again. |    |    |                                                         |        |                                           |                                                     |
| <b>7</b>                                                | <b>Log Out</b><br>Type LOGO then press the <i>return</i> or <i>enter</i> key, to end the session. This allows the system to resume background routines.                                                                                                                                                                                                                                                                                              |    |    |                                                         |        |                                           |                                                     |
| <b>END</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |    |                                                         |        |                                           |                                                     |



### Things to remember when you are in a load

- ◆ When the system prompts you for an input, you must press the return key before that input is processed.
- ◆ If the input is not correct, the system outputs an error code and reprompts you. The error codes are explained in this guide in the appropriate chapters. See the Table of Contents for chapter locations.
- ◆ The Line Mode Interface feature, allows the system to accept a backspace to correct an input. Without the Line Mode Interface feature, a backspace will cause a re-prompt.
- ◆ Maintenance diagnostic loads can be run coincidental with call processing.
- ◆ If you disable a line card, all the telephones connected to that card will be inoperative.

## Meridian 1 Fault Management

Meridian 1 Fault Management Alarm Filtering, allows a technician to simplify and control messages from a Meridian 1 system and its Application Processors.

Meridian 1 Fault Management requires the package 243 Alarm Filtering. Use LD 22 PRT , PKG to printout your system packages

### Alarm filtering

#### Alarm definition

An alarm is an X11 system message.

A system alarm is a message that is not the direct result of operator actions. ERRxxx is an example of a system alarm.

An overlay alarm is a message that results from an operator's interaction with an overlay. SCHxxx is an example of an overlay alarm.

## What is alarm filtering?

With alarm filtering, a terminal (DTE or DCE) can be configured to receive only those system messages that require intervention. Other system messages not filtered can be stored in the History File.

Alarm filtering is controlled by the contents of the Alarm Filter Table, configured in LD 17 and printed in LD 22. The Alarm Filter Table consists of the Alarm Filter List and the Exception List; a default table is provided. Messages that match an entry in the Alarm Filter List and *not* in the Exception List are sent to the system terminal.

For example, the Alarm Filter List might include CED+++, indicating that all CED messages are sent to the terminal. However, if the Exception List includes CED000, then CED000 is *not* sent to the terminal.

## Filter limits

Only system alarms can be filtered. Traffic messages and overlay alarms, as well as SYSxxx and INIxxx messages, cannot be filtered and will always appear on maintenance terminals.

### Number of entries in table

The maximum number of entries in the Alarm Filter Table is 50 alarms and 50 exceptions.

### Output contents

Filtered output contains only the first line of the system message.

### After a system reload

After a system reload, the system time and date must be reconfigured. If they are not, the time and date stamps for Meridian 1 alarms will be incorrect.

## Output format for filtered alarms

All displayed system messages will appear in the following three-line format. The second and third lines are optional.

```
<severity><id><time><date><seq no><event><type>  
<TAB>Operator data:<operator data>  
<TAB>Expert data:<expert data>
```





### Example of a formatted output

```
* SRPT0752 12/08/96 10:35:52 129012
   OPRDAT: 1 0 0
```

\* = Alarm severity:

- \*\*\* indicates Critical
- \*\* indicates Major
- \* indicates Minor
- (blank) indicates None

SRPT= a unique identifier for the error, up to 10 characters

12/08/96 = date, DD/MM/YY

10:35:52 = time, HH:MM:SS

129012 = Sequence number of this alarm report

OPRDAT: = A 30-character field to help determine how to clear the fault

1 0 0 = loop 1, shelf 0, card 0

If there are no message parameters, OPRDAT will not be printed.

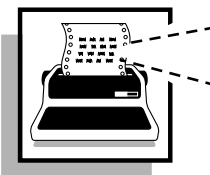
## Implementation

Use LD17 to define alarm filters and exceptions on a per-system basis.

## Print an alarm filter list and exception list

Use Overlay 22 PRT, ALARM.

A sample of the output produced appears below. The “MAJOR+” in the second line of the Alarm Filter Summary indicates that the alarm was escalated to a CRITICAL severity.



```
FMT_OUTPUT: ON
AF_STATUS: ON
```

**LD17**—Configure Alarm and Exception Filter Data

| Prompt        | Response                                     | Description                                                                                                                                                                                                                                                                                                                                                              |
|---------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REQ           | CHG                                          | Change existing information.                                                                                                                                                                                                                                                                                                                                             |
| TYPE          | ALARM                                        | Access the default Alarm Filter Table; system responds by displaying the current settings for the Formatted Output and Alarm Filter options as either ON or OFF:<br>FMT_OUTPUT(ON or OFF)<br>AF_STATUS(ON or OFF)                                                                                                                                                        |
| FMT_OUTPUT:   | ON<br>(OFF)<br><CR>                          | Enable Formatted Output printing.<br>Disable Formatted Output printing.<br>Retain current setting.                                                                                                                                                                                                                                                                       |
| AF_STATUS:    | ON<br>(OFF)<br><CR>                          | Enable Alarm and Exception Filtering.<br>Disable Alarm and Exception Filtering.<br>Retain current setting.                                                                                                                                                                                                                                                               |
| A_FILTER:     | NEW<br>CHG<br>OUT<br>X<br><CR>               | Create a new Alarm Filter entry.<br>Change an existing entry.<br>Remove an existing entry.<br>Remove an existing entry.<br>Exit Alarm Filter entry.                                                                                                                                                                                                                      |
| TRIGGER:      | aa . . . aa<br><br><CR>                      | Enter string of up to 10 characters, containing the message mnemonic and the specific message number or the plus sign (+) to represent a range of numbers from 0 to 9. This identifies a message series to be displayed on a TTY with a LD 17 USER status of FIL.<br>Retain the current value for this parameter.                                                        |
| SEVERITY:     | Critical<br>Major<br>Minor<br>(None)<br><CR> | Identify the severity of the alarm type to be filtered:<br><br>Conditions that threaten operational status<br>Serious but operational conditions<br>Other error conditions<br>Conditions with no severity rating<br>Retain the current value for this parameter<br>The severity level is used for output formatting and for potential escalation from Major to Critical. |
| — continued — |                                              |                                                                                                                                                                                                                                                                                                                                                                          |

**LD17—Configure Alarm and Exception Filter Data**

| Prompt    | Response                | Description                                                                                                                                                                                                                                                             |
|-----------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SUPPRESS: | 0—( 5 )—12<br>7         | Enter the number of times an alarm can occur within a 24-hour period before it is suppressed. 0 disables suppression. Using this threshold can reduce the number of redundant messages that appear at the terminal.                                                     |
| ESCALATE: | 0—( 2 )—12<br>7         | Enter the number of times a major alarm can occur before it is escalated to critical; 0 disables escalation.                                                                                                                                                            |
| A_FILTER: | <CR>                    | Exit Alarm Filter entry.                                                                                                                                                                                                                                                |
| E_FILTER  | NEW<br>OUT<br>X<br><CR> | Create a new Exception entry.<br>Remove an existing entry.<br>Remove an existing entry.<br>Exit Exception entry.                                                                                                                                                        |
| TRIGGER:  | aa...aa                 | Enter a string of up to 10 characters, containing the message mnemonic and the specific message number or the plus sign (+) to represent a range of numbers from 0 to 9. This identifies a message series not to be displayed on a TTY with a LD 17 USER status of FIL. |
| E_FILTER: | <CR>                    | Exit Exception entry.                                                                                                                                                                                                                                                   |

**ALARM FILTER SUMMARY**

| TRIGGER | SEVERITY | SUPPRESS | ESCALATE |
|---------|----------|----------|----------|
| DCH+++  | MAJOR    | 005      | 001      |
| ERR+++  | MAJOR+   | 005      | 001      |
| MSDL+++ | MAJOR    | 005      | 001      |

**EXCEPTION FILTER SUMMARY**

TRIGGER

DCH100

OVL003

## Printing an alarm summary

Use Overlay 02, prompt ASUM.

A sample of the output produced appears below:



```
FMT_OUTPUT: ON
AF_STATUS: ON
```

### ALARM FILTER SUMMARY

| TRIGGER | SEVERITY | COUNT |
|---------|----------|-------|
| DCH+++  | MAJOR+   | 020   |
| ERR+++  | MAJOR+   | 020   |
| MSDL+++ | CRITICAL | 001   |

### EXCEPTION FILTER SUMMARY

```
TRIGGER
ERR020
```

## System Message Lookup Utility

The System Message Lookup Utility is available exclusively on Option 51C, 61C and 81 systems. This utility provides the ability to look up Meridian 1 alarm messages on-line. The utility accepts Meridian 1 alarm mnemonics and provides a descriptive explanation of the alarm. It supports Look Up Last Error and Look Up Any System Message.

### Using the system message Lookup utility

At the > prompt, to activate Look Up Last Error, the user enters

```
err<cr>
```

The system looks up the last error and displays or prints the associated help text.

At the > prompt, to activate Look Up Any System Messages, the user enters

```
err ABCDxxxx<cr>
```

where ABCD is the message mnemonic and xxxx is the message identifier. The system looks up the specific error code and displays or prints the associated help text. If the system does not find the requested message, it issues the following message:

```
Unable to find help text for error: ABCDxxxx
```

If the message code entered is invalid (that is, it begins with a number; it has more than four alphabetic characters, or it contains special characters), the system issues the following message:

```
ABCDxxxx is not a valid error code
```

Each alarm has an associated counter that increments with each occurrence of the alarm and is reset as part of the daily routines. The Alarm Summary Report displays the status of these counters, which is an indication of the general stability of the Meridian 1 system.

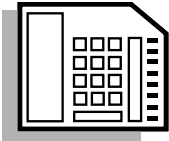
### **Exception filter list**

The Exception Filter List is a list of specific alarm triggers.

### **TTY Output device**

When a terminal is assigned with a USER type of FIL in Overlay 17, it receives filtered alarm output. In addition, if it can load overlays, the terminal receives the normal communications from the overlay, including any SCH messages. However, it does *not* receive MTC, BUG, and CSC messages.

## Maintenance telephone



### The types of telephones that can be maintenance sets

A Meridian 1 proprietary telephone can function as a maintenance telephone when you define its Class of Service as Maintenance Set Allowed (MTA) in the Multi-line Telephone 47 program (LD 11).

### Why maintenance telephones are used

You can test the tone output of a Tone and Digit Switch by using a maintenance telephone to listen for an absence of the tone or its strength, clarity and frequency. You can check the voice path of a trunk with a maintenance telephone by dialing a trunk's TN to seize it and listen for the quality and strength of the returned dial tone. Both of the above can also be accomplished with a DTE or TTY; however, no matter how hard you press your ear to the DTE you cannot hear any tones.

### Maintenance telephone inputs and outputs

The maintenance telephone can send input commands to the Meridian 1 and you can hear output tones from the maintenance telephone. If you want to see message responses from the system as a result of maintenance set inputs, a printer or DTE is required.

### Overlay programs used with maintenance sets

A maintenance telephone allows you to send commands to the system through the following maintenance Overlay programs: LD 30, LD 32, LD 33, LD 34, LD 35, LD 36, LD 37, LD 38, LD 41, LD 42, LD 43, LD 45, LD 46, LD 60, LD 61, and LD 62.

### Loads not accessible with maintenance sets

A maintenance telephone cannot access maintenance Overlays LD 31, LD 40, LD 48, LD 77, LD 92, and LD 96.

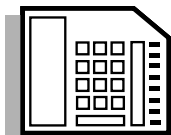
### Entering commands on a maintenance set

To enter commands, press the keys on the maintenance telephone dial pad that correspond to the letters and numbers of the command. For example, to enter LD 42 *return*, key in 53#42##. The following table shows the translation from a DTE keyboard to a telephone dial pad.

## Translation from keyboard to dial pad

| Keyboard                                                      |   |   | Dial pad   |    |
|---------------------------------------------------------------|---|---|------------|----|
|                                                               |   |   | 1          | 1  |
| A                                                             | B | C | 2          | 2  |
| D                                                             | E | F | 3          | 3  |
| G                                                             | H | I | 4          | 4  |
| J                                                             | K | L | 5          | 5  |
| M                                                             | N | O | 6          | 6  |
| P                                                             | R | S | 7          | 7  |
| T                                                             | U | V | 8          | 8  |
| W                                                             | X | Y | 9          | 9  |
|                                                               |   |   | 0          | 0  |
|                                                               |   |   | Space or # | #  |
|                                                               |   |   | Return     | ## |
|                                                               |   |   | *          | *  |
| <b>Note:</b> There is no equivalent for Q or Z on a dial pad. |   |   |            |    |

### Accessing an overlay by using a maintenance set



| STEP                    | ACTION                                                                                                                                                                                                                                                   |    |    |                   |                                                        |  |              |                         |        |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|-------------------|--------------------------------------------------------|--|--------------|-------------------------|--------|
| <b>1</b>                | <b>Start process.</b>                                                                                                                                                                                                                                    |    |    |                   |                                                        |  |              |                         |        |
|                         | Press the prime DN key.                                                                                                                                                                                                                                  |    |    |                   |                                                        |  |              |                         |        |
| <b>2</b>                | <b>Enable telephone as a maintenance set.</b>                                                                                                                                                                                                            |    |    |                   |                                                        |  |              |                         |        |
|                         | Dial xxx91. xxx is the SPRE code. Use LD 21 to print CDB. Examine CDB for SPRE code.                                                                                                                                                                     |    |    |                   |                                                        |  |              |                         |        |
| <b>3</b>                | <b>Check for busy tone.</b>                                                                                                                                                                                                                              |    |    |                   |                                                        |  |              |                         |        |
|                         | Dial ##                                                                                                                                                                                                                                                  |    |    |                   |                                                        |  |              |                         |        |
|                         | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>busy tone present</td><td>Dial * * * * to end this program and access the system</td></tr> <tr> <td></td><td>Go to step 4</td></tr> <tr> <td>no busy tone is present</td><td>step 4</td></tr> </table> | If | Do | busy tone present | Dial * * * * to end this program and access the system |  | Go to step 4 | no busy tone is present | step 4 |
| If                      | Do                                                                                                                                                                                                                                                       |    |    |                   |                                                        |  |              |                         |        |
| busy tone present       | Dial * * * * to end this program and access the system                                                                                                                                                                                                   |    |    |                   |                                                        |  |              |                         |        |
|                         | Go to step 4                                                                                                                                                                                                                                             |    |    |                   |                                                        |  |              |                         |        |
| no busy tone is present | step 4                                                                                                                                                                                                                                                   |    |    |                   |                                                        |  |              |                         |        |
| <b>4</b>                | <b>Activate overlay program.</b>                                                                                                                                                                                                                         |    |    |                   |                                                        |  |              |                         |        |
|                         | Dial 53#xx##. xx represents the overlay program number.                                                                                                                                                                                                  |    |    |                   |                                                        |  |              |                         |        |
| <b>5</b>                | <b>Perform overlay tasks</b>                                                                                                                                                                                                                             |    |    |                   |                                                        |  |              |                         |        |
|                         | Dial overlay input commands.                                                                                                                                                                                                                             |    |    |                   |                                                        |  |              |                         |        |
| <b>6</b>                | <b>Exit program and return telephone to the call mode</b>                                                                                                                                                                                                |    |    |                   |                                                        |  |              |                         |        |
|                         | Dial * * * *.                                                                                                                                                                                                                                            |    |    |                   |                                                        |  |              |                         |        |
| <div>END</div>          |                                                                                                                                                                                                                                                          |    |    |                   |                                                        |  |              |                         |        |



## Hardware maintenance tools

Hardware features help you perform maintenance tasks. These features or maintenance tools include the following:

- ◆ circuit card features that include card-level tests and status indicators
- ◆ CPU controls that allow control of common equipment functions
- ◆ system alarms that categorize the severity of a system fault
- ◆ system monitor indicators that identify power faults and temperature variations

### Circuit-card faceplate features

#### Card test

A cardtest checks that a card is working correctly. Many cards perform a self-test upon power-up. When required you can force card-level tests through software commands.

#### Enable/disable switch

Most cards have a switch on the faceplate that enables or disables the hardware functionality of the card.

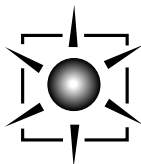
Whenever possible, before you remove a card, disable the software first using a maintenance overlay (LD xx), then disable the hardware by setting the enable/disable switch to “Dis”.

To hardware disable a card before you install it, set the switch to Dis. After the card is locked into position, set the switch to Enb, and then enable the software. To software disable and enable cards, refer to the procedures in *Software Maintenance Tools*.

#### Light Emitting Diode indicators

The card LED, regardless of shape, gives a visual indication of card or unit status as follows:

- ◆ green LED lit, indicates a card is operating normally
- ◆ green LED off, indicates a card is disabled or faulty



- ◆ red LED lit, indicates a card or unit is disabled or faulty, or no units are programmed in the data-base for this card
- ◆ red LED off, indicates a card is operating normally or no power is going to the card
- ◆ red LED lit on a dual processor system's Omega Interface card indicates the opposite processor is active
- ◆ red LED lit on a cabinet, indicates a power problem within the cabinet
- ◆ red LED lit on Option 81 Core to Network Interface (CNI) cards indicates the opposite processor is active.

### Intelligent Peripheral Equipment (IPE) card LED

When an IPE card is inserted or cards containing a multiprocessing unit (MPU), the following occurs:

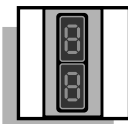
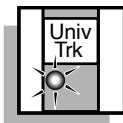
1. The card LED lights.
2. The card MPU does a self-test.
3. The LED flashes three times when self-test passes.
4. The LED remains lit until the card is configured.
5. The system CPU enables the card if a unit is programed in the database.
6. The LED goes off.

If the LED operates in any other manner, such as continually flashing or remaining weakly lit, the card should be replaced.

When Option 51C, 61C and 81 common control cards are installed, a self-test runs. If the self-test completes successfully, the LED flashes three times then goes out.

### Maintenance display code

Maintenance hexadecimal-code displays are located on the faceplate of some circuit cards. The Hex code explanations accompany the card descriptions. See the Index of Cards to locate the card descriptions.



### Option 51C, 61C and 81 Maintenance display

The Option 51C, 61C and 81 maintenance display on the NT6D66 Call Processor (CP) Card shows two lines of information with up to 16 characters per line. The hexadecimal code and its definition are shown on the display. The following applies to the Option 51C, 61C and 81 display.

- ◆ each new code shown on a maintenance display overwrites the one before it
- ◆ all codes received on common-equipment displays are recorded; review them by printing the History File
- ◆ the 16 codes most recently displayed on a controller card stay in memory; review them and reset the counter through LD 30
- ◆ the 64 most recent displays on the Option 51C, 61C and 81 CP card stay in memory; review the displays on the active CP card through LD 135

### CPU/IF Card faceplate controls

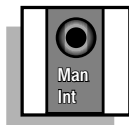
Switches and buttons on common equipment cards allow control of the CPU activity and the clearing of common equipment faults.

#### Manual Initialization button

Pressing the Manual Initialization (Man Int) button associated with the active CPU, will do the following:

1. The CPU will rebuild call dependent data in memory.
2. The CPU will test all common equipment and network type cards.
3. The CPU will enable any common equipment cards and network-type cards that were found disabled by the test; faulty cards remain disabled.
4. Common Equipment cards that cannot be enabled are listed in the initialize messages.

Established calls are unaffected. Calls in the signaling state such as off-hook and dialing, are aborted.

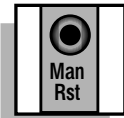




### Normal/Maintenance switch

Dual-processor systems with CPU, IF or CP cards have a Norm/Maint switch on their faceplates. The Norm/Maint switch is in the Norm position when the system is operating normally. Switch to the Maint position for the following conditions:

- ◆ to force that processor to be the active one
- ◆ to keep the processors from switching when replacing common-equipment hardware on the inactive CPU
- ◆ to perform a parallel reload



### Reload button

Rld or Man Rst buttons allow manual activation of the System Loader program. The System Loader automatically loads the system operating program from tape or diskette into the Random Access Memory (RAM). This process requires from two to 20 minutes to complete, during which time Call Processing stops. To reload on dual-processor systems, press both reload buttons at the same time.

## Universal Equipment Module (UEM) Cover and card removal/installation



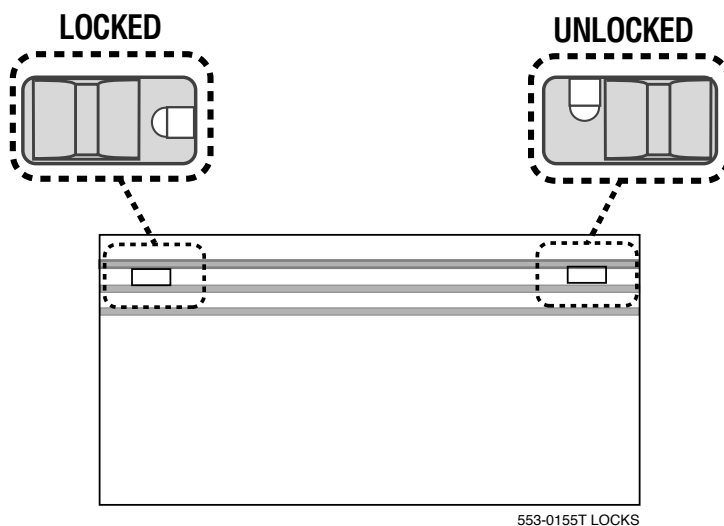
### **DANGER**

Module covers are not hinged. When removing a cover, do not let go of the cover as personal injury could result. Lift the cover away from the module and set it outside of the work area.

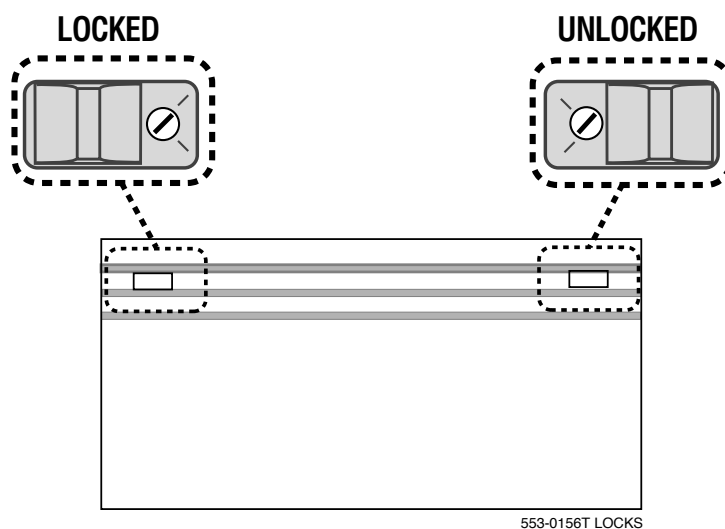
### **Removing a UEM Cover**

To remove a module cover, perform the following steps.

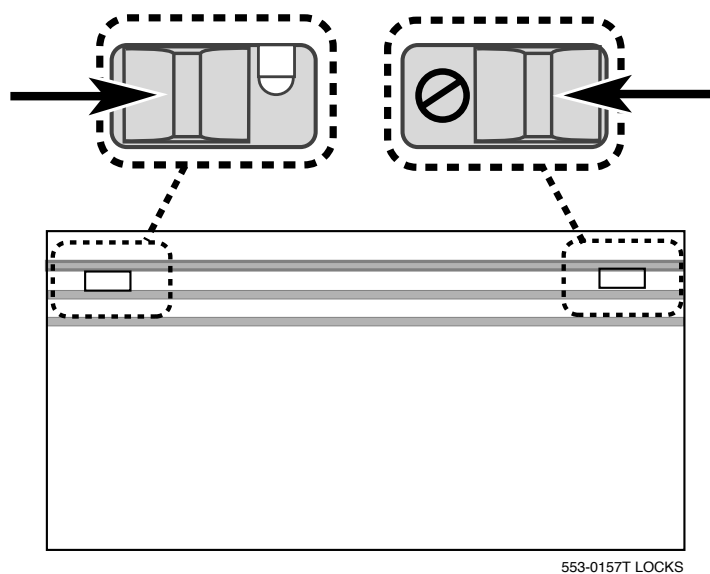
1. Using a flat blade screwdriver or coin, unlock cover locks.



553-0155T LOCKS



2. Push both latches toward the center of the cover and pull the cover toward you while lifting it away from the module.



Ensure that the lugs on the bottom of the UEM cover engage the slots in the module when installing a UEM cover. Push the top of the cover towards the module until the latches click into place.

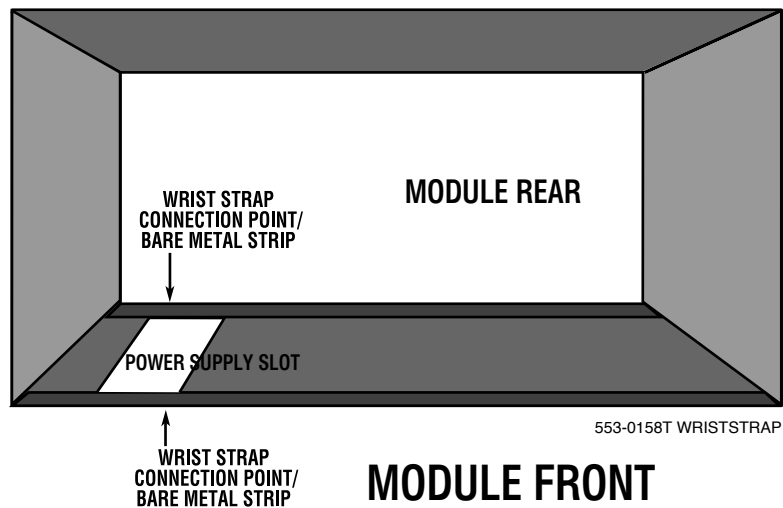
## Using a wrist strap



### WARNING

To avoid damage to circuit cards from static discharge, wear a properly connected antistatic wrist strap when you work on Meridian 1 equipment.

The following figure shows the recommended connection points for the wrist strap and the bare metal strips you should touch to discharge the static.



## Handling circuit cards

Handle circuit cards as follows:

- ◆ Unpack or handle the cards away from electric motors, transformers, or similar machinery.
- ◆ Handle the cards by the edges only. Do not touch the contacts or components.
- ◆ Set cards on a protective antistatic bag. If an antistatic bag is not available, hold the card by the edges, locking levers, or set it in a card cage unseated from the backplane connectors.

- ◆ Store cards in protective packing. Do not stack cards on top of each other unless they are packaged.
- ◆ Keep cards installed in the system as much as possible to avoid dirty contacts and unnecessary wear.
- ◆ Store cards in a cool, dry, dust-free area.

### **Do this when you replace circuit cards**

The following steps apply during the circuit-card replacement procedures.

1. Software-disable cards, if applicable, before they are removed.
2. Hardware-disable cards, whenever there is an enable/disable switch, before they are removed.
3. Hardware-enable cards, after they are inserted.
4. Software-enable cards after they are inserted to return them to service.

Keep in mind the following points:

- ◆ Turn off the circuit breaker or switch for a module power supply before the power supply is removed or inserted.
- ◆ In AC-powered systems, capacitors in the power supply must discharge. Wait five full minutes between turning off the circuit breaker and removing the power supply from the module.
- ◆ Return defective or heavily contaminated cards to a repair center. Do not try to repair or clean them.
- ◆ If the symptoms do not change after replacing a suspected faulty card, put the original card back.



### **Installation procedure**

1. Open the protective carton and remove the circuit card from the antistatic bag. Return the antistatic bag to the carton and store it for future use.
2. Inspect the card components, faceplate, locking devices, and connectors for damage. If damaged, tag the card with a description of the problem and package it for return to a repair center.



3. Refer to the work order to determine the module and slot location for the card.
4. If there is an Enable/Disable (Enb/Dis) switch on the faceplate, set it to Dis.

**CAUTION**

Switches incorrectly set on common equipment circuit cards may cause a system failure.

5. Make sure that the switches or jumpers are set correctly.
6. If you are installing an NTND02 Misc/SDI/Peripheral Signaling (MSPS) Card, the Battery Pack Assembly must be attached as follows.
  - Position the battery pack on the component side of the MSPS card. From the back of the card, install the screws that secure the battery pack.
  - On the component side of the MSPS card, plug in the clip connector wired to the battery pack. Make sure the connector key is centered on J2.

Note that the battery will not be fully charged until 24 hours after installation in a powered system.

**Circuit cards****DANGER**

Circuit cards may contain a lithium battery. There is a danger of explosion if the battery is incorrectly replaced. Dispose of the battery according to the manufacturer's instructions.

7. If you are installing one of the following cards, the QMM42 Security Data Cartridge must be attached.
  - NT6D63 I/O Processor (IOP) Card
  - QPC584 Mass Storage Interface (MSI) Card
  - QPC742 Floppy Disk Interface (FDI) Card

To install a data cartridge, plug it into the connectors on the component side of the host card and install the screw that secures the data cartridge.

The data cartridge and the system software diskettes have a label listing the feature packages, generic, release, issue and an ID number.

**CAUTION**

To avoid system failure, the ID number on the data cartridge must match the ID number of the system software.

8. If you are installing one of the following cards, the associated ROM card must be attached.
  - NTND01 Integrated CPU/Memory (ICM) Card
  - NTND31 ROM QPC579 CPU Function (FN) Card
  - NTND08 or QPC939 ROM
  - QPC687 CPU Card
  - QPC940 ROM

**WARNING**

When you install a ROM card, do not touch other components on the host card.

To install a ROM card, plug it into the connectors on the component side of the host card.

Note that for the NTND31 ROM Card, you must also install a screw and washer at each corner of the ROM card.

9. Squeeze the ends of the locking devices on the card and pull the tabs away from the latch posts and faceplate.
10. Insert the card into the card-aligning guides in the card cage. Gently push the card into the slot until you feel resistance. The tip of the locking device must be behind the edge of the card cage.

11. Lock the card into position by simultaneously pushing the ends of the locking devices against the faceplate.

12. If there is an enable/disable switch, set it to Enb.

Do not enable the switch on an NT8D04 Superloop Network Card or QPC414 Network Card until network-loop cables are installed.

## System alarms

Attendant consoles display major and minor alarms.

### Major alarms

A major alarm can only become active on attendant consoles if the consoles are cross-connected to an emergency transfer device. The conditions that trigger an emergency transfer are optional. Therefore the major-alarm display depends on the options chosen. The following is a list of emergency transfer conditions:

- ◆ call processing stopped due to a system reload
- ◆ loss of power without backup
- ◆ trip input with reserve battery
- ◆ loss of - 48V power supply
- ◆ loss of the 86V ringing generator
- ◆ high temperature shutdown
- ◆ transfer switch located on emergency transfer device is activated
- ◆ transfer switch located under the attendant console is activated

### Minor alarms

Minor alarms are displayed on attendant consoles. The CPU activates the console minor alarm display by sending a message to the console. Minor alarms are triggered by inconsistencies in common equipment hardware and feature interactions. Due to the large number of features available with Meridian 1 systems, the minor alarms are almost always displayed. Minor alarms do not indicate specific faulty components or that an actual fault has occurred. The minor alarm can indicate that a system message may be present on a maintenance DTE. Monitoring system messages with DTE is a preferred method of fault detection, as the system message indicates a specific faulty area which then can be tested and resolved.

### **Remote alarms**

A remote alarm is an extension of emergency-transfer function to another location. The Meridian 1 provides relay-contact closure across two remote-alarm lines. A monitoring site or test center can use this facility to generate alarm lights, bells or activate pocket pagers, indicating that an emergency transfer has occurred. The lights, bells and pocket pagers are not supplied with the Meridian 1.

## **Power and cooling monitors**

### **System Monitor card**

System Options 21, 21E, 51, 51C, 61, 61C, 71, and 81 are equipped with System Monitor cards which check the following:

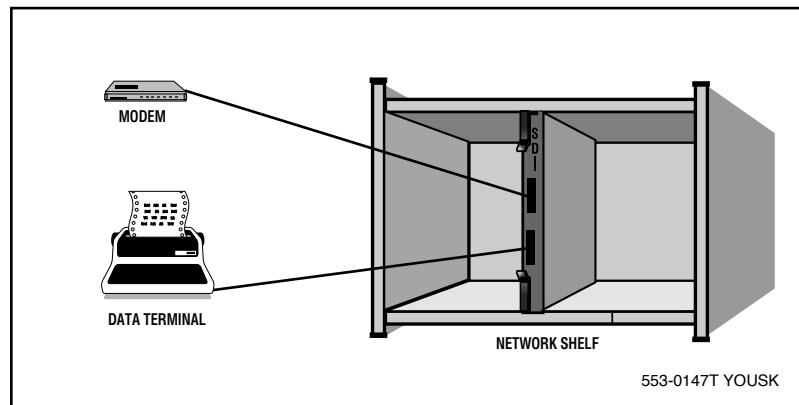
- ◆ column temperature
- ◆ cooling system status
- ◆ system voltage status
- ◆ controls line transfer states

### **Power Monitor card**

Systems other than the Option series have a Power Monitor card, which generates a signal causing a message to appear on all SDI devices indicating a power problem. The Power Monitor card contains various LEDs indicating the specific power problem, fuse status, air flow status, temperature status and emergency transfer status.

## Cabinet LED

Except for the SL-1S and ST, all systems have a LED at the top of the cabinet or a column which lights when there is a power problem.



## Software maintenance tools

### What are software programs?

All of the system software programs are assembled into two groups, resident and non-resident.

### Resident programs

During system operation, certain programs reside in the system memory or RAM. These programs send messages to various TTYs when they detect faults. An example of resident programs are as follows:

- ◆ Bootstrap is used to load the system-loader program into RAM.
- ◆ System Loader is used to load the operating program from diskettes into RAM.
- ◆ Initialize is used to start call processing, rebuild part of memory and check for common-equipment faults.

- ◆ Workscheduler is used to determine what task is next and control all activities.
- ◆ Error Monitor is used to monitor call processing.
- ◆ Resident Trunk Diagnostic is used to monitor analog trunk calls.
- ◆ Overload Monitor is used to monitor excessive inputs from peripheral equipment.
- ◆ Traffic is used to monitor potential congestion problems.
- ◆ Overlay Loader is used to load the non-resident programs into the overlay area of memory.

### **Non-resident programs**

During system operation, certain programs are loaded into the overlay area of the memory to be accessed by the workscheduler. These non-resident programs are commonly referred to as loads or overlays because a new program is overlaid on top of the old one. When loaded manually through the system terminal or maintenance telephone, these routines are used interactively with a command/response format. In this format, you enter a command that tells the system to perform a specific task. The system performs the task and sends system messages indicating the status or errors back to you. There are five basic types of resident programs, as follows:

- ◆ Service change routine is used to program the data base.
- ◆ Print routines are used to generate system reports.
- ◆ Maintenance diagnostics are used to
  - disable, test, and enable specific equipment,
  - verify that a reported fault still needs to be cleared,
  - verify that a repair procedure has cleared a fault.
- ◆ Equipment data dump, updates changes to the customer data-base on diskettes.
- ◆ Software audit monitors the state of system software, and tries to clear software problems.

Non-resident programs are run concurrently with call processing and they can run continuously or on a scheduled basis.

### **Service change and print routines**

The service change and print routines are listed in the administration input/output guide.

### **Maintenance diagnostics**

Maintenance diagnostics are found in this guide. Application-specific diagnostics are located in the maintenance input/output guide.

### **Equipment datadump**

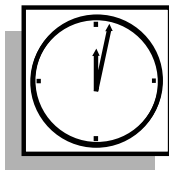
The equipment data dump routine information is located in the maintenance input/output guide.

### **Software audit**

The software audit routine information is located in the maintenance input/output guide.

### **Background routines**

Background routines are non-resident diagnostic programs that run along with call processing. Call processing takes precedence, or is in the foreground, and the diagnostic program is in the background. These run when no other program is loaded in the overlay area. The programs included in the background routine run repeatedly until there is another request to use the overlay area.



### **Daily routine overlay or midnight routines**

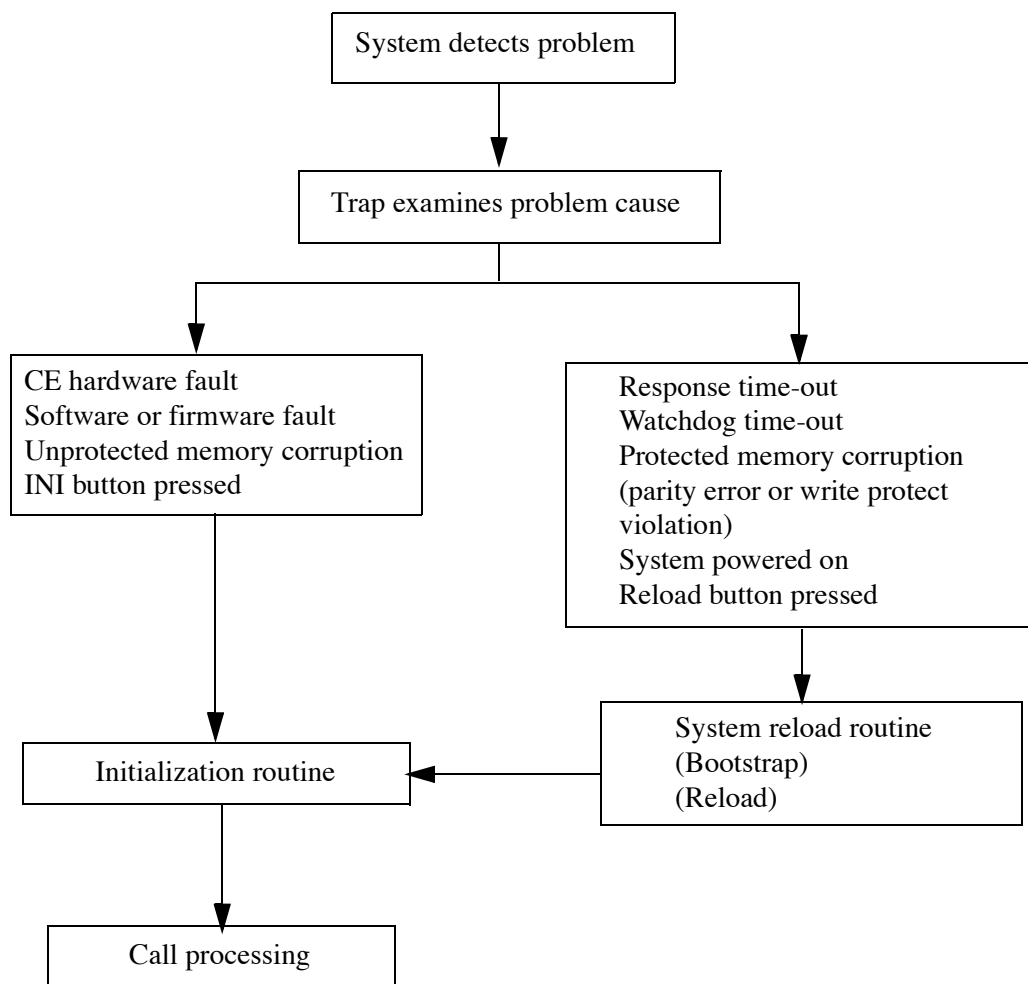
The daily routines are non-resident programs preset to run at midnight when a system is shipped. This is why they are commonly referred to as the midnight routine. The daily routine can be set to run once every 24 hours, at the time of least traffic for a particular business.

When it is time for the daily routine to start, the system cancels the background routine and if the overlay area is not in use by a manually loaded non-resident program, the daily routine will run.

Both the daily and background routines are selected in LD 17, the Configuration Record.

## What the system does when things go wrong

The following diagram represents the method by which the system recovers call processing.



An explanation of the diagram follows.



## Trap sequence routine

The processor is forced to execute a trap sequence when the system is powered on, or certain faults are encountered, or when the reload/reset buttons are pressed. The trap sequence routine will do the following:

- ◆ Determine, store and print the cause of the trap in an INI or SYS message, which the technician can use to help pinpoint the fault.
- ◆ Isolate and disable any faulty circuit cards. Determine whether to execute an initialization or a system reload. If appropriate, output an INI or SYS message to indicate faulty hardware components.
- ◆ Check the memory and if the call processing portion of memory is corrupted, an initialization takes place. If the system-operating or customer-database portion of memory is corrupted, a system reload takes place.

## System reload routine

If the trap routine determines that a system reload is required it forces the CPU to run the bootstrap program. For this to occur, the following conditions must be present:

- ◆ system is powered on
- ◆ reset or reload buttons are pressed
- ◆ common-equipment fault obstructs processing, such as
  - response time-out
  - watchdog time-out
- ◆ memory contents are corrupted, such as
  - parity error
  - write protect violation (part of INI and SYS messages)

Dual processor systems contain two Function cards with the faceplate label Omega FN. The hardware (BTU) on the backplane into which the cards are plugged, identifies the FN cards as 0 and 1. The FN card 1 always starts the system reload routine. If FN card 1 does not start the routine, check for processor faults.

Common equipment, unless otherwise stated, includes all network-type cards such as those used in the network shelves.

### **Bootstrap program starts the system reload process**

Common equipment card LEDs come on, and bootstrap directs FN card 1 to perform the following steps.

1. FN card 1 does a self test. If the test passes, the FN card 1 LED goes out.
2. FN card 1 tests first 32k portion of memory.
3. FN card 1 tests disk card register associated with FN card 1. If the test passes, the disk card LED goes out.
4. FN card 1 tests disk units. If the test passes, the disk unit LEDs flashes, indicating that System Loader instructions are loading form disk into memory.
5. When the System Loader instructions are all entered into the system memory, the System Loader will take over from the Bootstrap and provide the instructions for FN card 1.

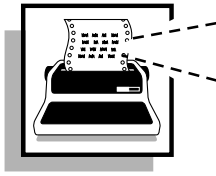
**Note:** If the above tests do not pass, a Hex code appears on the faceplate displays of the cards involved. Refer to the Index of Cards to locate each card Hex explanation.

### **System Loader continues the system reload process**

1. FN card 1 tests software package compatibility, and, if not right, generates a message.
2. FN card1 enables SDI ports, allowing messages to be output.
3. FN card1 loads configuration record and memory test diagnostic.
4. FN card 1 tests memories. The memory card LEDs flash.
5. FN card1 tests switches control to FN card 0.
6. FN card 0 does a self-test. If the test passes, the FN card 0 LED goes out.

**Note:** If the self-test does not pass, FN card 1 resumes control and outputs a message indicating an FN card 0 fault.

7. FN card 0 tests memories. The memory card LEDs flash.
8. FN card 0, loads system operating software into the memory.
9. FN card 0, loads customer data-base into the memory.
10. When the system reload is completed a message is output as follows:



```
SYS000 000400 00000F FFFFF 00 CPU  
SYS100 CPU 0  
SYSLOAD RLS: xx  
ISSUE xx  
DONE
```

The above is an example of a clean sysload message indicating all hardware and software functioning as expected with no faults.

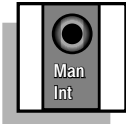
**Note:** The system loses the time and date during a sysload, except on an Options 51C, 61C and 81. You must reset the time and date using LD 02 after a sysload unless you have the Network Time Synchronization feature.

### Short memory test to save SYS load time

To minimize sysload time, the Short Memory Test capability can be enabled in LD 17 (prompt SMEM). If the Short Memory Test is enabled, only one pass of memory testing is performed on a normal reload. If any subsequent system failure causes an automatic reload, the full six-pass Memory Test is performed on all memory in the system.

Note that a sysload completes so quickly on Options 51C, 61C and 81 that the Short Memory Test is not useful. The Short Memory Test package is not designed to be compatible with Options 51C, 61C and 81.

## Initialization causes



The initialize program is run as a result of the following conditions:

- ◆ system load is complete
- ◆ corrupted call-processing memory is detected
- ◆ the MAN-INT button is pressed
- ◆ a software or firmware fault is detected
- ◆ a hardware fault in the common equipment is detected, such as I/O device faults, network or PE signaling, IGS faults, which adversely affect the Network/CPU Bus

## Initialization routine

The Initialization program performs the following steps:

1. Saves the fault code or cause of the INI in the overlay area, allowing you to pinpoint the cause of the problem.
2. Erases the call-processing memory and rebuilds it from the network card memories.  
  
*Note:* After the processor sets up the calls, they are controlled by the network card memories.
3. Tests all common equipment cards and finding any disabled which can be enabled, does so. Those which cannot be enabled are identified in the INI message.
4. If the initialization is associated with a system reload, the Peripheral Equipment Controller cards are tested to ensure they are enabled in software and a Superloop is defined for at least one segment of each PEC.
5. After the system reload, all required download information is sent to each digital telephone, and then the download flag is turned off to ensure that a manual initialization will not invoke the download process.
6. Any applicable patches for resident call processing software which have been saved on the disk are reloaded into the system.
7. Any new system parameters are downloaded to all XNET, PEC, NPD, and PE cards that require them.

8. All active SDI terminals print detailed messages on the cause of the INI, as follows:
  - the time of the INI
  - the last software instruction executed by the CPU
  - a list of faulty cards or components
  - INI fault codes are also output to the processor faceplate maintenance display
9. Logs out all I/O device users.
10. Updates the History File.
11. INI counter increments. If five or more initializations have occurred within 24 hours, all active patches are disabled.
12. Resumes call processing after the initialization procedure is completed.

**Note:** Initialize can be activated remotely by way of restricted access through debug software. This process includes saving the last initialization error codes in debug area, updating the patch save status in debug area and all of the above steps, except for the system reload steps.

### **Telephone call changes due to an initialization**

Telephone call changes due to initialization are as follows:

- ◆ only established calls have an active voice path and remain connected
- ◆ incoming calls to an attendant console from the public exchange network that remain in a Ringing-in state will re-originate after initialization
- ◆ direct inward dialed and TIE trunk calls in a Ringing-in state are lost
- ◆ Conferenced calls, Hold, Music On-Hold, Call Transfer, Forward, Hunt are lost
- ◆ calls established on secondary DN's are reestablished on the prime DN

**System operation changes due to an initialization**

System operation changes due to initialization are as follows:

- ◆ activates minor alarm on console
- ◆ volume levels reset to default levels on some types of programmable sets
- ◆ CDR records for active calls and the hour's traffic data is lost
- ◆ incomplete programming changes are lost

**ACD operation changes due to an initialization**

ACD operation changes due to initialization are as follows:

- ◆ only established calls remain connected
- ◆ conferenced calls are lost, including calls under supervisor observation and emergency key calls are lost
- ◆ all calls in queue, such as RAN, Hold and Silence are lost. Incoming calls in RAN will be held for the duration of the initialization, and then released.

**Agent changes** - ACD agent changes due to initialization are as follows:

- ◆ active agents remain logged in
- ◆ idle agents are logged out
- ◆ make set busy (MSB) status is not affected

**Reporting changes** - ACD reporting changes due to initialization are as follows:

- ◆ ACD-D, that is, Meridian MAX loses transient data for typically one half hour
- ◆ ACD-C will lose non-printed data

### **Meridian link operation changes due to an initialization**

Meridian link changes due to initialization are as follows:

- ◆ calls in the setup process are lost
- ◆ link will be down for approximately 30 seconds after system initialization

### **Meridian Mail changes due to an initialization**

Meridian Mail changes due to initialization are as follows:

- ◆ all calls in the ACD queue to Meridian Mail are lost
- ◆ conferenced calls are lost
- ◆ calls using the conference feature, such as User Pressing Call Sender, are lost
- ◆ established calls to Meridian Mail will remain in progress, with Voice Recording active
- ◆ the CSL link will drop and voice channels may become locked out until manually disabled and reenabled
- ◆ DTMF phones will be able to send tones to Meridian Mail
- ◆ digital sets cannot access Meridian Mail features
  - CSL link will be down (EES off)
  - Switch is unable to generate tones (EES on)

## Activating non-resident programs with the overlay loader

You can load programs manually by entering commands through the system terminal or maintenance telephone.

Once the program is loaded, the system outputs the program mnemonic (such as TRK for Trunk Diagnostic) on the system terminal.



### Overlay input commands

After the Log In sequence and password, the overlay loader becomes active and accepts commands keyed from the SDI terminals. The overlay loader will respond to six commands as follows:

- ◆ **LD xx** — loads non-resident programs from tape or disk into the overlay area, and then the loaded program assumes control. xx represents the number of the desired non-resident program.
- ◆ **ENLT** — enables the tape interface or the MSI, FDU, MDU card
- ◆ **DIST** — disables the tape interface or the MSI, FDU, MDU card
- ◆ **STAT** — prints the status of the tape interface or the MSI, FDU, or MDU card
- ◆ **END** — ends the control of the current non-resident program without aborting the overlay area, allowing the person who is Logged In to maintain control
- ◆ **\*\*\*\*** — aborts the current overlay program, allowing another program to be loaded into the overlay area. For example, if the Meridian 1 is in the midnight or daily routine phase, it will immediately put a diagnostic program into the overlay area, logging out the previous user.



## History file, another place to find system messages

The History File consists of stored system messages in protected memory. A printer is normally connected to the system and each system message is printed as it is received. If there is no printer connected to the system or a printer malfunction occurs, the History File can act as a backup.

### Messages types stored in history file

The messages stored are specified on a system basis and can be one or more of the following types:

- ◆ Customer Service Changes (CSC)
- ◆ Maintenance messages (MTC)
- ◆ Service Changes (SCH)
- ◆ software errors (BUG)
- ◆ Initialization and Sysload messages (INI and SYS)
- ◆ Traffic messages (TRF)

### Erasing file contents

The content of the History File is erased during a SYSLOAD. It will also be erased if you change the length of the History File. The History File is located in protected data store, therefore the contents survive an initialization.

### File overflow

If the History File is full, the first stored messages are replaced by incoming messages. If this happens, the system gives a “file overflow” message at the start of a printout so that you know some information is being replaced by newer messages.

### Changing file length

You can change the length of the History File with the prompt HIST in the Configuration Record (LD 17). The maximum length of the file depends on the amount of protected data store available, which in turn depends on the number of system features that require protected data store.

### Printing the history file

The contents of the file can be printed on demand by using LD 22. In the printout each message is prefaced by a % symbol, indicating that this message is history, rather than a real-time message.

For more information, refer to the Fault Clearing Guide, Book 3 of 3, Management Applications.

### Patches

System software sometimes requires modifications, called patches. Patches are provided by Northern Telecom Technical Assistance Centers. To find out if your system has any patches, use the ISS command in LD 22. This causes the software generic and issue to be printed. A plus sign (+) next to the issue number means there is a patch in service. The enhanced maintenance feature does the following:

- ◆ allows patches to survive a sysload automatically
- ◆ permits patches on nonresident programs
- ◆ records all patches in the system
- ◆ allows data disks to be shipped with pre-loaded patches

If there is a problem with a patch, the CPU sends system messages with the mnemonic EHM to the system terminal or the History File.

### Option 51C, 61C, 81 and 81C Differences

#### System reload

When Options 51C, 61C and 81 receive a system-reload signal, the sysload takes two to five minutes, depending on the size of the customer database. During the sysload, Options 51C, 61C and 81 perform a Core-shelf test, which includes self-tests on the CP and IOP cards. The results of the self-tests are displayed on the Liquid-Crystal Display (LCD) on the CP card, the hex display on the IOP card, and the system terminal. On the other Core cards, the LED blinks three times after a successful test.

## Initialization

Options 51C, 61C and 81 typically perform an initialization in under 90 seconds. You can manually initialize only the active core side. The forced download to IPE takes a couple of minutes.

## Overlays

In Options 51C, 61C and 81, the overlays reside in dynamic random access memory (DRAM) after they are loaded from the hard disk during an initial software load. Since they are always in resident memory, the overlays can be loaded quickly. The software for the system is loaded onto hard disks within the Meridian 1 during assembly at the factory.

## Natural-language core messages

An Options 51C, 61C and 81 can diagnose faults in field-replaceable units for all Core hardware, including cables. In case of a failure, a message in a natural language (such as English) appears on the system terminal and on the Liquid-Crystal Display (LCD) on the CP card.

## Remote operation capabilities

Options 51C, 61C and 81 remote operation capabilities include remote access to both Core Modules, the ability to sysload, initialize, or put the system in a split mode, and the ability to upload and download the customer database. You can access the Core complex in each Core Module through the I/O ports on the CP cards. 



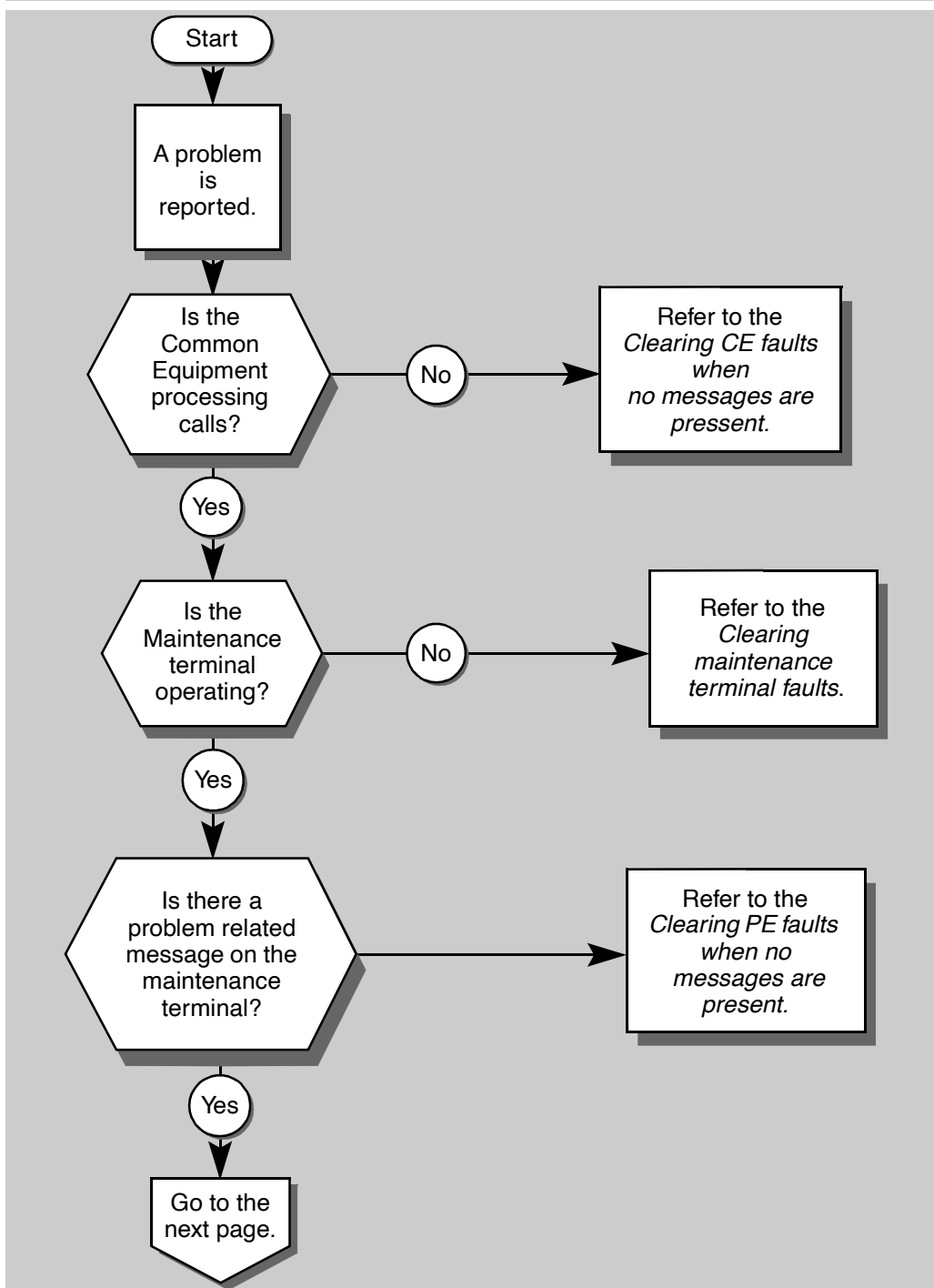
## Start here to find faults

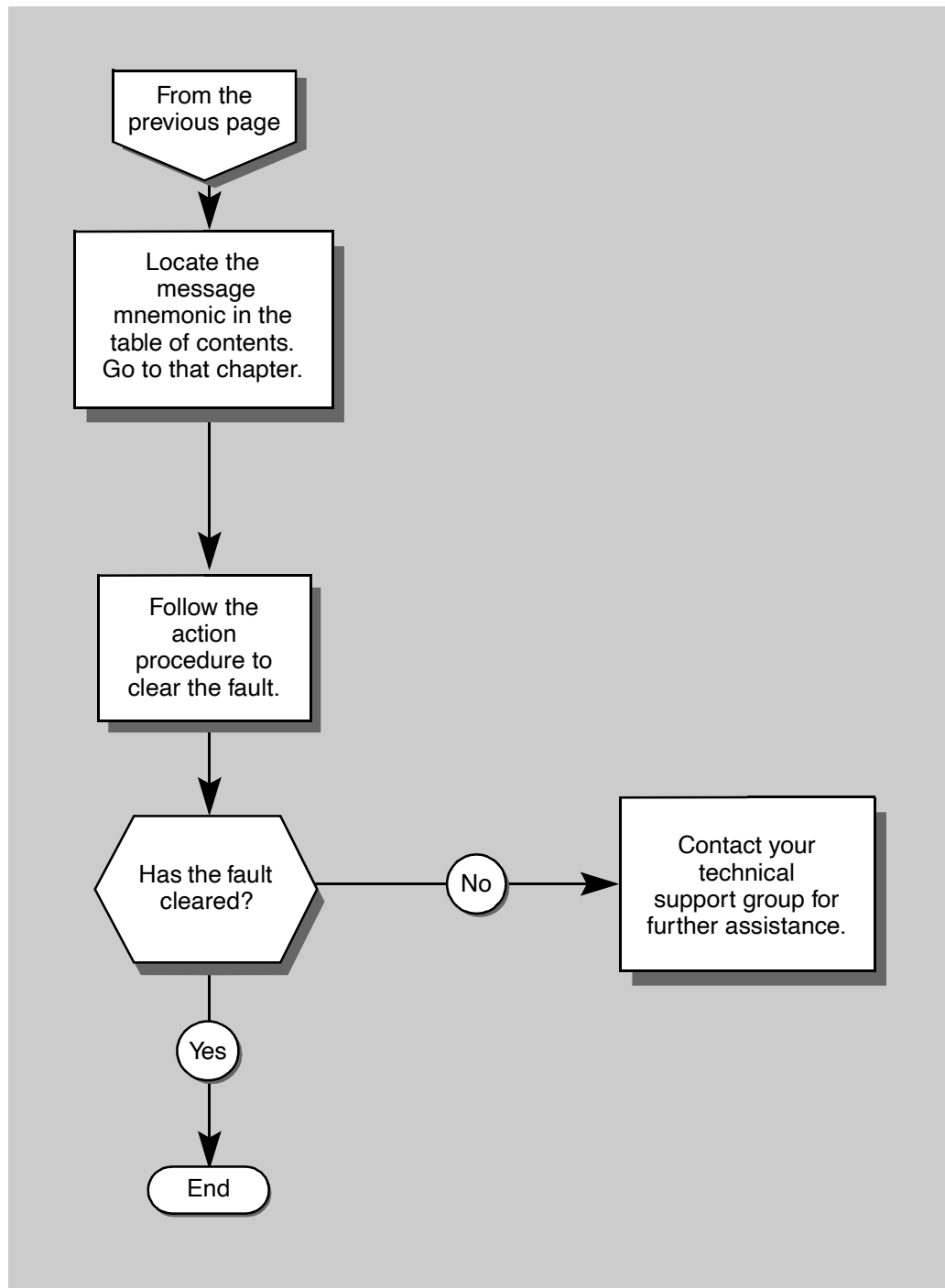
### How to use this chapter

Follow the *Basic system fault finding* flow chart procedures. In most cases a fault is accompanied by a system message. For those rare conditions when there are no messages present or when the maintenance terminal will not operate, the *Basic system fault finding* flow chart procedures will direct you to the *Go to Clearing CE, PE or Maintenance terminal fault* sections.

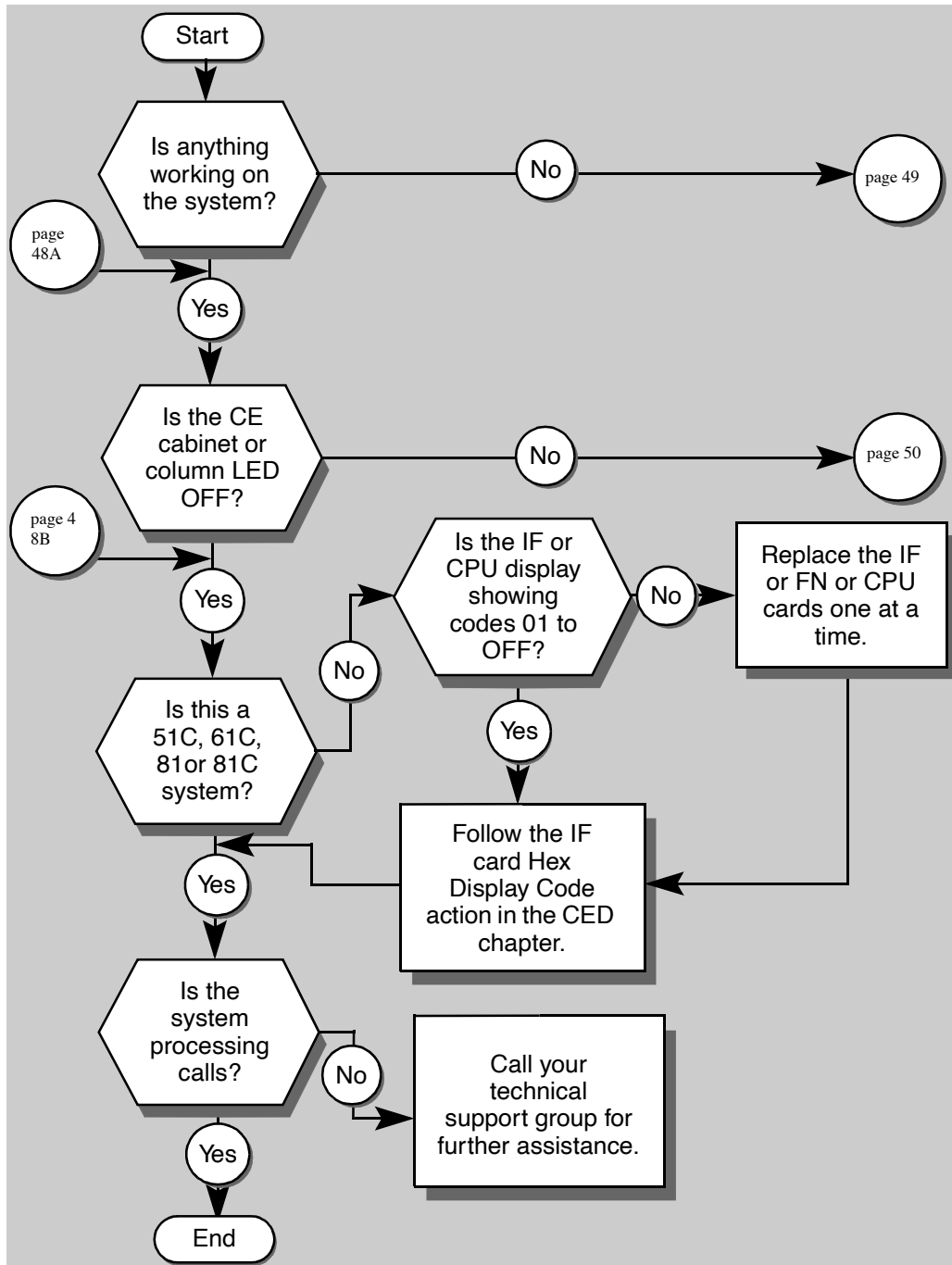
The *Go to Clearing CE, PE or Maintenance terminal fault* sections are comprised of high level flow charts. The PE flow chart is amplified by a more detailed step-action table. To clear the faults, you can use either the flow chart or the step-action table or a combination of both.

## Basic system fault finding

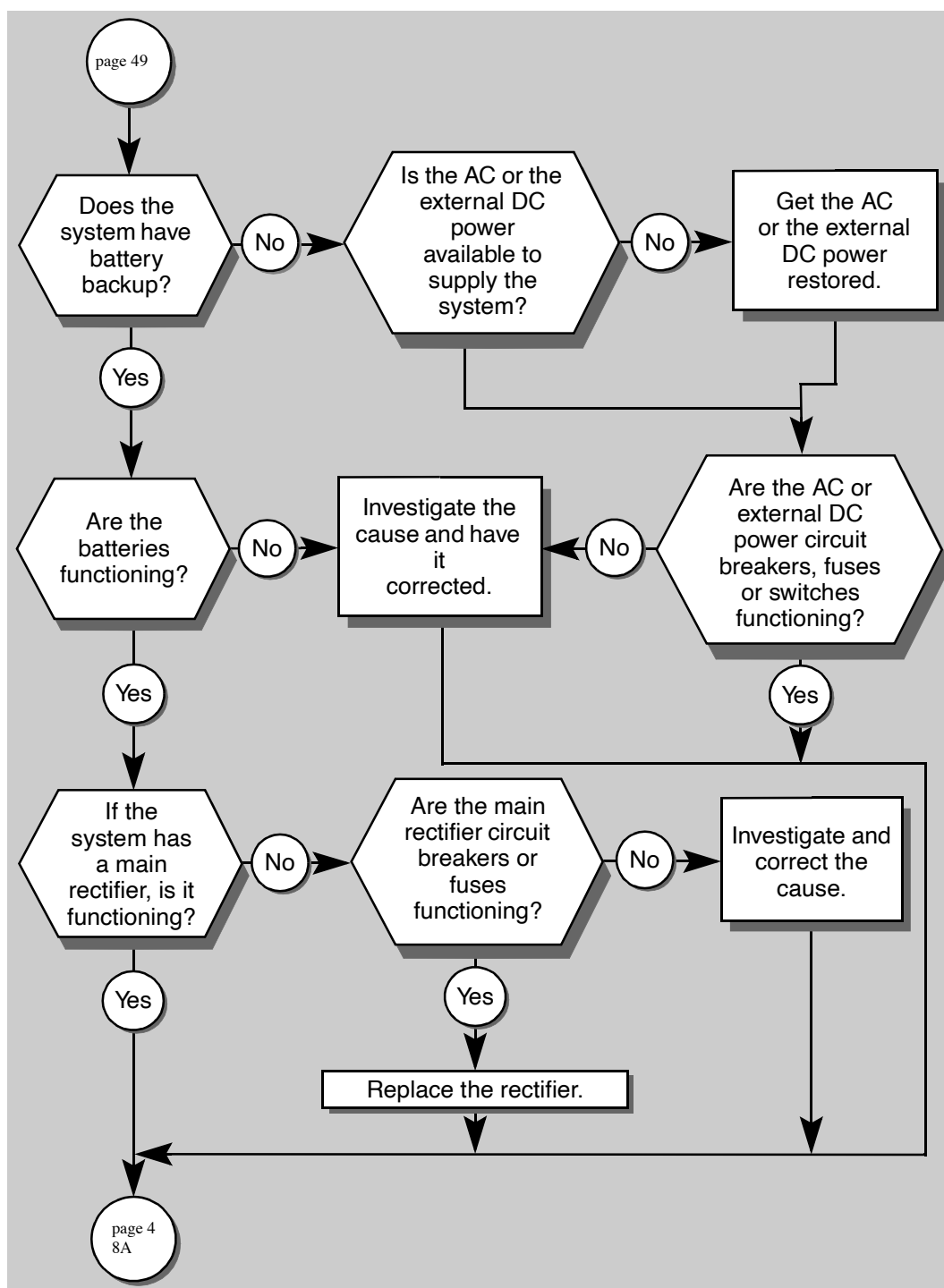


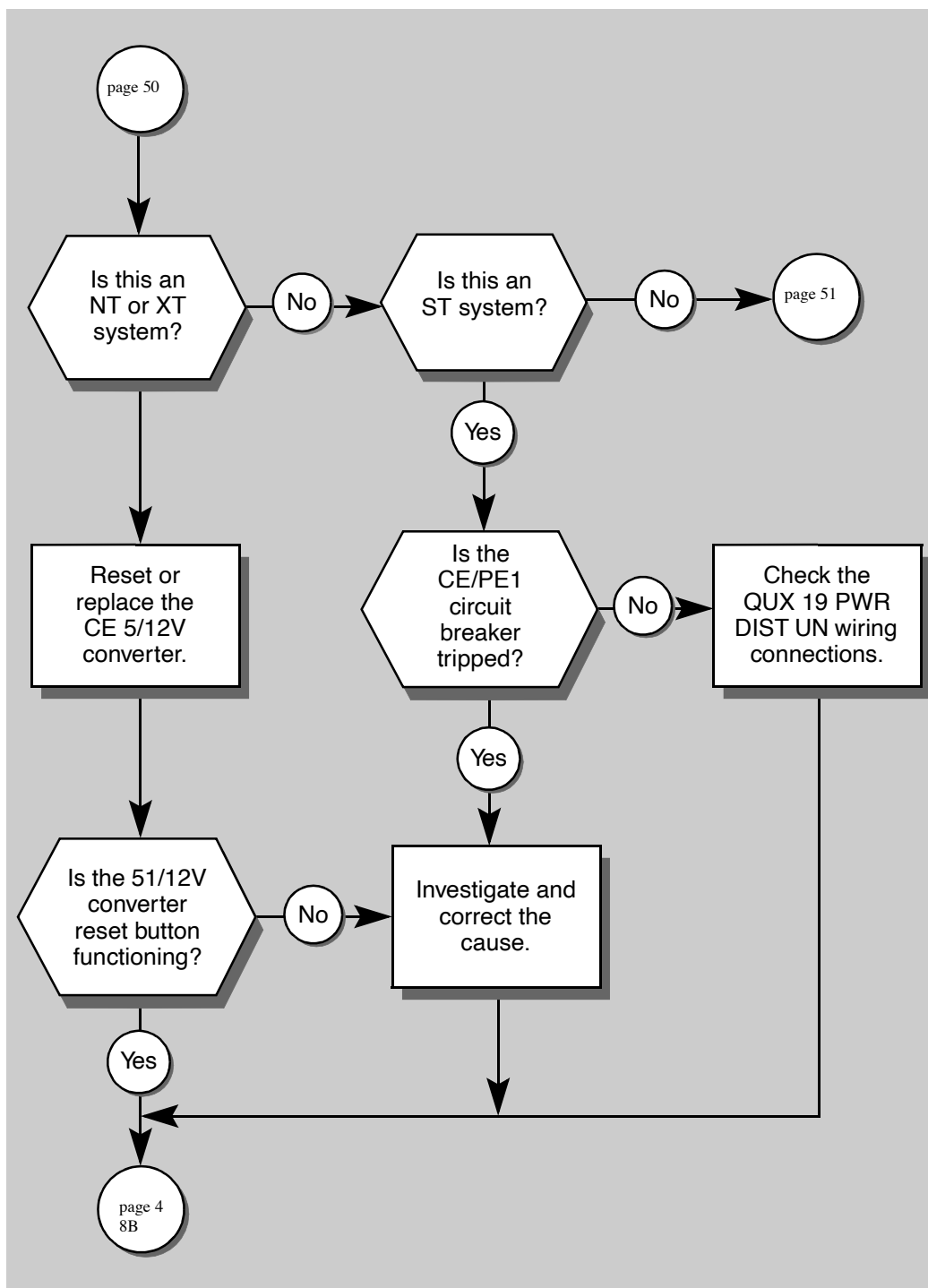


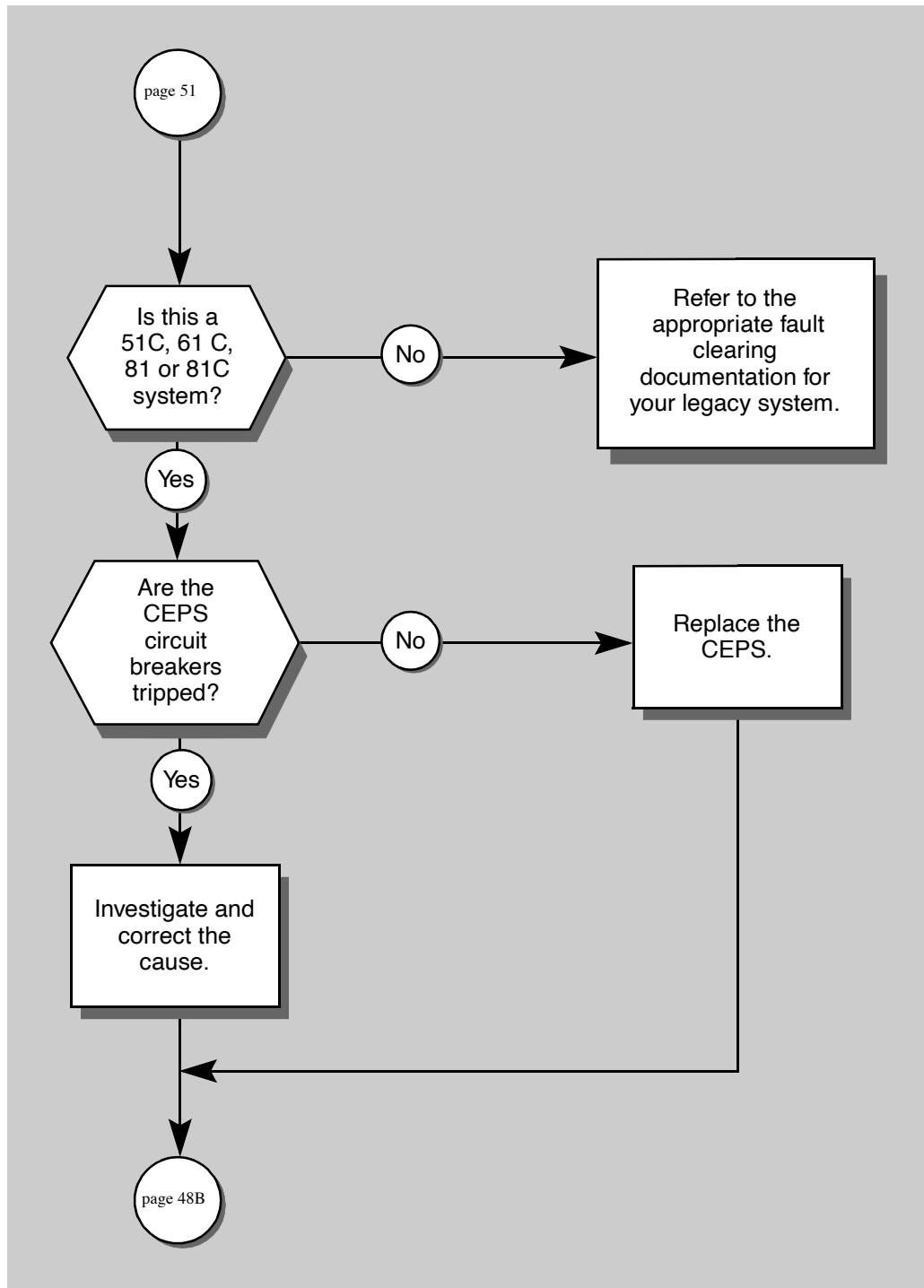
## Clearing Common Equipment faults when no messages are present



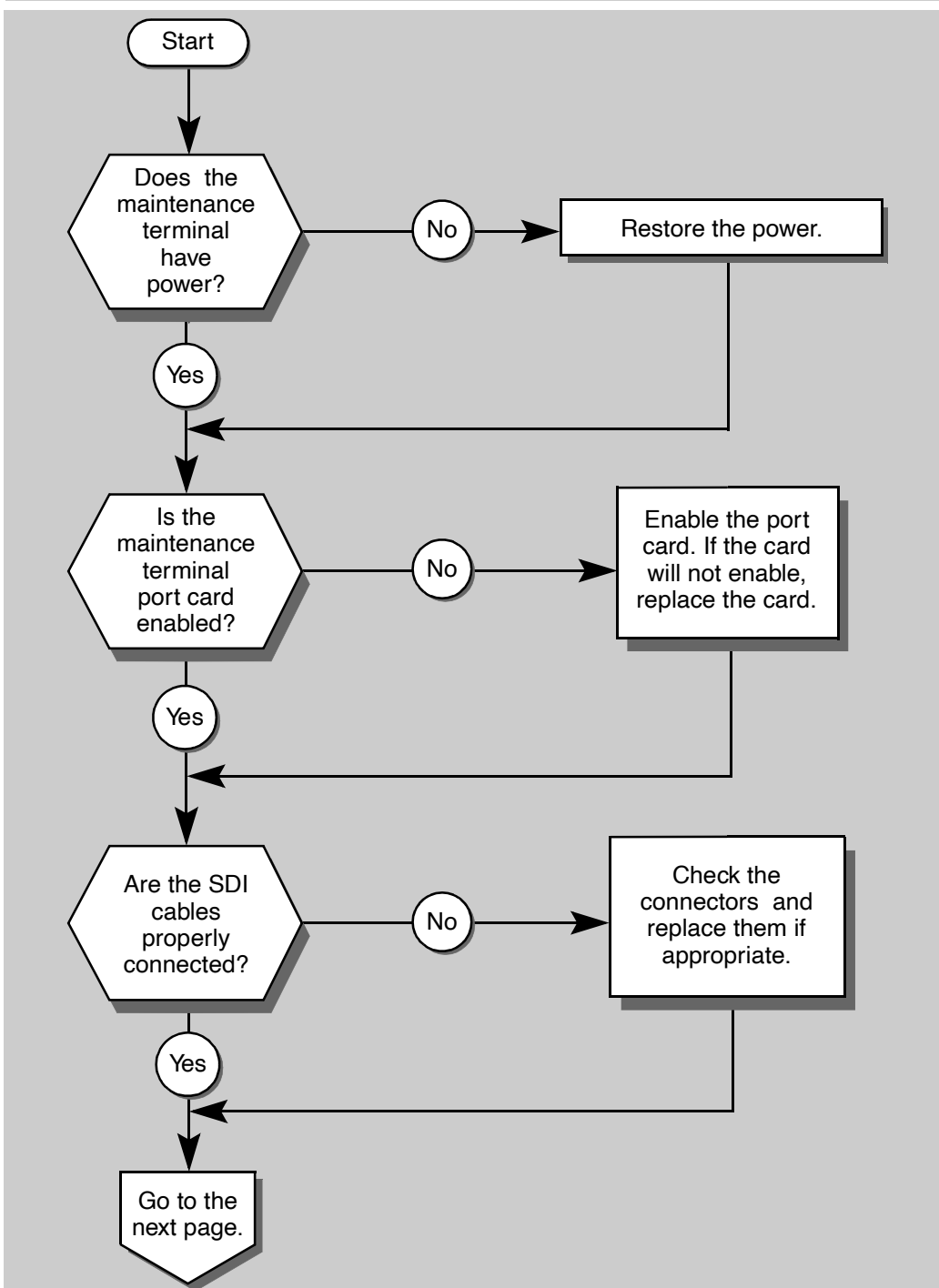


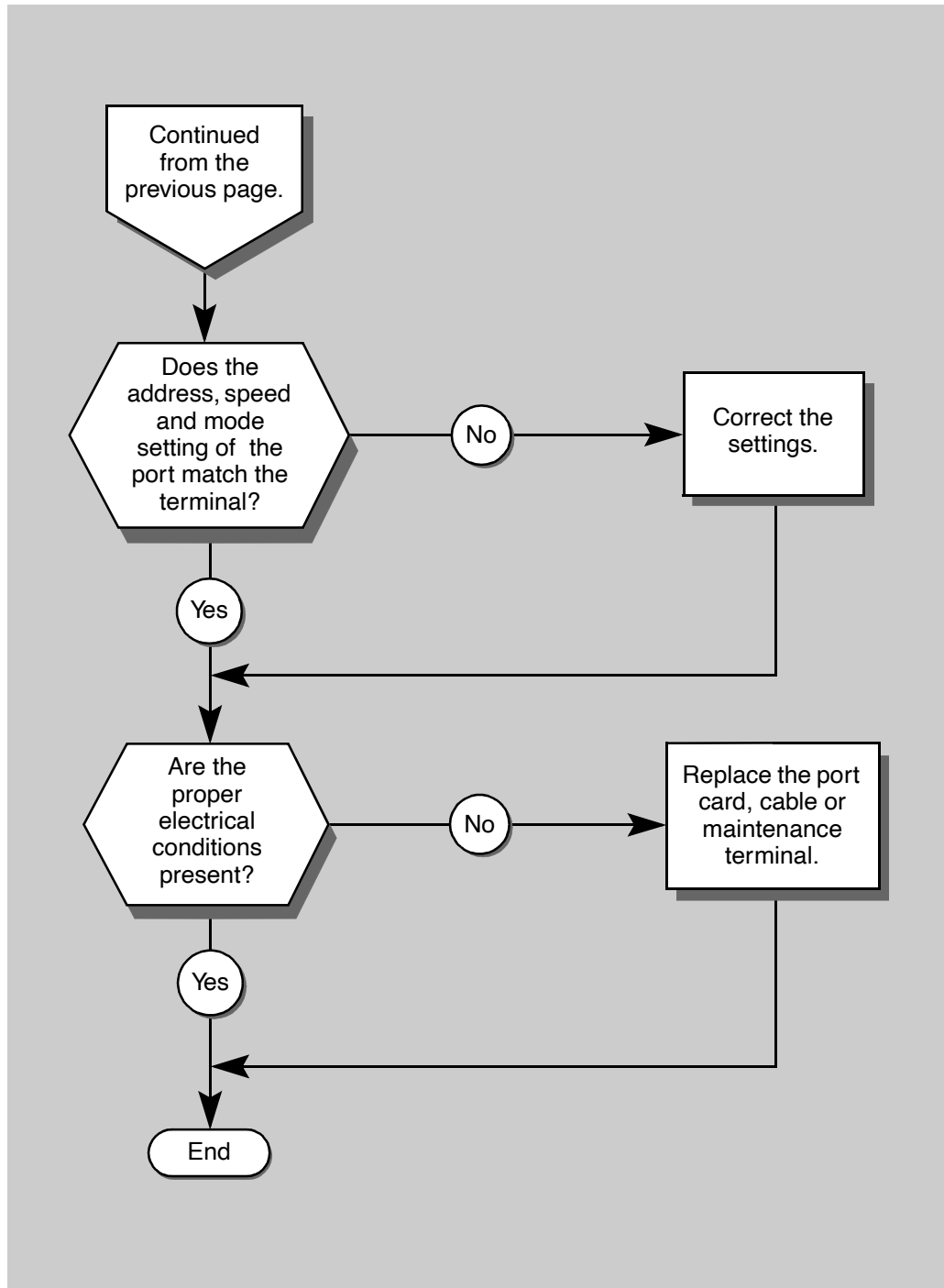






## Clearing maintenance terminal faults

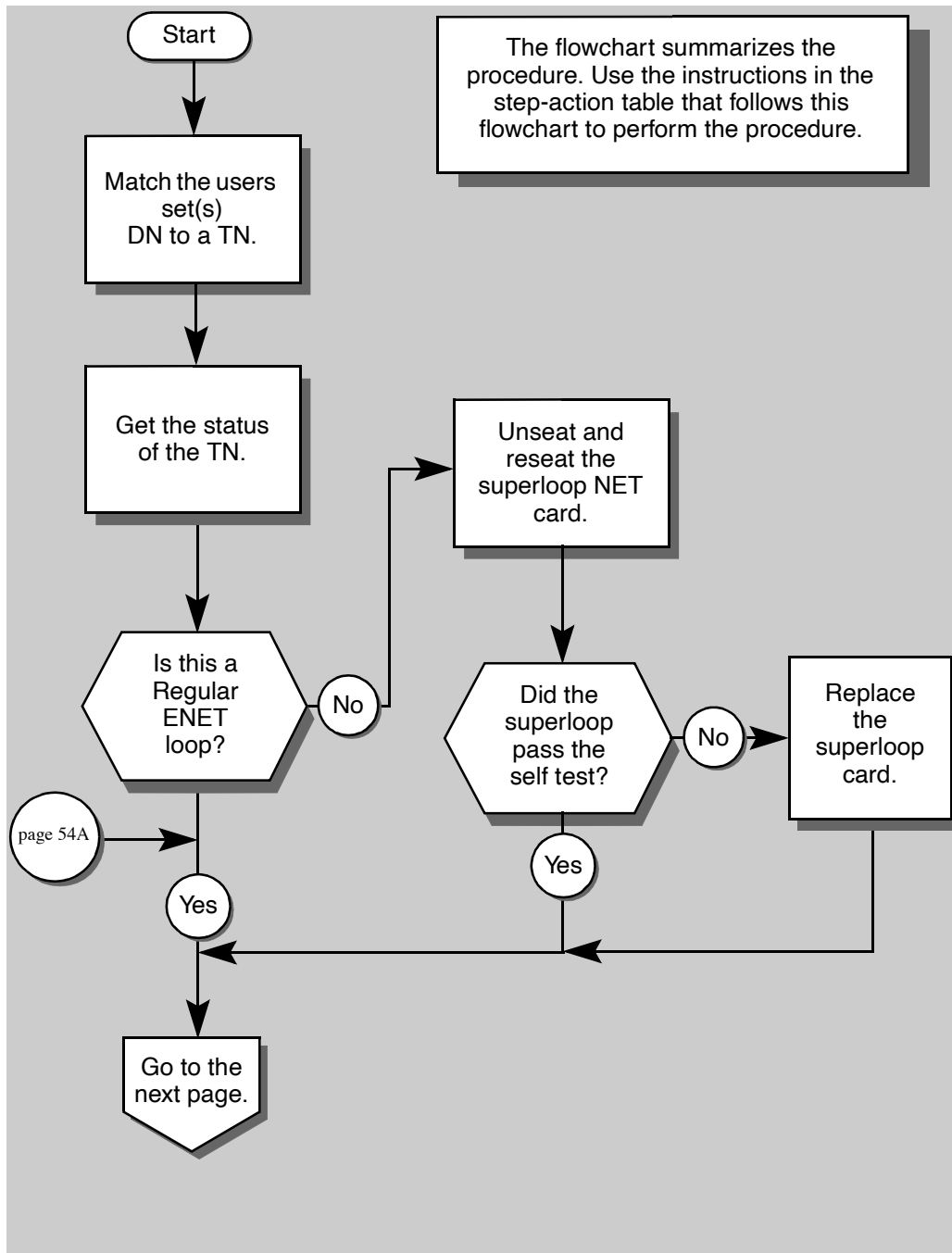


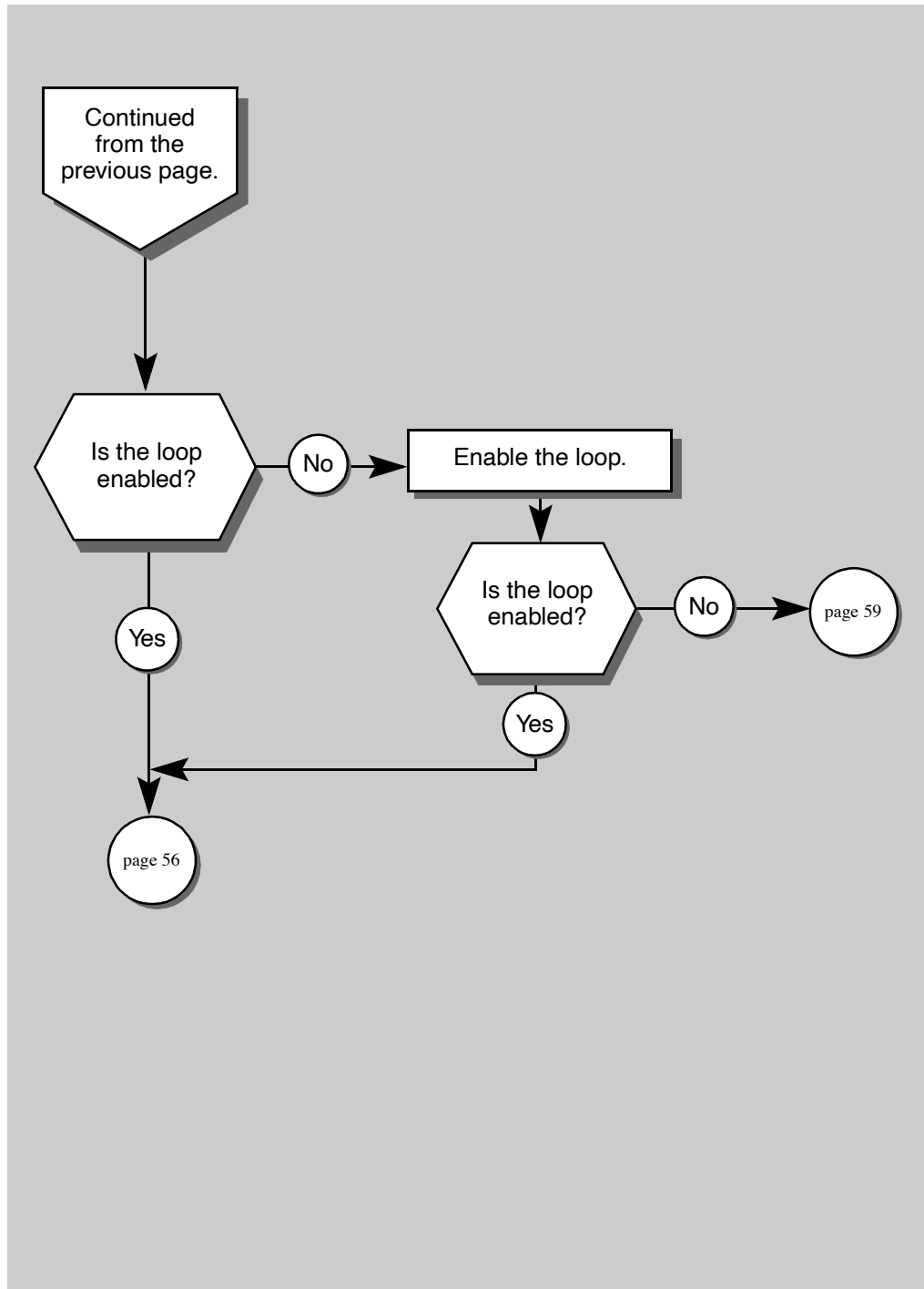


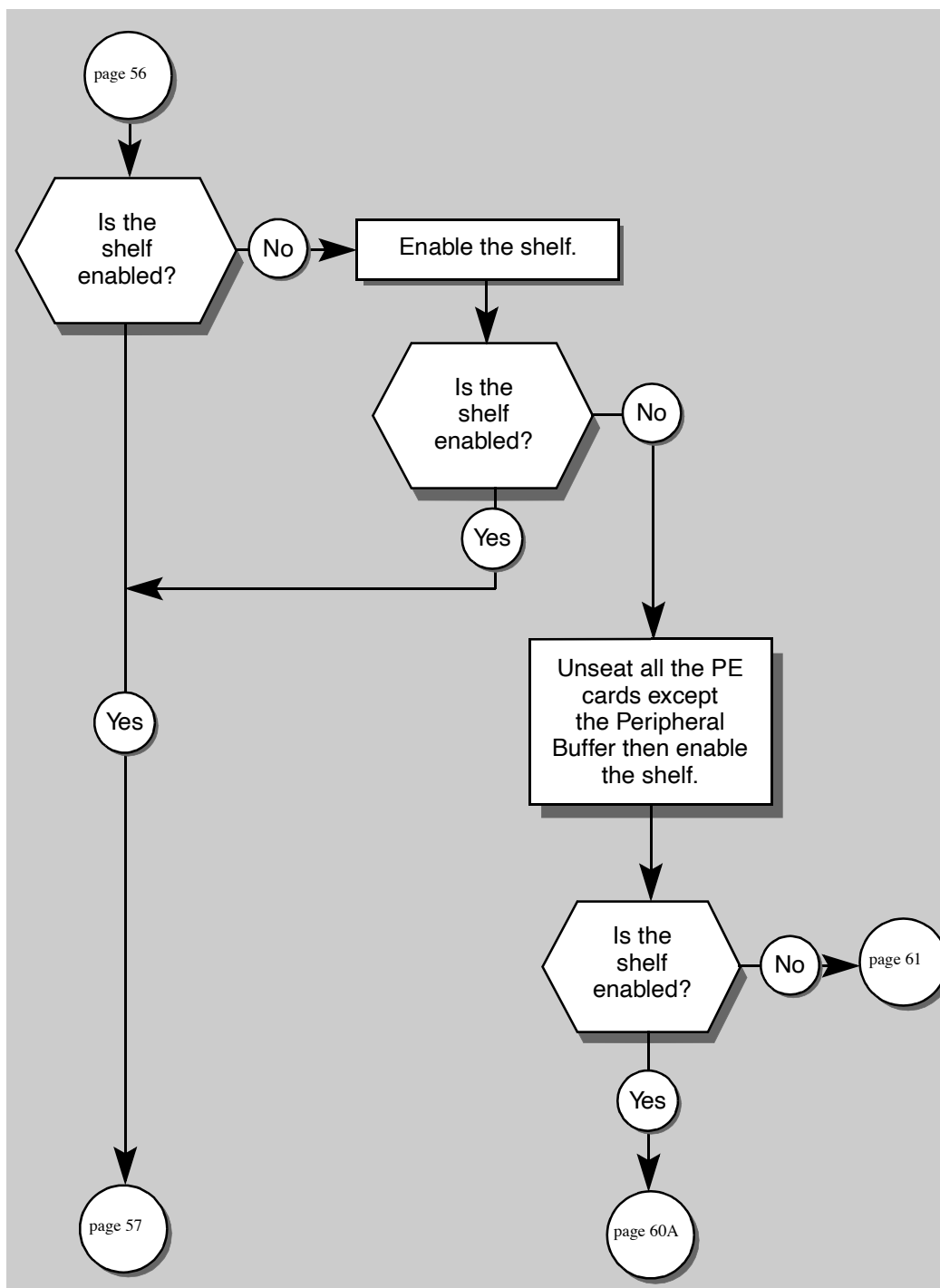
**54** Start here to find faults

of 1474

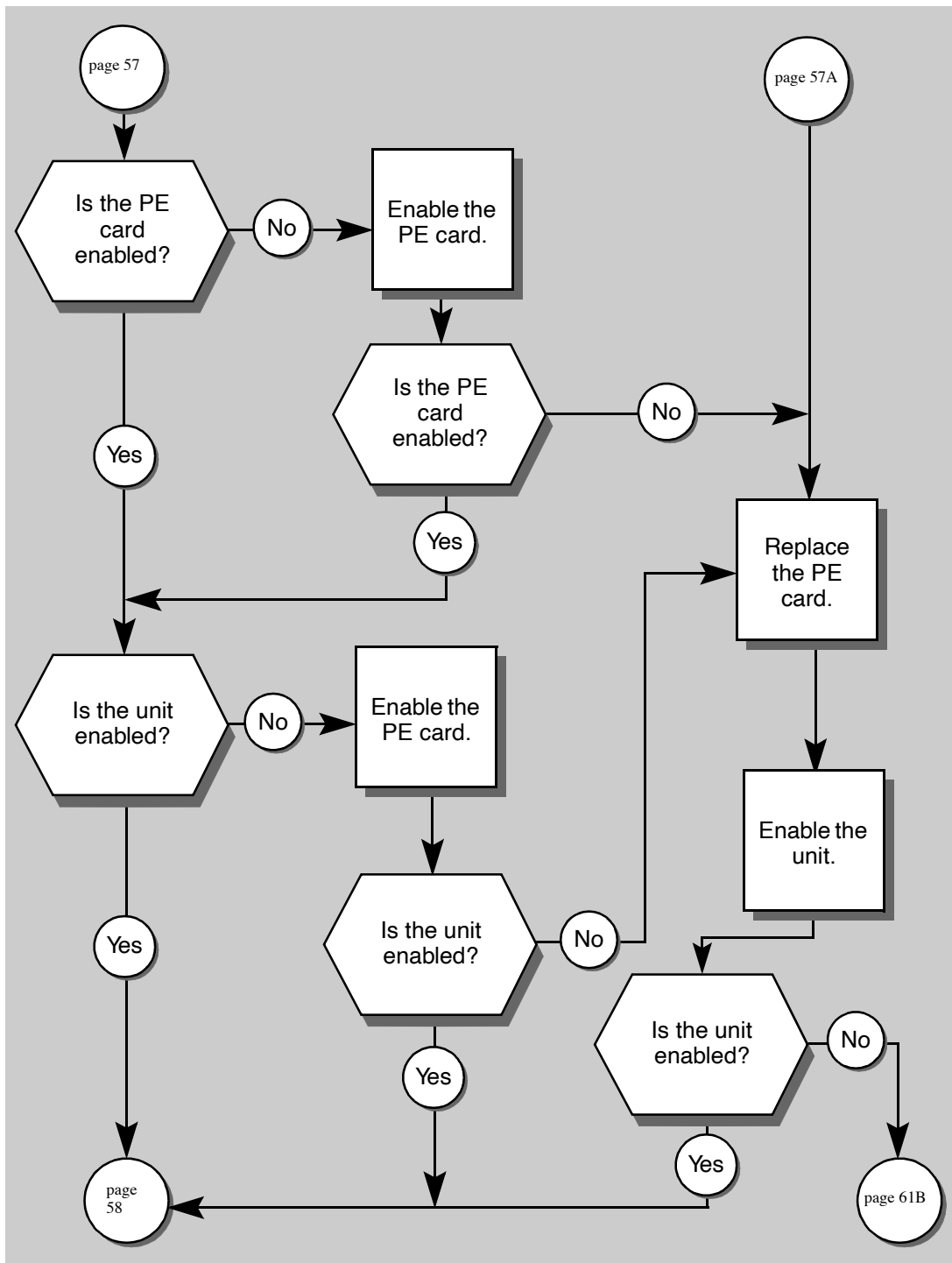
## Clearing Peripheral Equipment faults when no messages are present





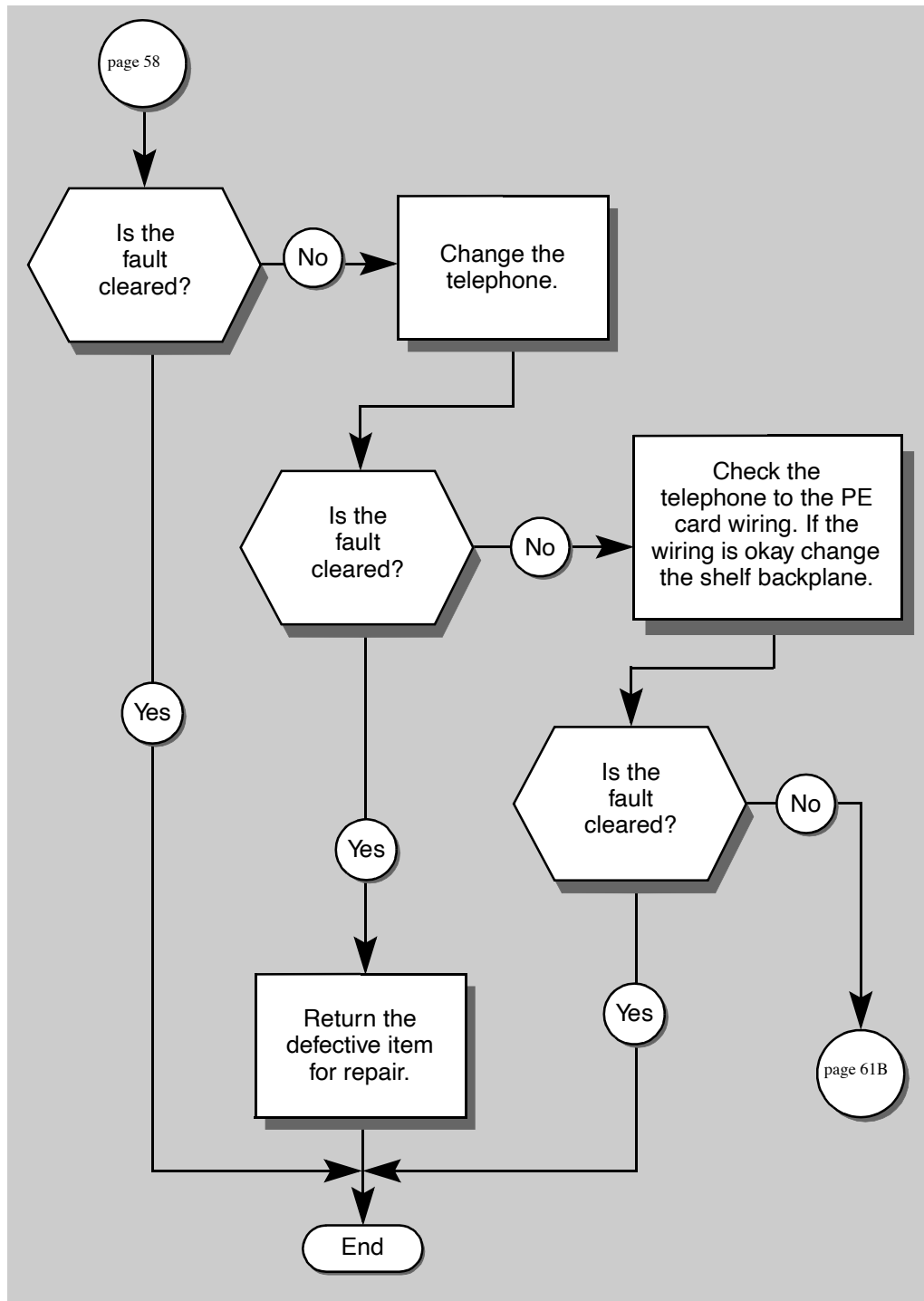


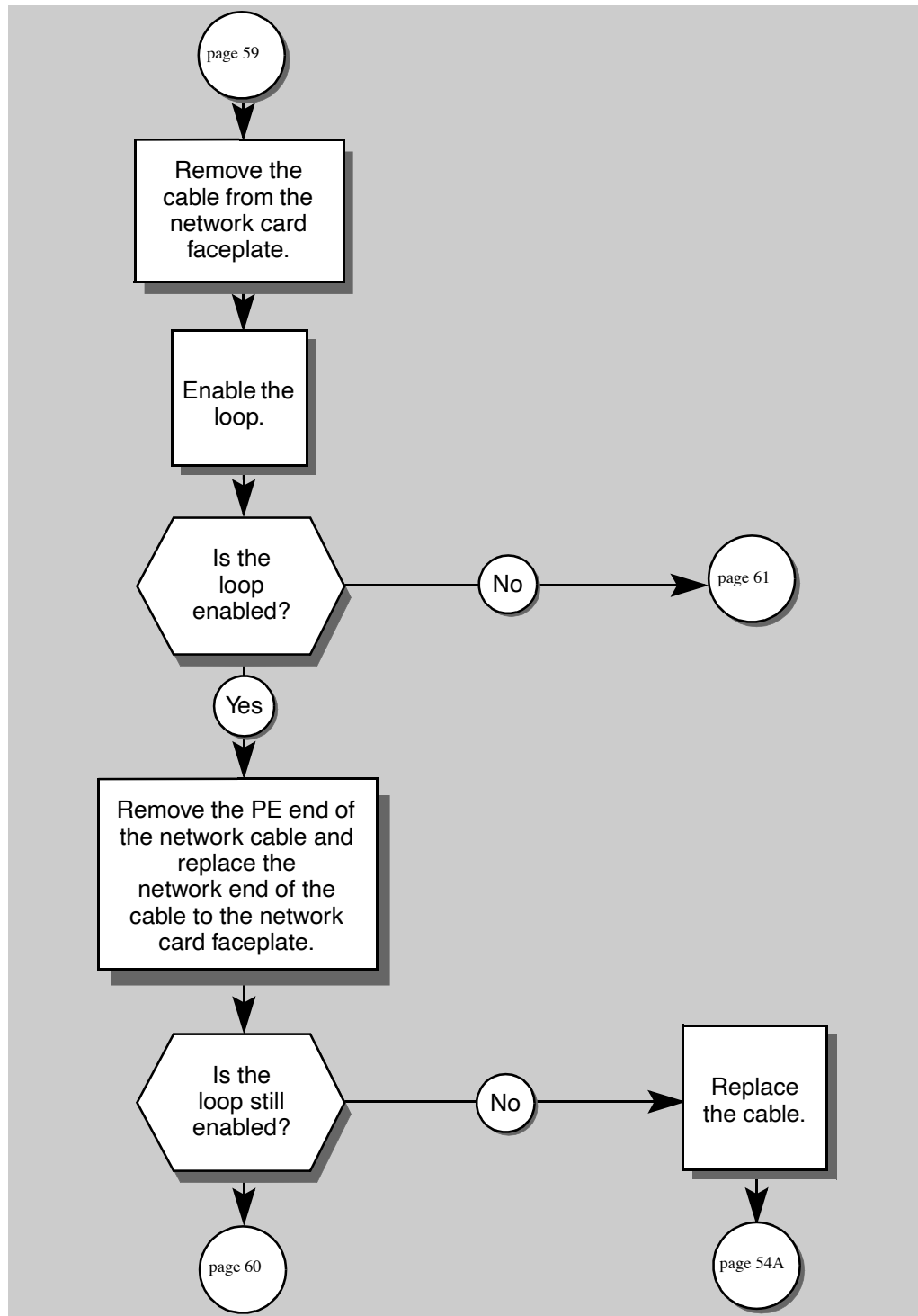


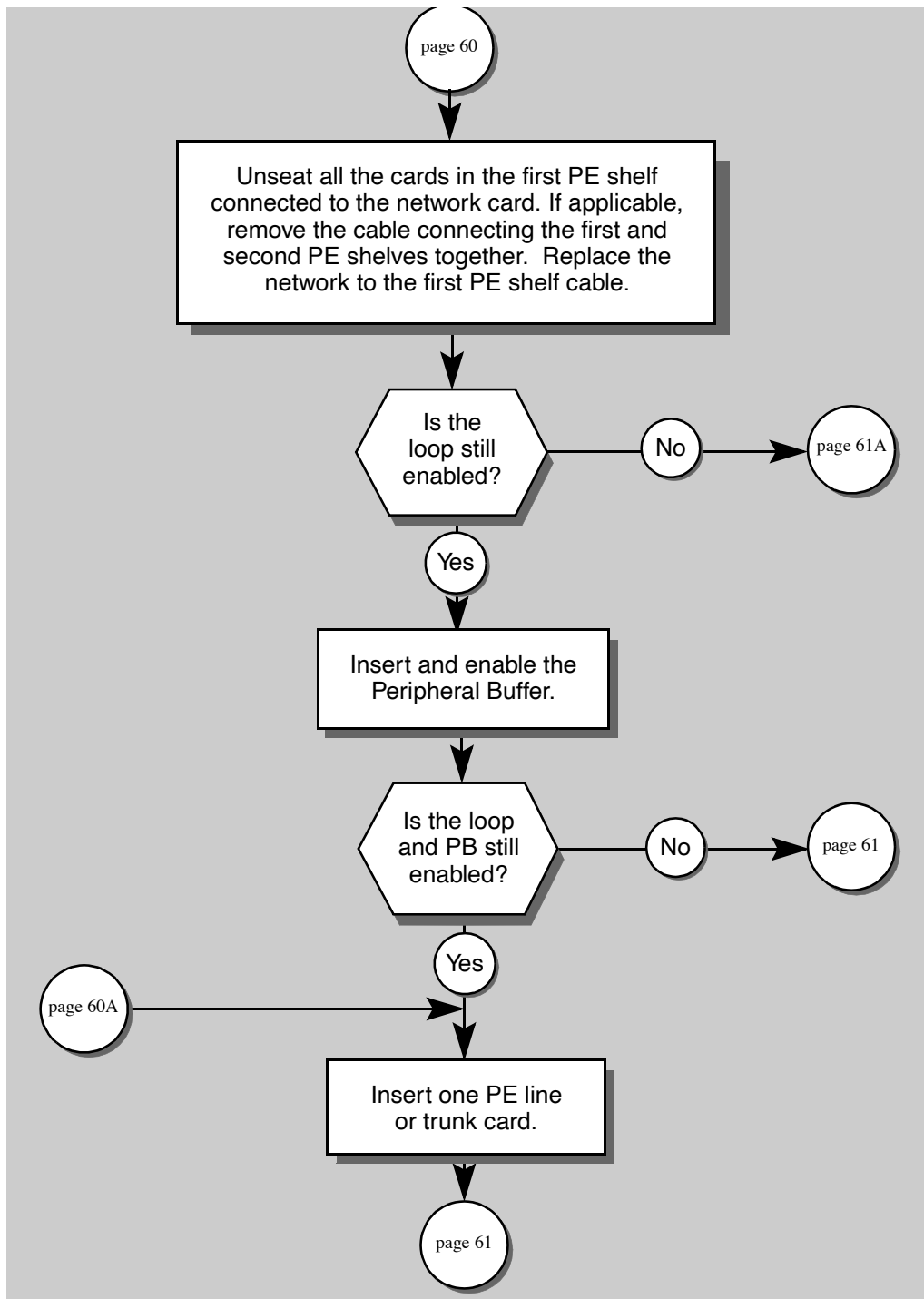


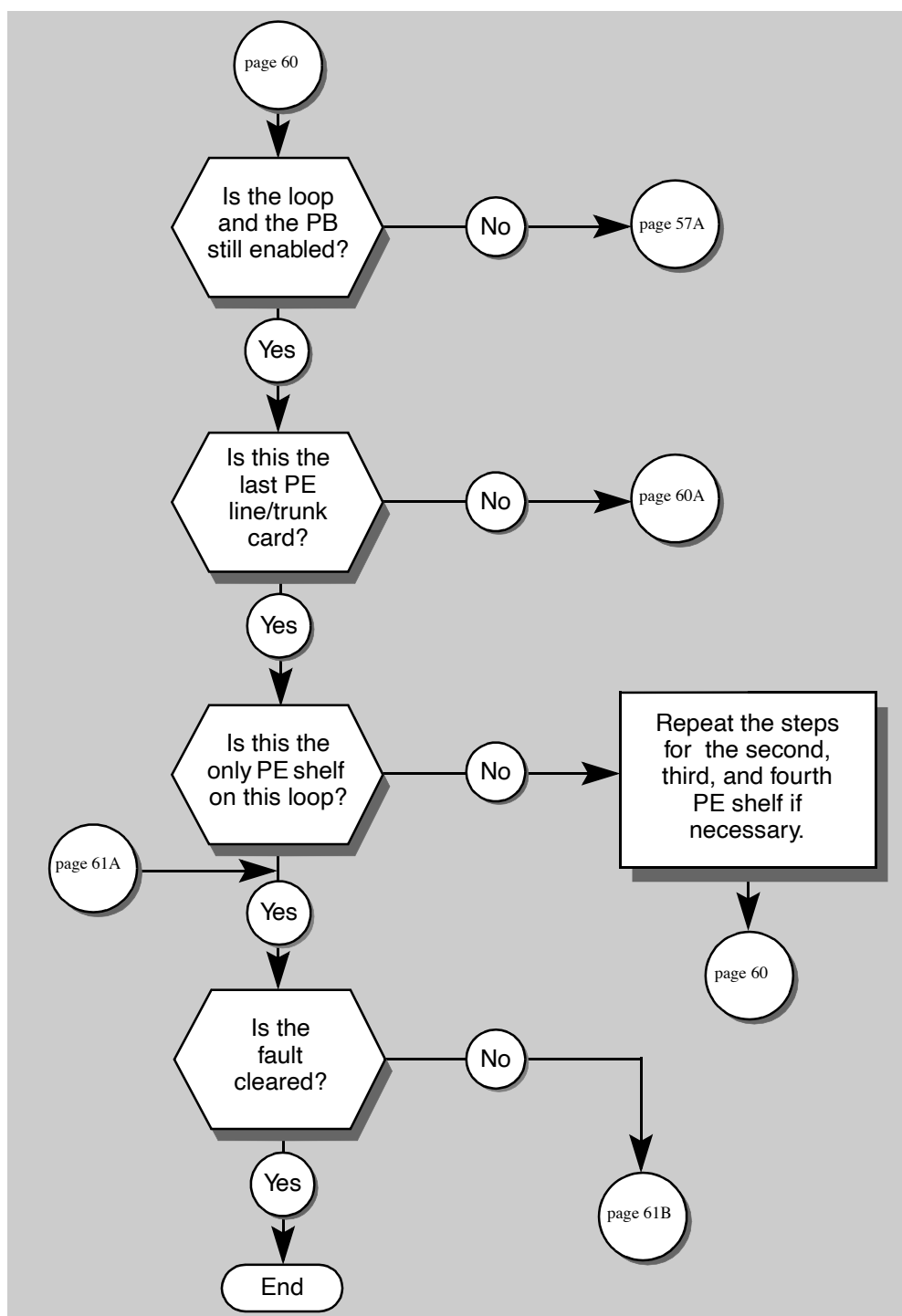
**58** Start here to find faults

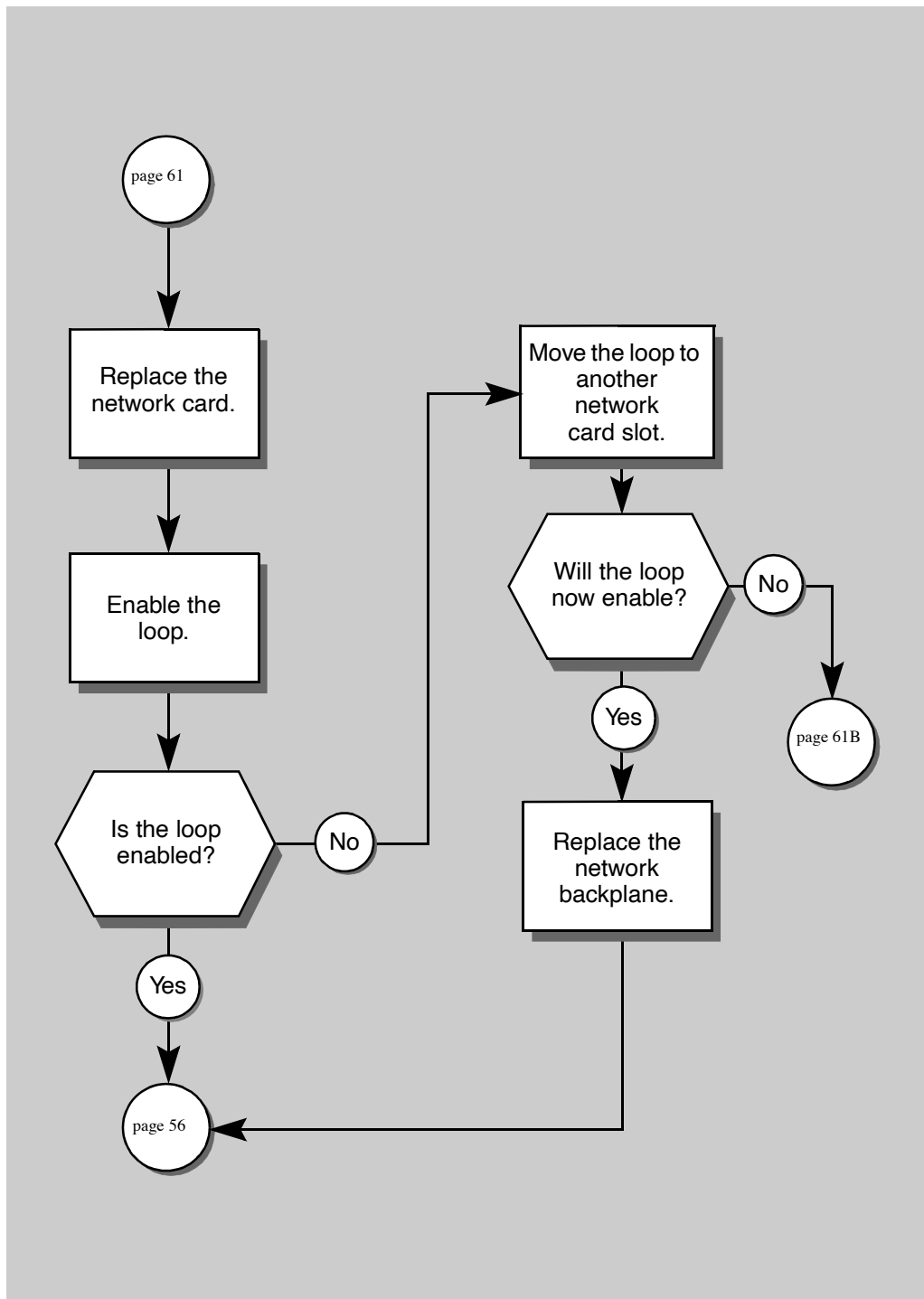
of 1474

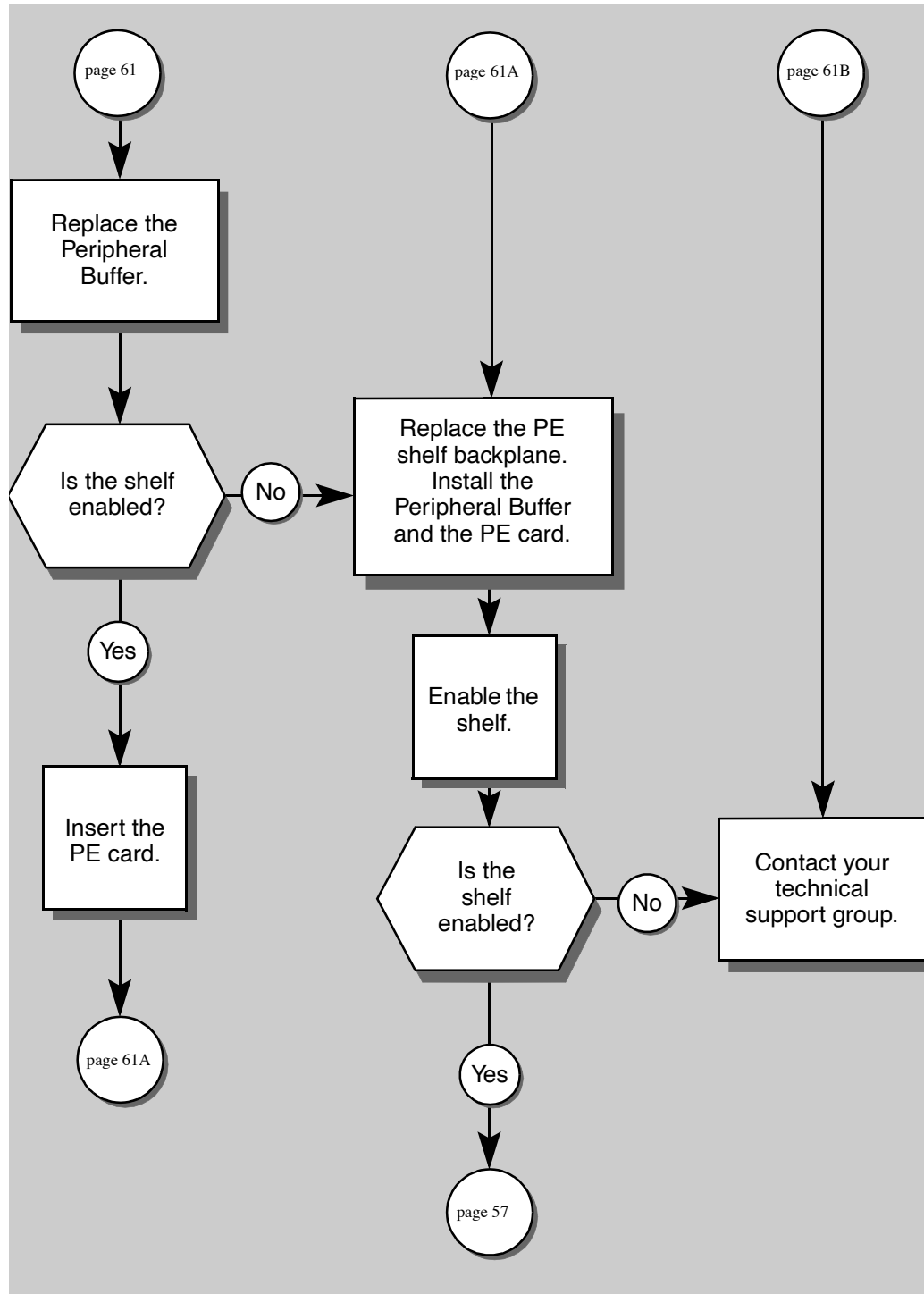












## Clearing PE faults

| STEP          | ACTION                                                  |           |
|---------------|---------------------------------------------------------|-----------|
| <b>1</b>      | <b>Match the DN of the reported telephone to its TN</b> |           |
|               | Use LD 20 or LD 22 TYPE = DNB                           |           |
| <b>2</b>      | <b>Get status of TN</b>                                 |           |
|               | Use LD 32 STAT I s c u                                  |           |
| <b>3</b>      | <b>Analyze status of TN</b>                             |           |
|               | <b>If</b>                                               | <b>Do</b> |
|               | loop is NT8D04                                          | undefined |
|               | loop is QPC414                                          | step 4    |
|               | or QPC 376                                              |           |
| <b>4</b>      | <b>Analyze status of loop</b>                           |           |
|               | <b>If</b>                                               | <b>Do</b> |
|               | loop disabled                                           | step 9    |
|               | loop enabled                                            | step 5    |
| <b>5</b>      | <b>Analyze status of shelf</b>                          |           |
|               | <b>If</b>                                               | <b>Do</b> |
|               | shelf disabled                                          | step 23   |
|               | shelf enabled                                           | step 6    |
| <b>6</b>      | <b>Analyze status of card</b>                           |           |
|               | <b>If</b>                                               | <b>Do</b> |
|               | card disabled                                           | step 33   |
|               | card enabled                                            | step 7    |
| <b>7</b>      | <b>Analyze status of unit</b>                           |           |
|               | <b>If</b>                                               | <b>Do</b> |
|               | unit disabled                                           | step 38   |
|               | unit enabled                                            | step 8    |
| — continued — |                                                         |           |



| STEP          | ACTION                                                                                                                               |           |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>8</b>      | <b>Analyze status of unit</b>                                                                                                        |           |
|               | <b>If</b>                                                                                                                            | <b>Do</b> |
|               | fault not cleared                                                                                                                    | step 40   |
|               | fault cleared                                                                                                                        | step 53   |
| <b>9</b>      | <b>Enable loop</b>                                                                                                                   |           |
|               | Use LD 32 ENLL1                                                                                                                      |           |
| <b>10</b>     | <b>Analyze status of loop</b>                                                                                                        |           |
|               | <b>If</b>                                                                                                                            | <b>Do</b> |
|               | loop enabled                                                                                                                         | step 5    |
|               | loop disabled                                                                                                                        | step 11   |
| <b>11</b>     | <b>Isolate loop from the cable connecting it to the peripheral equipment. This will allow you to test the loop for faults.</b>       |           |
|               | Disconnect the cable from the network card faceplate.                                                                                |           |
| <b>12</b>     | <b>Enable loop</b>                                                                                                                   |           |
|               | Use LD 32 ENLL                                                                                                                       |           |
| <b>13</b>     | <b>Analyze status of loop</b>                                                                                                        |           |
|               | <b>If</b>                                                                                                                            | <b>Do</b> |
|               | loop disabled                                                                                                                        | step 45   |
|               | enabled, loop passes test                                                                                                            | step 14   |
| <b>14</b>     | <b>Isolate cable from the peripheral equipment shelf. This will allow you to test the cable for faults.</b>                          |           |
|               | Disconnect the cable from the peripheral buffer card faceplate, then reconnect the network card end of the cable removed in step 11. |           |
| <b>15</b>     | <b>Analyze status of loop</b>                                                                                                        |           |
|               | <b>If</b>                                                                                                                            | <b>Do</b> |
|               | loop disabled                                                                                                                        | step 50   |
|               | loop still enabled                                                                                                                   | step 16   |
| — continued — |                                                                                                                                      |           |

| STEP                                     | ACTION                                                                                                                                                                                                                                                                                                                     |    |    |                                    |         |                                          |         |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|------------------------------------|---------|------------------------------------------|---------|
| 16                                       | <b>Isolate the peripheral equipment shelf backplane and the peripheral buffer from the peripheral equipment cards. This will allow you to test the backplane and buffer for faults.</b>                                                                                                                                    |    |    |                                    |         |                                          |         |
|                                          | Unseat all peripheral equipment cards except the peripheral buffer from peripheral equipment shelf. If applicable, remove the cable connecting the buffer of first peripheral equipment shelf to the buffer of the second peripheral equipment shelf. Reconnect the cable to the buffer card faceplate removed in step 14. |    |    |                                    |         |                                          |         |
| 17                                       | <b>Analyze status of loop.</b>                                                                                                                                                                                                                                                                                             |    |    |                                    |         |                                          |         |
|                                          | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>loop disabled</td><td>step 50</td></tr> <tr> <td>loop still enabled</td><td>step 16</td></tr> </table>                                                                                                                                                                   | If | Do | loop disabled                      | step 50 | loop still enabled                       | step 16 |
| If                                       | Do                                                                                                                                                                                                                                                                                                                         |    |    |                                    |         |                                          |         |
| loop disabled                            | step 50                                                                                                                                                                                                                                                                                                                    |    |    |                                    |         |                                          |         |
| loop still enabled                       | step 16                                                                                                                                                                                                                                                                                                                    |    |    |                                    |         |                                          |         |
| 18                                       | <b>Isolate peripheral equipment cards. This will allow you to test the card for faults.</b>                                                                                                                                                                                                                                |    |    |                                    |         |                                          |         |
|                                          | Insert one peripheral equipment card.                                                                                                                                                                                                                                                                                      |    |    |                                    |         |                                          |         |
| 19                                       | <b>Wait approximately one minute after inserting a peripheral equipment card, then analyze status of loop and peripheral buffer.</b>                                                                                                                                                                                       |    |    |                                    |         |                                          |         |
|                                          | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>loop or peripheral buffer disabled</td><td>step 35</td></tr> <tr> <td>loop and peripheral buffer still enabled</td><td>step 20</td></tr> </table>                                                                                                                        | If | Do | loop or peripheral buffer disabled | step 35 | loop and peripheral buffer still enabled | step 20 |
| If                                       | Do                                                                                                                                                                                                                                                                                                                         |    |    |                                    |         |                                          |         |
| loop or peripheral buffer disabled       | step 35                                                                                                                                                                                                                                                                                                                    |    |    |                                    |         |                                          |         |
| loop and peripheral buffer still enabled | step 20                                                                                                                                                                                                                                                                                                                    |    |    |                                    |         |                                          |         |
| 20                                       | <b>Test the remaining unseated peripheral equipment cards.</b>                                                                                                                                                                                                                                                             |    |    |                                    |         |                                          |         |
| 21                                       | <b>Is this last peripheral shelf connected to this loop?</b>                                                                                                                                                                                                                                                               |    |    |                                    |         |                                          |         |
| 22                                       | <b>Analyze status of fault</b>                                                                                                                                                                                                                                                                                             |    |    |                                    |         |                                          |         |
|                                          | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>fault not cleared</td><td>step 51</td></tr> <tr> <td>fault cleared</td><td>step 53</td></tr> </table>                                                                                                                                                                    | If | Do | fault not cleared                  | step 51 | fault cleared                            | step 53 |
| If                                       | Do                                                                                                                                                                                                                                                                                                                         |    |    |                                    |         |                                          |         |
| fault not cleared                        | step 51                                                                                                                                                                                                                                                                                                                    |    |    |                                    |         |                                          |         |
| fault cleared                            | step 53                                                                                                                                                                                                                                                                                                                    |    |    |                                    |         |                                          |         |
| 23                                       | <b>Enable shelf (shelf is actually the peripheral buffer).</b>                                                                                                                                                                                                                                                             |    |    |                                    |         |                                          |         |
|                                          | Use LD 32 ENLS I s.                                                                                                                                                                                                                                                                                                        |    |    |                                    |         |                                          |         |
| — continued —                            |                                                                                                                                                                                                                                                                                                                            |    |    |                                    |         |                                          |         |

| STEP                       | ACTION                                                                                                                                                                                                                              |           |           |                           |         |                            |         |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------------------------|---------|----------------------------|---------|
| <b>24</b>                  | <b>Analyze status of shelf</b>                                                                                                                                                                                                      |           |           |                           |         |                            |         |
|                            | <table> <tr> <td><b>If</b></td><td><b>Do</b></td></tr> <tr> <td>Peripheral buffer enabled</td><td>step 6</td></tr> <tr> <td>Peripheral buffer disabled</td><td>step 26</td></tr> </table>                                           | <b>If</b> | <b>Do</b> | Peripheral buffer enabled | step 6  | Peripheral buffer disabled | step 26 |
| <b>If</b>                  | <b>Do</b>                                                                                                                                                                                                                           |           |           |                           |         |                            |         |
| Peripheral buffer enabled  | step 6                                                                                                                                                                                                                              |           |           |                           |         |                            |         |
| Peripheral buffer disabled | step 26                                                                                                                                                                                                                             |           |           |                           |         |                            |         |
| <b>25</b>                  | <b>Isolate peripheral equipment line cards from the peripheral buffer and shelf backplane.</b>                                                                                                                                      |           |           |                           |         |                            |         |
|                            | Remove all peripheral equipment line cards except the peripheral buffer                                                                                                                                                             |           |           |                           |         |                            |         |
| <b>26</b>                  | <b>Analyze status of shelf</b>                                                                                                                                                                                                      |           |           |                           |         |                            |         |
|                            | <table> <tr> <td><b>If</b></td><td><b>Do</b></td></tr> <tr> <td>Peripheral buffer enabled</td><td>step 19</td></tr> <tr> <td>Peripheral buffer disabled</td><td>step 27</td></tr> </table>                                          | <b>If</b> | <b>Do</b> | Peripheral buffer enabled | step 19 | Peripheral buffer disabled | step 27 |
| <b>If</b>                  | <b>Do</b>                                                                                                                                                                                                                           |           |           |                           |         |                            |         |
| Peripheral buffer enabled  | step 19                                                                                                                                                                                                                             |           |           |                           |         |                            |         |
| Peripheral buffer disabled | step 27                                                                                                                                                                                                                             |           |           |                           |         |                            |         |
| <b>27</b>                  | <b>Replace the peripheral buffer</b>                                                                                                                                                                                                |           |           |                           |         |                            |         |
|                            | Move peripheral buffer faceplate switch to DIS, remove peripheral buffer card, insert known good peripheral buffer card, move known good peripheral buffer faceplate switch to ENL, use LD 32 ENLS I s to enable peripheral buffer. |           |           |                           |         |                            |         |
| <b>28</b>                  | <b>Analyze status of shelf</b>                                                                                                                                                                                                      |           |           |                           |         |                            |         |
|                            | <table> <tr> <td><b>If</b></td><td><b>Do</b></td></tr> <tr> <td>Peripheral buffer enabled</td><td>step 30</td></tr> <tr> <td>Peripheral buffer disabled</td><td>step 29</td></tr> </table>                                          | <b>If</b> | <b>Do</b> | Peripheral buffer enabled | step 30 | Peripheral buffer disabled | step 29 |
| <b>If</b>                  | <b>Do</b>                                                                                                                                                                                                                           |           |           |                           |         |                            |         |
| Peripheral buffer enabled  | step 30                                                                                                                                                                                                                             |           |           |                           |         |                            |         |
| Peripheral buffer disabled | step 29                                                                                                                                                                                                                             |           |           |                           |         |                            |         |
| <b>29</b>                  | <b>Replace all peripheral equipment cards.</b>                                                                                                                                                                                      |           |           |                           |         |                            |         |
|                            | Re-seat peripheral equipment cards then proceed to step 6.                                                                                                                                                                          |           |           |                           |         |                            |         |
| <b>30</b>                  | <b>Replace peripheral equipment shelf backplane.</b>                                                                                                                                                                                |           |           |                           |         |                            |         |
|                            | Follow shelf installation procedures. Re-seat peripheral buffer and peripheral equipment line cards.                                                                                                                                |           |           |                           |         |                            |         |
| <b>31</b>                  | <b>Enable shelf.</b>                                                                                                                                                                                                                |           |           |                           |         |                            |         |
|                            | Use LD 32 ENLS I s c.                                                                                                                                                                                                               |           |           |                           |         |                            |         |
| <b>32</b>                  | <b>Analyze status of shelf</b>                                                                                                                                                                                                      |           |           |                           |         |                            |         |
|                            | <table> <tr> <td><b>If</b></td><td><b>Do</b></td></tr> <tr> <td>Peripheral buffer enabled</td><td>step 51</td></tr> <tr> <td>Peripheral buffer disabled</td><td>step 6</td></tr> </table>                                           | <b>If</b> | <b>Do</b> | Peripheral buffer enabled | step 51 | Peripheral buffer disabled | step 6  |
| <b>If</b>                  | <b>Do</b>                                                                                                                                                                                                                           |           |           |                           |         |                            |         |
| Peripheral buffer enabled  | step 51                                                                                                                                                                                                                             |           |           |                           |         |                            |         |
| Peripheral buffer disabled | step 6                                                                                                                                                                                                                              |           |           |                           |         |                            |         |
|                            | <b>— continued —</b>                                                                                                                                                                                                                |           |           |                           |         |                            |         |

| STEP | ACTION                                                                                                                                   |
|------|------------------------------------------------------------------------------------------------------------------------------------------|
| 33   | <b>Enable peripheral equipment card.</b><br>Use LD 32 ENLS I s c.                                                                        |
| 34   | <b>Analyze status of card</b>                                                                                                            |
|      | <b>If</b> <b>Do</b>                                                                                                                      |
|      | card enabled                      step 51                                                                                                |
|      | card disabled                    step 6                                                                                                  |
| 35   | <b>Replace peripheral equipment card</b>                                                                                                 |
|      | Remove peripheral equipment card, insert known good peripheral equipment card, use LD 32 ENLC I s c to enable peripheral equipment card. |
| 36   | <b>Test peripheral equipment card unit</b>                                                                                               |
|      | Use LD 32 ENLC I s c u to enable peripheral equipment card unit.                                                                         |
| 37   | <b>Analyze status of unit</b>                                                                                                            |
|      | <b>If</b> <b>Do</b>                                                                                                                      |
|      | unit enabled                      step 8                                                                                                 |
|      | unit disabled                    step 51                                                                                                 |
| 38   | <b>Test peripheral equipment card unit.</b>                                                                                              |
|      | Use LD 32 ENLC I s c u to enable peripheral equipment card unit.                                                                         |
| 39   | <b>Analyze status of unit</b>                                                                                                            |
|      | <b>If</b> <b>Do</b>                                                                                                                      |
|      | unit enabled                      step 8                                                                                                 |
|      | unit disabled                    step 35                                                                                                 |
| 40   | <b>Test telephone</b>                                                                                                                    |
|      | Replace telephone                                                                                                                        |
| 41   | <b>Analyze status of telephone</b>                                                                                                       |
|      | <b>If</b> <b>Do</b>                                                                                                                      |
|      | telephone working              step 52                                                                                                   |
|      | telephone not working        step 42                                                                                                     |
| 42   | <b>Test wiring from telephone to peripheral shelf.</b>                                                                                   |
|      | Replace defective or misplaced wiring                                                                                                    |
|      | — continued —                                                                                                                            |

| STEP                  | ACTION                                                                                                                                                                                                                                                                                                         |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>43</b>             | <b>Analyze status of telephone</b>                                                                                                                                                                                                                                                                             |
| <b>If</b>             | <b>Do</b>                                                                                                                                                                                                                                                                                                      |
| telephone working     | step 53                                                                                                                                                                                                                                                                                                        |
| telephone not working | step 51                                                                                                                                                                                                                                                                                                        |
| <b>44</b>             | <b>Isolate additional peripheral equipment shelf backplanes and peripheral buffers from the peripheral equipment cards.</b>                                                                                                                                                                                    |
|                       | Do Step 16.                                                                                                                                                                                                                                                                                                    |
|                       | <div style="border: 1px solid black; padding: 10px; margin: 10px 0;">  <p><b>Caution</b></p> <p>The following action will interrupt telephone service to the second 68 on this card.</p> </div>                               |
| <b>45</b>             | <b>Test loop for fault.</b>                                                                                                                                                                                                                                                                                    |
|                       | Use LD 32 DISL I (both loops as applicable), move network card faceplate switch to DIS, remove network faceplate cables(s), remove network card, insert known good network card, replace network faceplate cable(s), move known good network card faceplate switch to ENL, use LD 32 ENLS I to enable loop(s). |
| <b>46</b>             | <b>Analyze status of loop.</b>                                                                                                                                                                                                                                                                                 |
| <b>If</b>             | <b>Do</b>                                                                                                                                                                                                                                                                                                      |
| loop enabled          | step 5                                                                                                                                                                                                                                                                                                         |
| loop disabled         | step 47                                                                                                                                                                                                                                                                                                        |
| <b>47</b>             | <b>Test network card.</b>                                                                                                                                                                                                                                                                                      |
|                       | Move network card to another position and repeat step 45.                                                                                                                                                                                                                                                      |
| <b>48</b>             | <b>Analyze status of loop.</b>                                                                                                                                                                                                                                                                                 |
| <b>If</b>             | <b>Do</b>                                                                                                                                                                                                                                                                                                      |
| loop disabled         | step 51                                                                                                                                                                                                                                                                                                        |
| loop enabled          | step 49                                                                                                                                                                                                                                                                                                        |
| <b>49</b>             | <b>Replace network shelf backplane.</b>                                                                                                                                                                                                                                                                        |
|                       | Use shelf replacement instructions and do step 5.                                                                                                                                                                                                                                                              |
|                       | <b>— continued —</b>                                                                                                                                                                                                                                                                                           |

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**Start here to find faults**

| STEP                                                                              | ACTION                                                                     |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <b>50</b>                                                                         | <b>Replace cable.</b><br>Use cable replacement instructions and do step 5. |
| <b>51</b>                                                                         | <b>You need help.</b><br>Contact your technical support group.             |
|  |                                                                            |

## ACD — ACD Load Management

For messages and descriptions refer to the *administration input/output guide*.

Refer to ACD Northern Telecom Publications for details. 

# ACD

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## ADD — ACD Data Dump

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ACD Northern Telecom Publications for details. 

# ADD

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## AMH — Message Handler

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ACD Northern Telecom Publications for details. 



## AML — LD 48 Application Module Link

### How the AML works

An Application Module Link (AML) connects the Meridian 1 with applications such as Meridian Mail, Meridian Link and CCR. Enhanced Serial Data Interface (ESDI) or Multi-purpose Serial Data Interface (MSDL) cards provide these links.

LD 48 is used to maintain these links. AML messages are output to indicate command error and status conditions on these links.

# AML

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| AML and AMLM commands |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Release |
| AML status            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| <b>STAT AML (x)</b>   | Get AML status.<br><br>This command outputs the status of layer two and layer seven of one or all configured AMLs. The designation (DES) of the AML is output if it has been defined for the port in LD 17.<br><br>Examples:<br><br><b>AML: 01 MSDL: 08 PORT: 00</b><br><b>LYR2: DSBL AUTO: OFF LYR7: DOWN</b><br><b>DES: MERIDIAN_MAIL</b><br><b>AML: 04 ESDI: 10</b><br><b>LYR2: EST AUTO: ON LYR7: ACTIVE</b>                                                                                                              | msdl-18 |
| Disable AML           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| <b>DIS AML x</b>      | Disable AML x.<br><br>Whenever the third parameter (LYR2, LYR7, etc.) is not typed, the overlay defaults the third parameter of the DIS command to LYR2. Therefore, this command is equivalent to DIS AML x LYR2. Refer to DIS AML x LYR2 command definition, for more information.                                                                                                                                                                                                                                           | msdl-18 |
| <b>DIS AML x AUTO</b> | Disable AUTO recovery on AML x (MSDL only). This command is not available for an ESDI AML.                                                                                                                                                                                                                                                                                                                                                                                                                                    | msdl-18 |
| <b>DIS AML x LYR2</b> | Disable layer two on AML x.<br><br>MSDL Requirement: The MSDL card must be enabled. The AML link state can be any state other than the disabled state, and should not be in the process of self-test.<br>Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.<br><br><b>MSDL Response:</b> The AML link state is changed to the disable state. The MSDL port on which the AML is configured is disabled.<br><br><b>ESDI Response:</b> The ESDI port is disabled. The port must be idle. | msdl-18 |

| AML and AMLM commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Release |
| <b>Disable AML</b>                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |
| <b>DIS AML x LYR7</b>             | <p>Disable layer seven on AML x.</p> <p>The MSDL or ESDI card must be enabled. The AML layer two must be enabled and established, and AML layer seven must also be enabled.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 followed by EST AML x followed by ENL AML x LYR7 must have been executed at an earlier time.</p> <p><b>Response:</b> A request to disable the AML layer seven is issued. SL-1 will stop sending polling messages to the far-end.</p> | msdl-18 |
| <b>DIS AML x MDL</b>              | <p>Disable MDL error reporting on AML x (MSDL only).</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> The MSDL AML loadware command to disable the debug monitor is sent to the MSDL card.</p> <p>This command is not available for ESDI AML.</p>                                             | msdl-18 |
| <b>DIS AML x MON</b>              | <p>Disable monitor on AML x (MSDL only).</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> The MSDL AML loadware command to disable the debug monitor is sent to the MSDL card.</p> <p>This command is not available for ESDI AML.</p>                                                         | msdl-18 |

# AML

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| AML and AMLM commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Command                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Release          |
| <b>Enable AML</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| <b>ENL AML x</b>                  | <p>Enable AML x.</p> <p><b>For MSDL:</b> If AUTO recovery is off, then this command is the same as the ENL AML x LYR2 command. If AUTO recovery is on, an attempt is made to establish the link (layer two) and the application (layer seven).</p> <p><b>For ESDI:</b> This is the same as the ENL AML x LYR2 command.</p>                                                                                                                                                                                                                                                                          | esdi/<br>msdl-18 |
| <b>ENL AML x<br/>ACMS</b>         | Enable automatic set-up on AML x (ESDI only). This command is valid only for ESDI AML and is not available on the MSDL AML. It is equivalent to ACMS x command.                                                                                                                                                                                                                                                                                                                                                                                                                                     | esdi-18          |
| <b>ENL AML x<br/>AUTO</b>         | Enable AUTO recovery on AML x (MSDL only). This command is not available for ESDI AML links.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | msdl-18          |
| <b>ENL AML x<br/>FDL</b>          | <p>Force download loadware to the MSDL card and enable AML x.</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML link state must be in the disable state. All other MSDL AML links configured on the same MSDL card must be in the disable state. Example: ENL MSDL x must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> The MSDL AML loadware is downloaded to the MSDL card. While download is in progress a series of dots are output. Once the command is executed successfully the ENL AML x LYR2 command is executed automatically</p>                     | msdl-18          |
| <b>ENL AML x<br/>LYR2</b>         | <p>Enable layer two on AML x.</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML link state must be in the disable state. Example: ENL MSDL x must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> The AML link state is changed to the release state. The MSDL port on which the AML is configured is enabled. If the ENL AML x command is executed successfully, and MSDL AML auto recovery is in the enable state, then the EST AML x is issued automatically.</p> <p><b>ESDI Response:</b> The ESDI port is enabled. The ESDI card must first be disabled.</p> | msdl-18          |



| AML and AMLM commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Release |
| <b>Enable AML</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>ENL AML x LYR7</b>             | <p>Enable layer seven on AML x.</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML link should not be in the simulation mode. The AML layer two must be enabled and established, and AML layer seven must be disabled.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 followed by EST AML x must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> A request to enable the AML layer seven is issued. Polling messages are sent to the far end.</p> <p><b>ESDI Response:</b> Layer seven is enabled for the ESDI AML. The ENL AML x (LYR2) command must be completed successfully first.</p> | msdl-18 |
| <b>ENL AML x MDL</b>              | <p>Enable MDL error reporting on AML x (MSDL only).</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> The MSDL AML loadware command to enable the MDL error reporting is sent to the MSDL card.</p> <p>This command is not available for ESDI AML links.</p>                                                                                                                                                                                               | msdl-18 |
| <b>ENL AML x MON</b>              | <p>Enable monitor on AML x (MSDL only).</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> The MSDL AML loadware command to enable the debug monitor is sent to the MSDL card.</p> <p>This command is not available for ESDI AML links.</p>                                                                                                                                                                                                                 | msdl-18 |

| AML and AMLM commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Release |
| <b>Establish layer two</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>EST AML x</b>                  | <p>Establish layer two on AML x.</p> <p>The layer two is established for the AML configured on the given MSDL port. The layer two is connected for the AML configured on the ESDI card.</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled and released.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> The MSDL AML link state is changed into the established state. If EST AML x executes successfully, and provided that the MSDL AML AUTO recovery is enabled, next the ENL AML x LYR7 is executed automatically.</p> <p><b>ESDI Response:</b> Layer two is connected for the ESDI AML. The port must be enabled first.</p>                              | msdl-18 |
| <b>Release layer two</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>RLS AML x</b>                  | <p>Release layer two on AML x.</p> <p>The layer two is released for the AML link configured on the given MSDL port. The layer two is disconnected for the AML configured on the ESDI card.</p> <p>MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled and established. Example: ENL MSDL x followed by ENL AML x LYR2 followed by EST AML x must have been executed at an earlier time.</p> <p><b>MSDL Response:</b> Prior to the execution of the RLS AML x, if the MSDL AML layer seven is enabled, the DIS AML x LYR7 is automatically executed. The MSDL AML state is changed to the release state.</p> <p><b>ESDI Response:</b> The layer two is disconnected for the ESDI AML port. The port must be in the connected and idle state first.</p> | msdl-18 |

## AML and AMLM commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Get address

**MAP AML (x)** Get physical address and card name of one or all AMLs. msdl-18

This command outputs the card name and physical card address and ports for one or all AMLs. This information is also output with the STAT AML command. For example:

```
MAP AML
AML: 05      ESDI: 04
AML: 12      MSDL:07      PORT:1
```

### Self test

**SLFT AML x** Self-test on AML x. msdl-18

This command runs the local loop back test for MSDL AML, and the ESDI self-test for the ESDI AML.

MSDL Requirement: The MSDL card must be enabled. The AML layer two must be disabled.

Example: ENL MSDL x must have been executed at an earlier time.

**MSDL Response:** The MSDL AML local loop back test is executed and upon completion of the test the MSDL AML port is set to the disable state.

### Switch

**SWCH AML x y** Switch active (x) and standby (y) AML. This is AML switchover, where x is the active AML switching to standby and y is the standby AML to become active. msdl-18

# AML

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### AML and AMLM commands (continued)

| Command                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Release |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Upload parameter</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
| <b>UPLD AML x<br/>TBL x</b> | <p>Upload parameter table 1 to 4 from AML x (MSDL only).</p> <p>The MSDL AML maintenance error log table, is uploaded from the MSDL card and is displayed on the TTY screen.</p> <p>The parameter tables are:</p> <ul style="list-style-type: none"><li>TBL1 = AML maintenance error log table</li><li>TBL2 = AML downloaded parameter table</li><li>TBL3 = AML protocol error log table</li><li>TBL4 = AML traffic table</li></ul> <p>MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.</p> <p>Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.</p> <p><b>Response:</b> MSDL AML table is uploaded and is displayed on the TTY screen.</p> <p>This command is not available for the ESDI card.</p> | msdl-18 |

## AML messages

### AML001 x

x = AML number in decimal.

ESDI: To enable CSL, ESDI has to be in “BUSY” state.

**ACTION:** To bring the link up automatically, use the following commands in this order: DIS AML x then ENL AML x and finally ACMS.

### AML002 x

x = AML number in decimal.

ESDI/MSDL: For SWCH AML n1 n2 command, both links should belong to the same VAS.

**ACTION:** Refer to the *administration input/output guide* and use LD 22 PRT CFN to check VAS. Ensure that this is where you want to switch.

### AML003 x

x = AML number in decimal.

ESDI/MSDL: For SWCH AML n1 n2 command, n2 should be in the STANDBY state.

**ACTION:** Use STAT AML to determine the ESDI/MSDL state.

### AML004 x

x = AML number in decimal.

No VAS ID exists for the given AML. Therefore layer seven cannot be enabled.

**ACTION:** Refer to the *administration input/output guide* and use LD 17 CFN to program a VAS ID.

### AML005 x

x = AML number in decimal.

ESDI/MSDL: For SWCH AML n1 n2 command, n1 should be in the ACTIVE state.

**ACTION:** Ensure that you are switching from the active ESDI/MSDL to the standby ESDI/MSDL.

## AML006 x

x = AML number in decimal.

ESDI/MSDL: There is no response to polling message.

**ACTION:** Check the cables. Ensure the application is running. Refer to the application NTP for instructions to clear the problem. 

## AM LM — LD 48 Application Module Link

### How the AMLM works

An Application Module Link (AML) connects the Meridian 1 with applications such as Meridian Mail, Meridian Link and CCR. Enhanced Serial Data Interface (ESDI) or Multi-purpose Serial Data Interface (MSDL) cards provide these links.

LD 48 is used to maintain these links. AML messages are output to indicate command error and status conditions on these links.

## AML and AMLM commands

Refer to the *AML* chapter for the AMLM commands.

## AML messages

### AML<sub>M</sub>001 x

Illegal card type on AML x. Only ESDI or MSDL cards are allowed.

**ACTION:** Ensure that this is the command you wanted to use.

### AML<sub>M</sub>002 x

For SMLP command, both ports must be in the loop back mode.

**ACTION:** Use the CNFG command first.

### AML<sub>M</sub>003 x

The address of the ESDI status register on AML x is corrupt.

**ACTION:** Check the ESDI card switches. Refer to the *administration input/output guide*. Use LD 22 PRT CFN, to check the ESDI programming.

### AML<sub>M</sub>004 x

To use the SMLP command, both ESDI ports must be in IDLE state.

**ACTION:** Ensure that this is the command you wanted to use.

### AML<sub>M</sub>005 x

Call-register time-out is not supported for MSDL AML.

**ACTION:** Contact your technical-support group.

### AML<sub>M</sub>006 x

Automatic Set Up command not supported for MSDL AML x.

**ACTION:** For MSDL AML, first ensure the MSDL AML auto recovery is turned ON. Next enable the link using ENL AML x. This will establish and enable layer 7 for the MSDL AML.

### AML<sub>M</sub>007 x

AML background AUDIT not supported for ESDI AML.

**ACTION:** Ensure that this is the command you wanted to use.



## AML

Both of the MSDL AML links must be in the disabled state. Then the stimulation loop back command can be issued.

**ACTION:** Disable the links first, then try the stimulation loop back command again.

## AML

Loop back from ESDI to MSDL or MSDL to ESDI not allowed.

**ACTION:** Ensure that this is the command you wanted to use.

## AML

The MSDL AML command request is rejected since link **x** is already disabled.

**ACTION:** Ensure that this is the command you wanted to use.

## AML

The MSDL AML command request is rejected, since link **x** is already established.

**ACTION:** Ensure that this is the command you wanted to use.

## AML

The MSDL AML command request is rejected, since link **x** is already released.

**ACTION:** Ensure that this is the command you wanted to use.

## AML

The MSDL AML command request is rejected, since link **x** is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

## AML

The MSDL AML command request is rejected, since link **x** is in process of self test.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## AML

The MSDL AML command request is rejected, since link **x** is in process of establishing.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## **AMLM016 x**

The MSDL AML command request is rejected, since link **x** is in process of releasing.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## **AMLM017 x**

The MSDL AML command request is rejected, since link **x** is in process of disabling.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## **AMLM018 x**

The MSDL AML command request is rejected, since link **x** is in process of loadware downloading.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## **AMLM019 x**

The MSDL AML command request is rejected, since the link **x** is in process of auditing.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## **AMLM020 x**

The MSDL AML command request is rejected, since link **x** is in the disable state.

**ACTION:** Use the ENL AML **x** command first.

## **AMLM021 x**

The MSDL AML command request is rejected, since link **x** is not in the disable state.

**ACTION:** Use the DIS AML **x** command first.

## **AMLM022 x**

The ESDI AML or MSDL AML command is rejected since it is not allowed at this point.

**ACTION:** Ensure that this is the command you wanted to use.

## AML M 023 x

Data corruption. The ESDI AML IO priority number is corrupted on AML **x**.

**ACTION:** Check the ESDI card switch settings and cables.

## AML M 024 x

There is no response from the ESDI card. The ESDI hardware may not be equipped.

**ACTION:** Check that the ESDI card is seated in the network shelf and that it is programmed properly.

## AML M 025 x

Error: ESDI in permanent interrupt.

**ACTION:** Follow the steps in the *Hardware replacement* guide to replace the ESDI card.

## AML M 026 x

For ESDI self test, the port under test, port **x**, should be in IDLE state and the other port, port **y**, of the ESDI card, if it is defined, should be in the DISABLE state.

**ACTION:** Disable port **y**, then re-enter your original command.

## AML M 027 x

The MSDL AML request is rejected, since the MSDL card is not operational.

**ACTION:** Make sure that the MSDL card enabled and re-enter the command.

## AML M 028 x

Warning: AML **x** is disabled and will not recover. This is regardless of the fact that the AML auto recovery was previously turned to the ON mode. The MSDL AML loadware requested to disable the link, and since this type of disable is not recoverable, the Meridian 1 will disable the link and will not attempt to recover.

**ACTION:** You must manually enable the AML link to bring the link up again.

## AMLM029

Warning: The AML is disabled and will not recover, since the MSDL AML background AUDIT failed to recover from the failure. This is regardless of the fact that the AML auto recovery was previously turned to the ON mode.

**ACTION:** You must manually enable the AML link to bring the link up again.

## AMLM030

The reset command is not supported for the ESDI AML.  
The command is only supported for MSDL AML.

**ACTION:** Ensure that this is the command you wanted to use.

## AMLM031

The reset command is allowed only when the link is established, and no pending link tasks are queued.

**ACTION:** Ensure that this is the command you wanted to use.

## AMLM032

Since the link is resetting the outgoing AML command is not executed.

**ACTION:** Wait until the link reset activity is terminated, and then try the command again.

## AMLM033

Warning: The AML went into an audit. After the audit it was determined that the link should recover to the disable state. If the auto recovery is turned ON, then regardless of it, the AML will remain in the disable state and will not attempt to recover.

**ACTION:** Manually bring the link up. 

## ATM — LD 92 Automatic Trunk

### How the ATM works

Automatic Trunk Maintenance (ATM) enables the Meridian 1 to be programmed to automatically schedule transmission and supervision tests on specified trunk groups terminating at the Meridian 1. ATM also reports the results to the maintenance system terminal.

Trunks that fail any of the tests are flagged so that rigorous tests can be performed manually using transmission test equipment. The system can be programmed to disable any of these flagged trunks, up to a configurable limit per trunk group, if they reach the programmable “out-of-service” threshold.

The ATM can be scheduled to run automatically and manually.

LD 92 tests TIE, CSA, WATS, FEX, DID and COT trunk groups automatically each day at times scheduled in the ATM Schedule block. LD 92 also allows for the manual testing of trunks.

# ATM

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| ATM commands                     |                                                                                                                                                                                                                                                                |         |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                          | Description                                                                                                                                                                                                                                                    | Release |
| Test DTI Channel                 |                                                                                                                                                                                                                                                                |         |
| <b>ATMC loop ch</b>              | Test DTI channel ch on specified loop.                                                                                                                                                                                                                         | atm-7   |
| <b>ATMC loop ch<br/>loop ch</b>  | Test specified DTI channel, with reference trunk.<br><br>Test the specified DTI channel (loop and channel of the first field) with the reference trunk (loop and channel of the second field).                                                                 | atm-7   |
| Test route                       |                                                                                                                                                                                                                                                                |         |
| <b>ATMR c r</b>                  | Test route r of customer c.<br><br>Accepts ADM Route number in R12+. When an ADM Route is entered, member numbers cannot be entered.                                                                                                                           | atm-7   |
| <b>ATMR c r m</b>                | Test route r of customer c with reference trunk member m.                                                                                                                                                                                                      | atm-7   |
| Test unit                        |                                                                                                                                                                                                                                                                |         |
| <b>ATMU l s c u</b>              | Test specified unit.<br><br>If the unit specified is an ADM trunk unit, no reference information can be entered.                                                                                                                                               | atm-7   |
| <b>ATMUY l s c u<br/>l s c u</b> | Test specified unit, with reference trunk.<br><br>Test the specified unit (l s c u of the first field) using the reference trunk (l s c u of the second field). If the unit specified is an ADM trunk unit, no reference information (L S C U) can be entered. | atm-7   |

| ATM commands (continued)          |                                                                                                                                                     |         |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                           | Description                                                                                                                                         | Release |
| <b>Clear/Get “ring/no answer”</b> |                                                                                                                                                     |         |
| <b>CLRR c r</b>                   | Clear “ring/no answer” count on route r for customer c.<br><br>Clears the “ring/no answer” count for every trunk member in the ADM Route specified. | atm-7   |
| <b>CLRU l x c u</b>               | Clear “ring/no answer” count on specified trunk unit.                                                                                               | atm-7   |
| <b>Clear/Get “ring/no answer”</b> |                                                                                                                                                     |         |
| <b>PRTR c r</b>                   | Get “ring/no answer” count for all members on route r for customer c.                                                                               | atm-7   |
| <b>PRTU l s c u</b>               | Get “ring/no answer” count specified unit.                                                                                                          | atm-7   |
| <b>Clear alarm</b>                |                                                                                                                                                     |         |
| <b>CMAJ</b>                       | Clear major alarm, reset power fail transfer and clear power fault alarm.                                                                           | atm-7   |
| <b>Termination</b>                |                                                                                                                                                     |         |
| <b>END</b>                        | Terminate test in progress.<br><br>This command can be entered at any time.                                                                         | atm-7   |

## ATM messages

The Automatic Trunk Maintenance (ATM) program tests TIE, CSA, WATS, FEX, DID and COT trunk groups automatically each day at times scheduled in the ATM Schedule Block. The ATM program also allows for the manual testing of trunks.

### Using the ATM message table to clear faults

To clear most trunk faults, the ATM action column suggests you use LD 36/41 overlays found in the TRK chapter. A few ATM actions require you to use overlay loads located in the *administration input/output guide*.

## ATM000

Program identifier.

**ACTION:** The ATM program is loaded and ready for you to enter commands.

## ATM001

No schedule block exists.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. If required, a schedule block can be programmed using LD 16 in the *administration input/output guide*.

## ATM002

There is no schedule block for this hour.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. If required, a schedule block for this hour can be programmed using LD 16 in the *administration input/output guide*.

## ATM003

The ATM aborted because it cannot perform far to near test.

**ACTION:** Contact your technical support group and have the trunk at the far end checked.

## ATM004

The user specified reference trunk does not meet the loss criteria for a reference trunk.

**ACTION:** Contact your technical support group.

## ATM005

An illegal input character.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM006

A loop is out-of-range. Loops on multi group systems range from 0 to 159. Loops on single group systems range from 0 to 31.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.



**ATM007**

The shelf is out of range. Units 0 to 3 only are allowed.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. Refer to the *NPR - LD 32* chapter, *Network card* in this guide.

**ATM008**

The Terminal Number translation (TNTRANS) failed on Tone Detector.

**ACTION:** Contact your technical support group.

**ATM009**

No tone detector is available to proceed onward.

**ACTION:** Contact your technical support group.

**ATM010**

1. No Tone Detector is defined in the data base.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. Refer to the *administration input/output guide* and use LD 20 TDET to check for the Tone Detector. Next use Digitone receiver and tone detector administration, LD 13 to program the Tone Detector.

2. The Tone Detector failed the self-test.

**ACTION:** Use TDET in LD 34 to test the Tone Detector. If the Tone Detector does not pass the test, replace it as per steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS Checking Tone and tone digit switches* chapter in this guide.

**ATM011**

Missing ATM route data.

**ACTION:** If required, ATM route data can be programmed using LD 16 in the *administration input/output guide*.

**ATM015**

The ATM received a wrong loop message.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

## ATM016

The tone detector is not maintenance busy when it should be; the system will set it.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

## ATM018

User specified reference trunk is not available.

**ACTION:** Contact your technical support group.

## ATM020

Given trunk is unequipped.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. If required, install a trunk card.

## ATM041 c

Customer **c** does not exist.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM042 c

Customer number **c** is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM051 c r

Customer **c**, Route **r** does not exist.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM052 c r

Customer **c**, Route **r** has no member.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command or refer to the *administration input/output guide*. Use LD 21 RDB to check route and member number. Correct route or member number in LD 14 trunk data block.

**ATM053 c r**

Customer **c**, Route **r** has no ATM data.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. If required, ATM route data can be programmed using LD 16 in the *administration input/output guide*.

**ATM054 c r**

Cannot find any reference trunk for Customer **c** Route **r** to perform near to far test.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. If this message appears repeatedly or the problem persists, contact your technical support group.

**ATM055 c r**

Customer **c**, Route number **r** is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM056 c r**

Member number is out-of-range for Customer **c**, Route **r**.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM057 c r**

Member number is not defined for specified Customer **c**, Route **r**.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command or refer to the *administration input/output guide*. Use LD 21 RDB to check the route and the customer number. Correct the route or the customer number in LD 16 route data block, or LD 15 customer data block.

**ATM058 c r**

ATM aborted because this Customer **c**, Route **r** has FEDC equal to FEC.

**ACTION:** Check with your engineering group and refer to the *administration input/output guide*. Use LD 21 RDB to check the FEDC response. Correct the FEDC response in LD 16 route data block.

## ATM059 c r

For ATMU and ATMC commands the test and reference trunk units cannot be the same.

**ACTION:** Ensure that this is the command you wanted to use.

## ATM071 c r m

Missing active Call Register during test of Customer **c**, Route **r**, Member **m**. The most probable fault is that the far end is On-Hook.

**ACTION:** Contact your technical support group and have the trunk at the far end checked.

## ATM201

The last command is still in progress.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## ATM202

Invalid argument(s).

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM203

Invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

## ATM204

Loop for first TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM205

Loop for second TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM206

Loop type for first TN is not supported by ATM.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM207**

Loop type for second TN is not supported by ATM.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM208**

Shelf for first TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM209**

Shelf for second TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM210**

Card for first TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM211**

Card for second TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM212**

Card for first TN does not exist in the database.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM213**

Card for second TN does not exist in the database.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM214**

Card type for first TN is not a trunk.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM215

Card type for second TN is not a trunk.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM216

Unit for first TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM217

Unit for second TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM218

Unit for first TN does not exist in the database.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM219

Unit for second TN does not exist in the database.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM220

Unit trunk type for first TN is not supported by ATM.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM221

Unit trunk type for second TN is not supported by ATM.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## ATM222

Channel for first TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM223**

Channel for second TN is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM224**

Loop and Channel for first TN is invalid.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM225**

Loop and Channel for second TN is invalid.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM226**

Channel for first TN does not exist in the data base.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM227**

Channel for second TN does not exist in the data base.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM228**

Channel for first TN is not configured as a trunk.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM229**

Channel for second TN is not configured as a trunk.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**ATM230**

Specified TNs not for same customer.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **ATM231**

Specified TNs not for same route.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **ATM232**

Loop for first TN does not exist in the data base.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **ATM233**

Loop for second TN does not exist in the data base.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **ATM235**

Loop for first TN is not a superloop.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **ATM236**

Loop for second TN is not a superloop.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **ATM240**

TDET is restricted. Disk does not have Tone Detector package (Pkg. 65) enabled.

**ACTION:** Have your technical support group contact Northern Telecom Technical Assistance Service to reset the package restriction flag. You can use LD 22 PRT, PKG xxx to check the restricted status of the package.

## **ATM241**

TN/Route tested is not an ADM TN/Route.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.



**ATM242**

RETEST For TNs in IDLE\_STATUS and ABRT\_RESULT.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**ATM301 l s c u x y**

The specified Tone Detector has failed testing due to faulty operation or lack of response. The x and y indicate the mode and test that failed.

| <b>x y</b> | <b>Mode</b>                          |
|------------|--------------------------------------|
| 0005       | 0001Mode 1 precise busy tone         |
| 0005       | 0003Mode 1 non-precise busy tone     |
| 0006       | 0001Mode 1 precise overflow tone     |
| 0006       | 0003Mode 1 non-precise overflow tone |
| 0007       | 0001Mode 1 ringback tone             |
| 0007       | 0003Mode 1 any tone                  |
| 0009       | 0001Mode 1 undefined tone            |
| 0009       | 0003Mode 2 undefined tone            |
| 0009       | 0005Mode 4 test tone                 |
| 0009       | 0007Mode 3 test tone                 |
| 0009       | 0009Mode 3 test tone                 |

**ACTION:** Use TDET in LD 34 to test the Tone Detector. If the Tone Detector does not pass the test, replace it following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS* chapter in this guide.

**ATM302**

The specified Tone Detector cannot be used by ATM because it was unable to perform the self-test.

**ACTION:** Use TDET in LD 34 to test the Tone Detector. If Tone Detector does not pass test, replace it following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses go to the *TDS* chapter in this guide.

**ATM304**

No tone and digit switch is available for Tone Detector testing.

**ACTION:** Contact your technical support group. 

# ATM

**106** LD 92 Automatic Trunk Maintenance

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## AUD — LD 44 Software Audit

### How the AUD works

LD 44 monitors the system operation and provides an indication of the general state of the system operation. The program is concerned primarily with the system software. When a software problem is encountered, the program attempts to clear the problem automatically.

\*CRINFO = Any Call Register (CR) information that follows an AUD message consists of: CR pointer, the progress mark word, and the originating and terminal numbers contained in the CR (4 words in total).

### Maintenance tip



If faults are encountered that are hardware or software related, run software audit passes. AUD000 indicates there are probably, no problems. If a problem exists, investigate further. A hardware fault and an unrelated software fault can occur within the same Meridian 1.

# AUD

| AUD commands |                                                                                                                                                                                                                           |         |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command      | Description                                                                                                                                                                                                               | Release |
| Run audit    |                                                                                                                                                                                                                           |         |
| <b>R x</b>   | Run audit, where x is the number of audit passes desired. Enter 0 for continuous auditing. R and x must be separated by a space or the system responds with the following.<br><br><b>AUD REQ ERR</b><br><br><b>AUDIT.</b> | basic-1 |

## AUD messages

### AUD001 -to -AUD611

Audit messages are not to be interpreted as hardware faults though certain codes can indicate hardware-related problems. For normal system maintenance, the audit outputs should be ignored when classifying and isolating faults.

**ACTION:** When audit outputs are excessive or continue to occur, the problem must be reported. Contact your technical support group.

### AUD423

AUDIT has detected an inconsistent DPNSS1 MWI table.

**ACTION:** The AUDIT programme resets the inconsistent information. Make a software correction.

### AUD623

Actual number of idle trunks in route is different than number in idle-trunk-counter in route block. Counter is corrected.

**ACTION:** If AUD0623 occurs frequently, contact your technical support group.

**AUD624**

Busy ISPC link not associated to any end-user.

**ACTION:** Use overlays 60 and 80 to detect if any inconsistent connections exist. If so, run AUDIT again. If the corruption still exists, then remove and reconfigure the corrupted TNs.

**AUD625**

ISPC data structures corruption.

**ACTION:** Use overlays 60 and 80 to detect if any consistent connections exist. If so, run AUDIT again. If the corruption still exists, then remove and reconfigure the corrupted TNs.

**AUD626**

IDLE ISPC link associated to an end-user.

**ACTION:** Use overlays 60 and 80 to detect if any consistent connections exist. If so, run AUDIT again. If the corruption still exists, then remove and reconfigure the corrupted TNs.

**AUD632**

AUDIT has restored the recoverable VDN blocks.

**ACTION:** VDN blocks which have been lost must be recreated in LD 79.

**AUD643**

Invalid SFR feature is found from SFR call register.

**ACTION:** Contact your technical support group.

**AUD644**

Invalid application VAS ID is found from an IAGT TN.

**ACTION:** Contact your technical support group.

**AUD645**

P\_IAGT\_BLK is not allocated for an IAGT TN> IAGT TN is deacquired.

**ACTION:** Contact your technical support group.

**AUD646**

IAGT\_TERMINAL is updated due to mismatch with IAGT TN.

**ACTION:** Contact your technical support group.

**AUD647**

IAGT TN (control login ACD agent) is not linked to IAGT link.

**ACTION:** Contact your technical support group.

**AUD648**

Audit VAS ID is invalid.

**ACTION:** Contact your technical support group.

**AUD649**

The last IAGT TN pointer of the IAGT link is not referenced to the last IAGT TN from the IAGT link.

**ACTION:** Contact your technical support group.

**AUD0650**

The TITH Call Register does not match the RAN Route data.

**ACTION:** Report the problem if the condition persists.

**AUD0651**

The TITH CR is lost.

**ACTION:** Report the problem if the condition persists.

**AUD0652**

RAN Broadcast Timeslice Call Register is not in the 128ms queue.

**ACTION:** Report the problem if the condition persists.

**AUD0653**

The TITH Call Register is not in the 2S queue.

**ACTION:** Report the problem if the condition persists.

**AUD0661**

Broadcast trunk list was found to be broken and was subsequently rebuilt.

**ACTION:** Report the problem if the condition persists.

**AUD0662**

Broadcast speechpath counts were found to mismatch and were subsequently realigned.

**ACTION:** Report the problem if the condition persists. 

## AUTH — LD 88 Authorization Code

Refer to the *maintenance input/output guide* for messages and descriptions.

Refer to ESN Northern Telecom Publications for details. 

# AUTH

**112** LD 88 Authorization Code

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## BERR — Bus Error Monitor

### How the BERR works

Bus Error Monitor is a resident program. BERR does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

These messages indicate errors with the various buses.

### BERR messages

#### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

#### BERR000 CP local slave BERR

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

#### BERR001 CP IPB master data error

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

#### BERR002 CP IPB master timeout

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR003 CP IPB master error**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR004 CP local decode error**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR005 CP illegal access**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR006 CP BIC default BERR <address>**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR007 CP BIC BERR: addr=a; BERRZ=b.**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR010 CP CMB triggered berr: addr = a**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR012 CP SRA DMA access berr: addr=a**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR016 CP SRA parity BERR <address>**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR017 CP BER Reason: NONE. addr=a**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR020 CP AP No response BERR <address>**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR021 CP AP BIC IPB parity <address>, <ERRZ>**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR022 CP AP local BERR <address>, <ERRZ>**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR023 CP AP BIC illegal access <address>, <ERRZ>**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR024 CP AP BIC default BERR <address>, <ERRZ>**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR200 SIMM: Write Protection Violation**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR201 SIMM x y : Parity error at addr=a (remote)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR202 SIMM x y : Parity error at addr=a (local)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR203 SIMM x y : Unrecoverable mem or reg WRITE error at addr=a (remote)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR204 SIMM x y : Unrecoverable mem or reg R/W error at addr=a (local)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR300 CNIP x y z: Address=a, BERZ=b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR400 CNIB x y: IPB data parity error (write)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide . If this message is not hardware related contact your technical support group.

**BERR401 CNIB x y: Local Master parity error (read)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide . If this message is not hardware related contact your technical support group.

**BERR402 CNIB x y: Local Master Time out**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR403 CNIB x y: Local Master bus error**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR404 CNIB x y: IPB Event Interrupt Read**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR405 CNIB x y: Local Priority Request Asserted**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR406 CNIB x y: Unaligned ID Eprom Access**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR407 CNIB x y: Unaligned Event Interrupt Access**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR408 CNIB x y: Addr=a, PARERRZ=b, IPBINT=c, BERRZ=d, ERRZ=e**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR500 HI EXC Self x: Restarting self due to Queue Corruption**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR501 HI EXC Self x: Retrying Bus Error Analysis**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR502 HI EXC Self x: TID: a, Action: b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR503 HI EXC Self x: Action a**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR504 HI EXC x: Task: a SUSPENDED**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR505 HI EXC x: Recovered from Bus error in ISR (Addr=a)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR506 HI EXC x: Starting Bus Error analysis of UNKNOWN (a) task.**

**Addr=a Note: state of this \*task\* cannot be changed**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR507 HI EXC x: Starting analysis of task a**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR508 HI EXC x: Completing analysis of task a. Decision: b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR509 HI EXC x: Bus error in ISR**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR510 HI EXC x: Bus error in task a. SR=b, PC=c, Addr=c, SSW=d**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR511 HI EXC x: Restart of Task a was averted. Unknown address b has been remapped. Number of remapped addresses: c. Total number of remaps: d**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR512 HI EXC x: Address remap threshold exceeded. Restart system**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR513 HI EXC x: Address remap has been reinitialized**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BER R514 HI EXC x: Recovered from Bus Error at Addr=a**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR515 HI EXC x: Analyzing task a. Recommendation: y**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR600 NCB x y: Check Device a at address b in Group c.**

**Check I/O device, network device, or PS card**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR601 NCB x y: No Response from 3PE on Group a. Check both connector ends of CNI-3PE cable (if applicable). No Response from 3PE on Group b. Check both connector ends of CNI-3PE cable (if applicable)**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

# BERR

**BERR700 EXCH: Threshold exceeded; vector=a, PC=b, fault addr=c**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR701 EXCH: Threshold exceeded; vector=a, PC=b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR702 EXCH: Total threshold exceeded; vector=a, PC=b,  
fault addr=c**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR703 EXCH: Total threshold exceeded; vector=a, PC=b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR704 EXCH x: a in ISR. SR=b, PC=c, Addr=d, SSW=e**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR705 EXCH x: a in Task b. SR=c, PC=d, Addr=e, SSW=f**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR800 IOP x y: IOP ERRZ reason register content: a**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR801 IOP x y: IOP BIC detected an IPB data parity error**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.



**BERR802 IOP x y: IOP BIC detected a local data parity error**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR803 IOP x y: Local IOP bus timer timed out**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR804 IOP x y: IOP BIC received a local bus error**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR805 IOP x y: IPB attempted an Event interrupt read**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR806 IOP x y: Local IOP bus asserted priority request during an inbound cycle**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR807 IOP x y: IPB attempted an unaligned IDProm access**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR808 IOP x y: IPB attempted an unaligned Event interrupt**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR809 IOP x y: IOP window is disabled**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

# BERR

**BERR810 IOP x y: Wrong IOP window size**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR811 IOP x y: Wrong IOP substitution addr: a, addr should be: b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR812 IOP x y: Wrong IOP IPB match addr: a, addr should be: b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group.

**BERR813 IOP x y: Wrong IOP Top of Card addr: a, addr should be: b**

**ACTION:** If this message identifies faulty hardware, replace it by following the steps in the *Hardware replacement* guide. If this message is not hardware related contact your technical support group. 

## BIC — Bus Interface Circuit

### How the BIC works

Bus Interface Circuit is a resident program. BIC does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

These messages are Test Failure messages for the Bus Interface Circuit (BIC) that provides the interfaces and protocols for the Inter-Processor Bus (IPB).

### BIC messages

#### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

#### **BIC000 x y: Register Read/Write/Verify test Failed**

**ACTION:** Contact your technical support group.

#### **BIC001 BIC/SRA interface IPBINT test failure**

**ACTION:** Contact your technical support group.

#### **BIC002 x y: BIC/SRA interface PARERR test failure**

**ACTION:** Contact your technical support group.

#### **BIC003 x y: Arbitration test failure**

**ACTION:** Contact your technical support group.

#### **BIC004 x y: IRQ test failure**

**ACTION:** Contact your technical support group.

**BIC005 x y: Timer test failure**

**ACTION:** Contact your technical support group.

**BIC006 x y: IOP Event interrupt test failure**

**ACTION:** Contact your technical support group.

**BIC007 x y: CP self event interrupt test failed**

**ACTION:** Contact your technical support group.

**BIC008 x y: Initial conditions failure**

**ACTION:** Contact your technical support group.

**BIC009 x y: Window Test failure**

**ACTION:** Contact your technical support group.

**BIC010 x y: Testing the ASIC**

**ACTION:** Contact your technical support group.

**BIC011 x y: Card failed one or more BIC Tests. Reseat or replace the failing card**

**ACTION:** Contact your technical support group. 

## BRI — LD 27 Basic Rate Interface

Refer to the *maintenance input/output guide* for messages and descriptions.

Refer to ISDN Northern Telecom Publications for details. 

# BRI

**126** LD 27 Basic Rate Interface

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of 1474

## BSD — LD 45 Background Signaling

### In this chapter

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Before changing circuit cards, be aware of the procedures outlined in the section titled *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter of this guide.

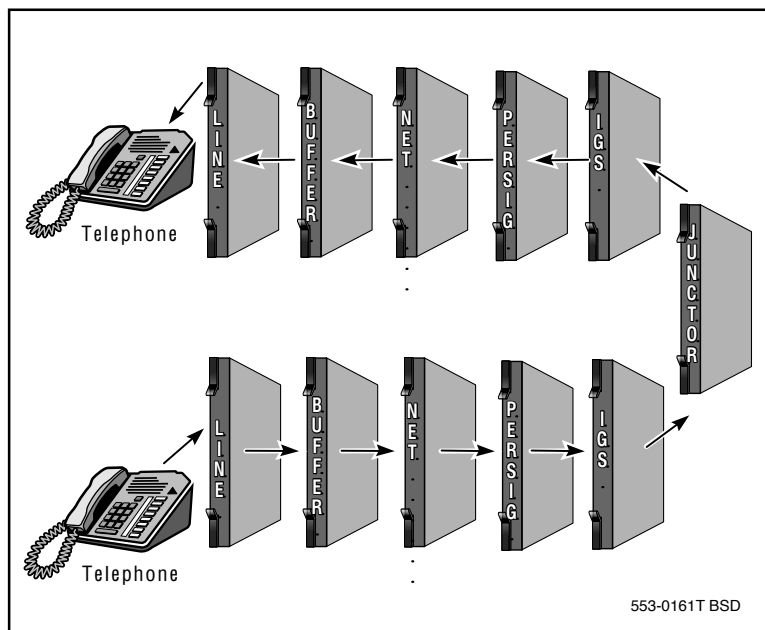
## How the BSD works

### Continuity tests

BSD performs continuity of speech path tests between the following:  
network loops

- ◆ buffers
- ◆ line cards
- ◆ digital telephones
- ◆ Intergroup Switch (IGS)
- ◆ Clock Controller (CC) or System Clock Generator (SCG)
- ◆ Peripheral Signaling (PS)
- ◆ Segmented Bus Extenders (SBE) or Bus Extenders
- ◆ 3 Port Extenders (3PE)
- ◆ extender cables





After replacing any of the above listed components due to a suspected fault, run the continuity test to confirm the faults have been cleared.

Use LD 30 to test superloops.

## Signaling test

The signaling test disables any digital telephone, terminal, console or card that fails. Passing a subsequent signaling test will automatically re-enable a failed device.

**Note:** For systems running Release 15 and later, signaling tests are performed in LD 30. Include LD 30 if LD 45 is run as a background or midnight routine. Including LD 30, improves fault isolation as LD 30 detects network memory faults before LD 45 runs continuity tests.

## Running LD 45 in the background mode

When run in the background, LD 45 performs the following on all enabled network loops:

- ◆ tests continuity of the speech path between each network card and its associated PE shelves
- ◆ tests continuity of the speech path between all network cards
- ◆ identifies non functioning paths between network cards

*Note:* When LD 45 is running in the background, only new faults are output.

## BSD message makeup

BSD output messages indicate test problems and fall into three categories.

- ◆ interactive messages reporting non-admissible user input
- ◆ Peripheral Equipment messages reporting PE condition
- ◆ Network messages reporting network shelf equipment conditions

The commands apply to both regular networks and superloops in the following table:

| BSD commands       |                                                                                                          |         |
|--------------------|----------------------------------------------------------------------------------------------------------|---------|
| Command            | Description                                                                                              | Release |
| LD 45 commands     |                                                                                                          |         |
| <b>NSIG</b>        | Perform the network memory and continuity tests (Release 14 and earlier)                                 | basic-1 |
| <b>TEST (loop)</b> | Perform a complete continuity test for one or all loops<br>Unplugged cards are not tested for continuity | basic-1 |
| <b>XINF</b>        | Display the tag numbers of all running and completed continuity tests                                    | xpe-15  |
| <b>XSTA x</b>      | Get the status of a manual continuity test with TAG = x                                                  | xpe-15  |
| <b>XSTP x</b>      | Stop a manual continuity test with TAG = x                                                               | xpe-15  |

## Manual Continuity Test

The Manual Continuity Test (MCT) allows you to isolate intermittent faulty points reported by the Background Continuity Test (BCT). For example, BCT reports faults between A, B, and C. Run the MCT between A and B, and then between B and C to determine how often the failure occurs.

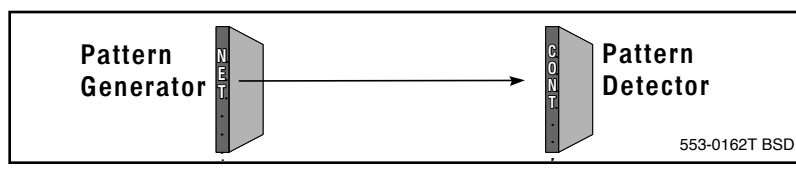
## Manual Extended Continuity (XCON) test commands

The XCON command is used to test various communication paths on or between the following:

- ◆ NT8D04 Network
- ◆ NT8D01 Controller
- ◆ Multi-purpose ISDN Signaling Processor (MISP)
- ◆ S/T-Interface Line (SILC)
- ◆ U-Interface Line (UILC) cards

Only one XCON test at a time can be run on a superloop.

## XCON Sub-prompts

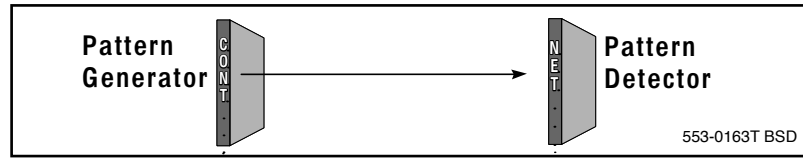


### TEST = 1 Network Card to Controller

Enter one of the XCON commands shown at the left. xpe-15

- XCON 0** Perform test once and print out results
- XCON H hhh** Repeat Extended Continuity test for hhh hours (hhh = 1-255)
- XCON M mmm** Repeat Extended Continuity test for mmm minutes (mmm = 1-255)
- XCON S sss** Repeat Extended Continuity test for sss seconds (sss = 1-255)
- This test uses the Network Card (NT8D04) as a pattern generator and the Controller (NT8D01) as the detector.

| Prompt      | Response | Description                              |
|-------------|----------|------------------------------------------|
| <b>TEST</b> | 1        | Network Card to Controller               |
| <b>PATT</b> | x        | pattern (x = 0-7)                        |
| <b>TYPG</b> | N        | Network Card is generator                |
| <b>SUPL</b> | loop     | 0-156 in multiples of four               |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127      |
| <b>TYPD</b> | P        | Controller is detector                   |
| <b>TN</b>   | l s c u  | valid TN on the Controller               |
| <b>TAG</b>  | x        | tag number (1-15) assigned by the system |



### TEST = 2 Controller to Network Card

Enter one of the XCON commands shown at the left. xpe-15

**XCON 0** Perform test once and print out results

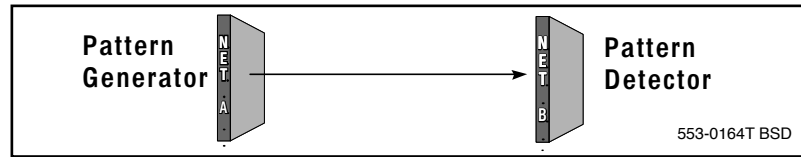
**XCON H hhh** Repeat Extended Continuity test for hhh hours  
(hhh = 1-255)

**XCON M mmm** Repeat Extended Continuity test for mmm minutes  
(mmm = 1-255)

**XCON S sss** Repeat Extended Continuity test for sss seconds  
(sss = 1-255)

This test uses the Controller (NT8D01) as a pattern generator and the Network Card (NT8D04) as the detector.

| Prompt      | Response | Description                              |
|-------------|----------|------------------------------------------|
| <b>TEST</b> | 2        | Controller to Network Card               |
| <b>PATT</b> | x        | pattern (0-7)                            |
| <b>TYPG</b> | P        | Controller is generator                  |
| <b>TN</b>   | l s c u  | valid TN on the Controller               |
| <b>TYPD</b> | N        | Network Card is detector                 |
| <b>SUPL</b> | loop     | 0-156 in multiples of four               |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127      |
| <b>TAG</b>  | x        | tag number (1-15) assigned by the system |



**TEST = 3 Network Card to different Network Card**

Enter one of the XCON commands shown at the left. xpe-15

**XCON 0** Perform test once and print out results

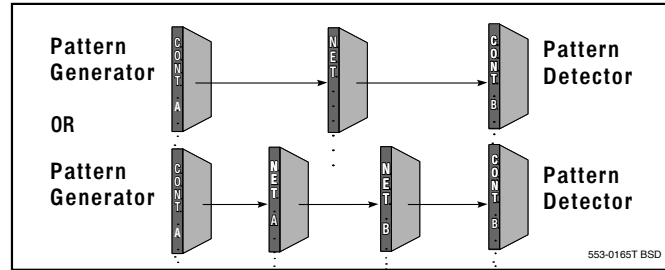
**XCON H hhh** Repeat Extended Continuity test for hhh hours  
(hhh = 1-255)

**XCON M mmm** Repeat Extended Continuity test for mmm minutes  
(mmm = 1-255)

**XCON S sss** Repeat Extended Continuity test for sss seconds  
(sss = 1-255)

This test uses the Network Card (NT8D04) as a pattern generator and another Network Card as the detector.

| Prompt      | Response | Description                            |
|-------------|----------|----------------------------------------|
| <b>TEST</b> | 3        | Network Card to different Network Card |
| <b>PATT</b> | x        | pattern (0-7)                          |
| <b>TYPG</b> | N        | Network Card is generator              |
| <b>SUPL</b> | loop     | 0-156 in multiples of four             |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127    |
| <b>TYPD</b> | N        | Network Card is detector               |
| <b>SUPL</b> | loop     | 0-156 in multiples of four             |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127    |



### TEST = 4 Controller to different Controller

Enter one of the XCON commands shown at the left.

xpe-15

**XCON 0** Perform test once and output results

**XCON H hhh** Repeat Extended Continuity test for hhh hours  
(hhh = 1-255)

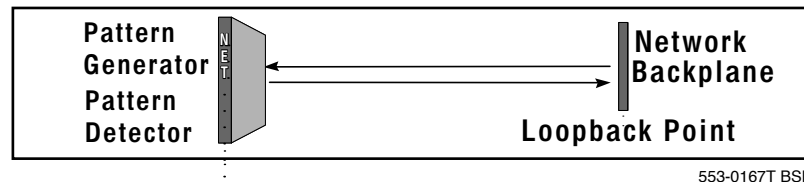
**XCON M mmm** Repeat Extended Continuity test for mmm minutes  
(mmm = 1-255)

**XCON S sss** Repeat Extended Continuity test for sss seconds  
(sss = 1-255)

This test uses a Controller (NT8D01) as a pattern generator and another Controller as a detector. The pattern is sent through one or two Network Cards (NT8D04).

| Prompt       | Response | Description                                                   |
|--------------|----------|---------------------------------------------------------------|
| <b>TEST</b>  | 4        | Network Card to Controller                                    |
| <b>PATT</b>  | x        | pattern (0-7)                                                 |
| <b>TYPG</b>  | P        | Controller is generator                                       |
| <b>TN</b>    | l s c u  | valid TN on the Controller                                    |
| <b>TYPD</b>  | P        | Controller is detector                                        |
| <b>TN</b>    | l s c u  | valid TN on the Controller                                    |
| <b>GSLT</b>  | xxx      | timeslot 2-31, 34-63, 66-95, 98-127 on generator Network Card |
| <b>DSL T</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127 on detector Network card  |
| <b>JUNC</b>  | x        | junctur if Network cards in different groups                  |
| <b>TAG</b>   | x        | tag number (1-15) assigned by the system                      |

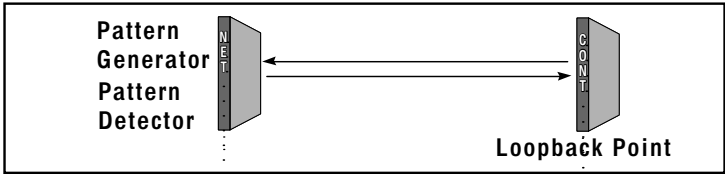




**TEST = 5 Network Card to Network Card (loopback at backplane)**

- Enter one of the XCON commands shown at the left. xpe-15
- XCON 0** Perform test once and print out results
- XCON H hhh** Repeat Extended Continuity test for hhh hours  
(hhh = 1-255)
- XCON M mmm** Repeat Extended Continuity test for mmm minutes  
(mmm = 1-255)
- XCON S sss** Repeat Extended Continuity test for sss seconds  
(sss = 1-255)
- This test uses the Network Card (NT8D04) as a pattern generator and detector. The pattern is sent to the network backplane and back.

| Prompt      | Response | Description                                           |
|-------------|----------|-------------------------------------------------------|
| <b>TEST</b> | 5        | Network Card to Network Card (loop back at backplane) |
| <b>PATT</b> | x        | pattern (0-7)                                         |
| <b>TYPG</b> | N        | Network Card is generator                             |
| <b>SUPL</b> | loop     | 0-156 in multiples of four                            |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127                   |
| <b>TYPD</b> | N        | Network Card is detector                              |
| <b>SUPL</b> | loop     | 0-156 in multiples of four                            |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127                   |
| <b>LBTY</b> | N        | through network backplane                             |
| <b>TAG</b>  | x        | tag number (1-15) assigned by the system              |



553-0168T BSD

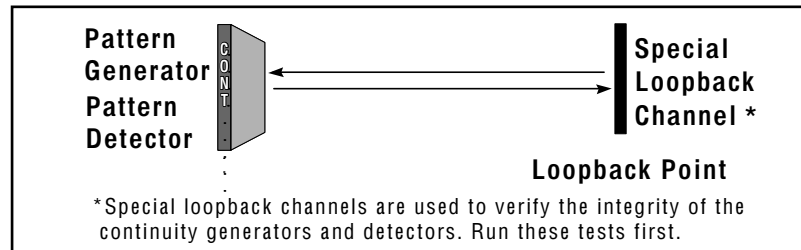
**TEST = 6 Network Card to Network Card (loopback through Controller)**

Enter one of the XCON commands shown at the left. xpe-15

- XCON 0** Perform test once and print out results
- XCON H hhh** Repeat Extended Continuity test for hhh hours (hhh = 1-255)
- XCON M mmm** Repeat Extended Continuity test for mmm minutes (mmm = 1-255)
- XCON S sss** Repeat Extended Continuity test for sss seconds (sss = 1-255)

This test uses the Network Card (NT8D04) as a pattern generator and detector.

| Prompt      | Response | Description                                                 |
|-------------|----------|-------------------------------------------------------------|
| <b>TEST</b> | 6        | Network Card to Network Card (loop back through Controller) |
| <b>PATT</b> | x        | pattern (0-7)                                               |
| <b>TYPG</b> | N        | Network Card is generator                                   |
| <b>SUPL</b> | loop     | 0-156 in multiples of four                                  |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127                         |
| <b>TYPD</b> | N        | Network Card is detector                                    |
|             |          | 0-156 in multiples of four                                  |
| <b>SLOT</b> | xxx      | timeslot 2-31, 34-63, 66-95, 98-127                         |
| <b>LBTY</b> | P        | through Controller                                          |
| <b>LBTN</b> | l s 99 0 | valid TN on the Controller                                  |
| <b>TAG</b>  | x        | tag number (1-15) assigned by the system                    |



553-0169T BSD

**TEST = 7 Controller to Controller (special loopback channel)**

Enter one of the XCON commands shown at the left. xpe-15

**XCON 0** Perform test once and print out results

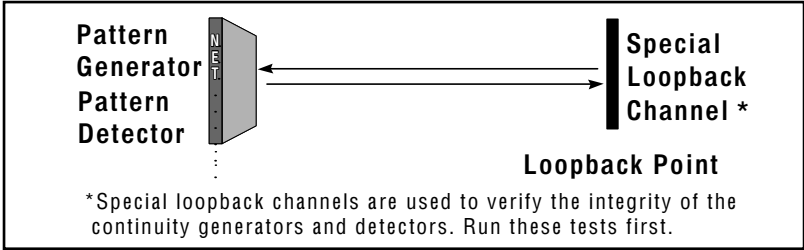
**XCON H hhh** Repeat Extended Continuity test for hhh hours  
(hhh = 1-255)

**XCON M mmm** Repeat Extended Continuity test for mmm minutes  
(mmm = 1-255)

**XCON S sss** Repeat Extended Continuity test for sss seconds  
(sss = 1-255)

This test uses the Controller (NT8D01) as a pattern generator and detector. The pattern is looped back through a special loop back channel.

| Prompt      | Response | Description                                          |
|-------------|----------|------------------------------------------------------|
| <b>TEST</b> | 7        | Controller to Controller (special loop back channel) |
| <b>PATT</b> | x        | pattern (0-7)                                        |
| <b>TYPG</b> | N        | Controller is generator                              |
| <b>TN</b>   | 1 s 99 0 | special Controller loop back channel                 |
| <b>TAG</b>  | x        | tag number (1-15) assigned by the system             |



553-0170T BSD

**TEST = 8 Network Card to Network Card (special loopback channel)**

- Enter one of the XCON commands shown at the left. xpe-15
- XCON 0** Perform test once and print out results
- XCON H hhh** Repeat Extended Continuity test for hhh hours  
(hhh = 1-255)
- XCON M mmm** Repeat Extended Continuity test for mmm minutes  
(mmm = 1-255)
- XCON S sss** Repeat Extended Continuity test for sss seconds  
(sss = 1-255)
- This test uses the Network Card (NT8D04) as a pattern generator and detector. The pattern is looped back through a special channel which is specified by timeslot 128.

| Prompt      | Response | Description                                              |
|-------------|----------|----------------------------------------------------------|
| <b>TEST</b> | 8        | Network Card to Network Card (special loop back channel) |
| <b>PATT</b> | x        | pattern (0-7)                                            |
| <b>TYPG</b> | N        | Network Card is generator                                |
| <b>SUPL</b> | loop     | 0-156 in multiples of four                               |
| <b>SLOT</b> | 128      | special Network loop back channel                        |
| <b>TAG</b>  | x        | tag number (1-15) assigned by the system                 |

**TEST = 9 Loop back test on Digital Subscriber Loop**

|                                                                                                                                                                                                   |                                                                  |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------|
|                                                                                                                                                                                                   | Enter one of the XCON commands shown at the left.                | xpe-15 |
| <b>XCON 0</b>                                                                                                                                                                                     | Perform test once and print out results                          |        |
| <b>XCON H hhh</b>                                                                                                                                                                                 | Repeat Extended Continuity test for hhh hours<br>(hhh = 1-255)   |        |
| <b>XCON M mmm</b>                                                                                                                                                                                 | Repeat Extended Continuity test for mmm minutes<br>(mmm = 1-255) |        |
| <b>XCON S sss</b>                                                                                                                                                                                 | Repeat Extended Continuity test for sss seconds<br>(sss = 1-255) |        |
| This test uses the MISP as a pattern generator and detector. The pattern goes through the Network and Controller Card and is looped back at a single DSL. Both B- and D-channels are looped back. |                                                                  |        |

| Prompt      | Response | Description                               |
|-------------|----------|-------------------------------------------|
| <b>TEST</b> | 9        | Loop back test on Digital Subscriber Loop |
| <b>PATT</b> | x        | pattern (0-7)                             |
| <b>TYPG</b> | N        | Network Card is generator                 |
| <b>SUPL</b> | loop     | 0-156 in multiples of four                |
| <b>SLOT</b> | 128      | special Network loop back channel         |
| <b>LBTY</b> | 3        | DSL is requested for loop back            |
| <b>LBTN</b> | l s c u  | address of DSL                            |
| <b>TAG</b>  | x        | tag number (1-15) assigned by the system  |

## TEST = 10 Loop back test on BRI line card

|                                                                                                                                                                                                                                       |                                                                  |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------|
|                                                                                                                                                                                                                                       | Enter one of the XCON commands shown at the left.                | xpe-15 |
| <b>XCON 0</b>                                                                                                                                                                                                                         | Perform test once and print out results                          |        |
| <b>XCON H hhh</b>                                                                                                                                                                                                                     | Repeat Extended Continuity test for hhh hours<br>(hhh = 1-255)   |        |
| <b>XCON M mmm</b>                                                                                                                                                                                                                     | Repeat Extended Continuity test for mmm minutes<br>(mmm = 1-255) |        |
| <b>XCON S sss</b>                                                                                                                                                                                                                     | Repeat Extended Continuity test for sss seconds<br>(sss = 1-255) |        |
| This test uses the MISP as a pattern generator and detector. The pattern goes through the Network and Controller Card and is looped back at the line card level (for example, bus loop back). Both B- and D-channels are looped back. |                                                                  |        |

| Prompt      | Response | Description                            |
|-------------|----------|----------------------------------------|
| <b>TEST</b> | 1 0      | Loop back test on BRI line card        |
| <b>PATT</b> | x        | pattern (0-7)                          |
| <b>TYPG</b> | 5        | MISP is generator                      |
| <b>SUPL</b> | loop     | 0-156 in multiples of four             |
| <b>SLOT</b> | 1 2 8    | special Network loop back channel      |
| <b>LBTY</b> | 4        | loop back at line card                 |
| <b>LBTN</b> | 1 s c d  | address of DSL                         |
| <b>TAG</b>  | x        | g number (1-15) assigned by the system |

### Using the BSD message table to clear faults

To clear faults detected by the Background and Signaling Diagnostic, use the overlay loads located outside this chapter. To solve database programing errors, the action column in the BSD Message table in this chapter refers you to overlay loads in the *administration input/output guide*. For hardware faults, the action column refers you to diagnostic overlays found in this guide.

## BSD messages

### BSD000

The BSD program is loaded and ready for you to enter commands.

**ACTION:** Enter a command.

### BSD001

Invalid command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### BSD002

An attempt was made to enter a command while a previous TEST command was still being executed. The new command is ignored.

**ACTION:** Information only, no action required.

### BSD020 c

During execution of a TEST command, the program detected an input buffer overflow of Peripheral Signaling (PS) card **c**, for instance some incoming signaling messages were lost. The signaling test was terminated.

**ACTION:** Retry TEST command. This message does not indicate a fault.

### BSD021 c

During a requested test of Peripheral Signaling (PS) card **c**, a large number of SL-1 line faults were detected, but the program did not have sufficient memory space available to it to record all these faults. Test of card **c** was terminated. This message does not necessarily imply a PS card fault. Refer to the *CED* chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

**ACTION:** Retry the TEST command. If the same message appears, use STAT PER in LD 32 to get the status of the PS card(s). Enable any disabled PS card(s) and run TEST in LD 45 to verify that the fault is cleared. If the PS card(s) does not enable and the fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

## BSD022

During execution of a TEST command, the continuity test procedure encountered an “all channels busy” condition. One or more of the continuity tests were not performed.

**ACTION:** Re-enter the TEST command later. This message does not indicate a visit.

## BSD023 loop

During execution of a TEST command, a message request generating/detecting patterns is not able to be sent to the NT8D04 network card **loop**.

**ACTION:** Re-enter the command.

## BSD024 loop

During execution of a TEST command, cannot query the continuity test result of the NT8D04 network card **loop**.

**ACTION:** Re-enter the command.

## BSD080 c: s1 s2 sn

The program has switched to CPU **c**; when this CPU is active. IGS card(s) **s1**, **s2**, etc. either do not respond or fail the memory test.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. Compare lists of IGS cards with the corresponding list for the following BSD080 and BSD082 message. If the same IGS appears in both, the fault is likely on the IGS card indicated in the message.

**ACTION:** Use STAT IGS x in LD 39 to get the status of the IGS card(s). Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card(s) does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.



**2.** If an IGS designation appears in this BSD080 message only, or if there is no BSD082 message, the fault can be on the CE EXT connecting CPU c to the Network Shelf. The CPU could not access the IGS because the extenders between them are faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card or 3 Port Extender card. Use ENL EXT x in LD 35 to enable any disabled extenders and run TEST in LD 45 to verify that the fault is cleared. If the extender card does not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

### **BSD081 c: loop1 loop2 loop n**

The program has switched to CPU c: when this CPU is active, Network **loop1**, **loop2**, etc. either do not respond or fail the memory test.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** Compare the list of network **loops** with the corresponding list for a BSD083 message. If the same network loop appears in both BSD081 and BSD083, then the network card for the indicated loop can be faulty.

**ACTION:** Use STAT l in LD 32 to get the status of the loops. Use ENLL l in LD 32 to enable the loops and run TEST in LD 45 to verify that the fault is cleared. If that loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** If no network card on a particular network shelf responds, suspect a or b or c as follows:

**a)** The IGS card, as indicated in the message, can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by

following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**b)** The cable, connecting the IGS card to the junctor, as indicated in the message, can be faulty.

**ACTION:** Replace the cable between the IGS card and the junctor by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**c)** The Peripheral Signaling card for the shelf indicated in the message, can be faulty. Refer to the *CED* chapter in this guide, to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS cards. Use ENPS x in LD 32 to enable PS and run TEST in LD 45 to verify that the fault is cleared. If PS card does not enable and fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

**3.** If Clock Controller 0 is active to shelf 0 suspect a or b as follows.

**a)** The Clock Controller cable can be faulty.

**ACTION:** Replace the cable between the SCC card and the junctor by following steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**b)** The cable between the network card and the Peripheral Buffer card, can be faulty.

**ACTION:** Replace the cable between PB card and Network card by following steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**4.** If a network loop message appears in BSD081 only, or if no BSD083 message follows, the probable fault is on CE EXT connecting the CPU *c* to the Network Shelf.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and the 3 Port Extender card. Use ENL EXT *x* in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

#### **BSD082 c: s1 s2 sn**

The program has switched CPUs and CPU *c* has become the nonactive CPU. When CPU *N* was active prior to the switch, IGS cards *s1*, *s2* etc. either did not respond or failed the memory test.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** Compare the list of IGS card with the corresponding list for the preceding BSD080 message. If the same IGS card appears in both lists, the fault can be on the IGS card.

**ACTION:** Use STAT IGS *x* in LD 39 to get the status of the IGS card(s). Use ENL IGS *x* in LD 39 to enable any disabled IGS card(s) and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**2.** If an IGS card appears in the message list for BSD082 only, or if no BSD080 message is present, suspect a or b as follows:

**a)** Any CE EXT connecting the network shelf on which the indicated network card is located, to the nonactive CPU.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and the 3 Port Extender card. Use ENL EXT *x* in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the

steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**b)** The cable, connecting the CE EXT to the network shelf on which the indicated network card is located, can be faulty.

**ACTION:** Replace the cable between the two extenders. Use ENL EXT x in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

## **BSD083 c: loop1, loop2, loopn**

The program has switched CPUs and CPU **c** is now the nonactive CPU. When CPU **c** was active prior to the switch, network **loop1**, **loop2**, etc. either did not respond or failed the memory test.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** Compare the list of network **loops** with the corresponding list for following the BSD083 message. If the same network card appears in both lists, then the network card for the indicated loop can be faulty.

**ACTION:** Use STAT l in LD 32 to get the status of the loops. Use ENLL l in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** If no network card on a particular network shelf responds, the fault can be a or b or c as follows:

**a)** The IGS on the network shelf can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of the IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards, and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s)

by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

*b)* The cable connecting the IGS to the network group, can be faulty.

**ACTION:** Replace the cable between the IGS card and the junctor by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

*c)* The Peripheral Signaling card for the shelf, can be faulty. Refer to the CED chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS card. Use ENPS x in LD 32 to enable the PS and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

3. If System Clock Controller 0 is active to shelf 0 the fault can be a or b or c as follows:

*a)* The SCC to the junctor board cable can be faulty.

**ACTION:** Replace the cable between the SCC card and the junctor by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

*b)* The cable between the network card and the Peripheral Buffer card, can be faulty.

**ACTION:** Replace the cable between the PB card and the Network card, by following steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

*c)* The cable between the Peripheral Buffer cards, can be faulty.

**ACTION:** Replace the cable between the PB cards by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses, refer to the *NPR* chapter in this guide.

**4.** If a network card appears in the message list for BSD083 only, or if there is no BSD081 message preceding, the probable fault can be a or b or c as follows.

*a)* Any CE EXT connecting the network shelf to the nonactive CPU, on which the indicated network card is located, can be faulty.

**ACTION:** Check for BSD081 message. Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and 3 Port Extender card. Use ENL EXT x in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

*b)* The cable connecting the CE EXT to the network shelf on which the indicated network card is located, can be faulty.

**ACTION:** Replace the cable between the two extenders. Use ENL EXT x in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

## **BSD085**

A possible CMA card fault.

**ACTION:** Use STAT CMA x in LD 35 to get the status of the CMA cards. Use ENL CMA x in LD 35 to enable CMA and run TEST in LD 45 to verify that the fault is cleared. If the CMA card does not enable and the fault does not clear, replace the CMA card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**BSD086 c**

A possible CMA card fault.

**ACTION:** Use STAT CMA x in LD 35 to get the status of the CMA cards. Use ENL CMA x in LD 35 to enable CMA and run TEST in LD 45 to verify that the fault is cleared. If the CMA card does not enable and the fault does not clear, replace the CMA card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**BSD090**

The program has detected a power fault indication.

**ACTION:** Check the QPC84 power monitor LED indicators. If you need help, refer to the *PWR* chapter in this guide.

**BSD101 p: loop1, loop2, loopn**

The **loop1, loop2**, etc. on the same Peripheral Signaling card **p**, all fail the signaling test. Error code BSD201 is implied for these loops. Refer to the *CED* chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** The probable fault is the PS card, which is located on the same shelves as **loop1, loop2**, etc.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS cards. Use ENPS x in LD 32 to enable PS and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

**2.** If the fault persists after the PS card is replaced, suspect a or b or c as follows.

**a)** The Miscellaneous Register card or IF card on the active CPU, can be faulty. Refer to the *CED* chapter to locate the Miscellaneous Register circuitry that can be combined with other circuitry on one card.

**ACTION:** Indiscriminate use of the following test command, especially during heavy telephone traffic periods, can cause the system to reload. Use TCPU in LD 35 to test the idle MISC circuitry or IF card. If the MISC circuitry or the IF card does not pass the test or the fault does not clear, replace it by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**b)** The IGS cards located on the same shelves as **loop1**, **loop2**, etc., can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**c)** The network cards of **loop1**, **loop2**, etc., can be faulty.

**ACTION:** Use STAT l in LD 32 to get the status of the loops. Use ENLL l in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**d)** The CE EXT connecting the active CPU to the affected PS card, can be faulty.

**ACTION:** Check and replace the Segmented Bus Extender card or the 3 Port Extender card by following the steps in the *Hardware replacement* guide. If this fails check the cable between the two extenders associated with the standby CPU and the network shelf, where the IGS card indicated in the message is located. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.



e) Other network, conference or tone and digit switch (TDS) cards on the same shelf, can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the network loops. STAT L of LD 34 for TDS loops and STAT L of LD 38 for conference loops. Use ENLL 1 in LD 32 to enable network loops, ENLL L of LD 34 for TDS loops, and ENLL L of LD 38 for conference loops. Run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the following chapters:

- ◆ the *NPR* chapter for network assistance
- ◆ the *TDS* chapter for tone and digit switch assistance
- ◆ the *CFN* chapter for conference assistance

### **BSD103 p**

A fault is detected on outgoing signaling on peripheral signaling card **p**. Issue the TEST command several times. If this code reappears, PS card **p** is probably faulty. Refer to the *CED* chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** If the fault persists after the PS card is replaced as follows, then suspect a.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS cards. Use ENPS x in LD 32 to enable the PS card and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

*a)* The Miscellaneous Register card or IF card on the active CPU, can be faulty. Refer to the *CED* chapter to locate Miscellaneous Register circuitry that can be combined with other circuitry on one card.

**ACTION:** Indiscriminate use of the following test command, especially during heavy telephone traffic periods, can cause the system to reload. Use TCPUR in LD 35 to test the idle MISC circuitry or IF card. If the MISC circuitry or the IF card does not pass the test or the fault does not clear, replace it by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**2.** If the fault indication appears when one CPU is active but not when the other is active and the fault affects only one group, the probable fault is either *a* or *b* or *c*.

*a)* The CE EXT connecting the affected group to the CPU which is active when the fault indication appears, can be faulty.

**ACTION:** Check and replace the Segmented Bus Extender card or the 3 Port Extender card by following the steps in the *Hardware replacement* guide. If this fails, check the cable between the two extenders associated with the standby CPU and the network shelf where the IGS card indicated in the message is located. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

*b)* The cable between the extenders or other CE EXT, can be faulty.

**ACTION:** Replace the cable between the two extenders. Use ENL EXT *x* in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

*c)* Other PS card(s) can be faulty.

**ACTION:** Use STAT PER in LD 32 to get the status of the PS cards. Enable any disabled PS card(s) and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear replace the PS card(s) by following the steps in the

*Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

### **BSD110 loop1, loop2, loopn**

The **loop1**, **loop2**, etc. are unable to transmit speech to any loop on the other network shelf of that group.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** If there is only one terminal loop on the other shelf, the associated network card can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** If only one loop, for instance, **loop1** appears in the list, there can be a possible intermittent fault in the network for loop **loop1**.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**3.** If only one loop, for instance, **loop1** appears in the list, there is the possibility of an intermittent fault in one of the Peripheral Buffers or Controllers connected to **loop1**. Replacement of these cards should be attempted starting with the one on the highest numbered PE shelf of the loop.

**a)** One of the Peripheral Buffers or Controllers can be faulty.

**ACTION:** Use STAT 1s in LD 32 to get the status of the Peripheral Buffer or Controller on loop1. Enable any disabled PB card. Run TEST in LD 45 to verify that the fault is cleared on the PB. Enable any

disabled PB card. Use LD 32 XPCT x to test the controller card, or un-seat and re-seat the controller card to run a self-test to verify that the fault is cleared. Refer to the *NPR* chapter for test results as shown on the controller faceplate display.

**4. Cables a or b can be faulty.**

**a)** The cable between the network card and the Peripheral Buffer, can be faulty.

**ACTION:** Replace the cable between the PB card and Network card following steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**b)** The cable between the Controller and the Superloop can be faulty.

**ACTION:** Replace the cable between the Controller backplane and the Superloop by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses, refer to the *NPR* chapter in this guide.

**5. The network card of loop1, loop2, for example, can be faulty.**

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**6. The CE extenders cards can be faulty.**

**ACTION:** Check and replace the Segmented Bus Extender card or the 3 Port Extender card by following the steps in the *Hardware replacement* guide; or the cable between the two extenders associated with the standby CPU and the network shelf, where the IGS card indicated in the message is located. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

7. The PS cards can be faulty. Refer to the *CED* chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS cards. Use ENPS x in LD 32 to enable PS and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

8. The CFN cards can be faulty.

**ACTION:** Use STAT L in LD 34 to get the status of the conference loops. Use ENLL 1 in LD 34 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CFN* chapter in this guide.

9. The TDS cards can be faulty.

**ACTION:** Use STAT L in LD 38 to get the status of the TDS loops. Use ENLL 1 in LD 38 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS* chapter in this guide.

10. The IGS cards can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of the IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

11. The CPU cards can be faulty.

**ACTION:** Indiscriminate use of the TCPUR command, especially during heavy telephone traffic periods, can cause the system to reload.

Use TCPU in LD 35 to test the idle MISC circuitry or IF card. If the MISC circuitry or the IF card does not pass the test, or the fault does not clear, replace it by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

## **BSD111 g: loop1, loop2, loopn**

The **loop1, loop2**, for example of group **g** could not transmit to any other group. The probable fault is on the IGS cards in group **g**.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

## **BSD121 g: j1 j2 jn**

Junctors **j1, j2**, etc. could be received by only one of the two network shelves of group **g**. The probable fault is in the cables between the Junctor board and the Intergroup Switch.

**ACTION:** Replace the cable between the IGS card and the junctor by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

## **BSD130 s g j: loop1, loop2, loopn**

The **loop1, loop2**, etc. could not be transmitted to group **g** through junctor **j** of IGS cards.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** The IGS card **s** can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of the IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s)

by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

2. It is possible that an intermittent fault exists on group **g**, particularly if this message appears from time to time specifying different loops from one appearance of the message to the next. Probable fault is cable from IGS **s** to Junctor or IGS in the same position on group **g**.

**ACTION:** Replace the cable between the IGS card and the junctor by following steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If the fault is not cleared, use step 1 above to clear the IGS card fault. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

#### **BSD201 loop: s1 s2 sn**

Two or more shelves **s1**, **s2** for example, on the same **loop** fail the signaling test. Error code BSD301 is implied for these shelves.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. If **loop** is an RPE loop this can be faulty.

**ACTION:** Refer to the input/output guide. Use LD 33 and RPE NTP to test RPE loop.

2. The network card for **loop** can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable the loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

3. The **loop** cable to the PE shelves can be faulty.

**ACTION:** Replace the cable between the PB card and the Network card by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

4. The PS card associated with **loop** can be faulty. Refer to the *CED* chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS cards. Use ENPS x in LD 32 to enable the PS card and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

5. The Peripheral Buffer on shelf s of **loop** can be faulty.

**ACTION:** Use STAT l s in LD 32 to get the status of the PB card(s). Use ENLL l s in LD 32 to enable PB card(s) and run TEST in LD 45 to verify that the fault is cleared. If the PB card does not enable and the fault does not clear, replace the PB card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

a) One or more of the cards on shelves s1 s2 etc., can be faulty.

**ACTION:** Use STAT l s c in LD 32 to get the status of the PE cards. Use ENLL l s c in LD 32 to enable cards and run TEST in LD 45 to verify that the fault is cleared. If the cards do not enable and the fault does not clear, replace the PE card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

6. The CE EXT connecting affected **loop** with active CPU can be faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and the 3 Port Extender card. Use ENL EXT x in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.



7. The IGS cards in the same group can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS card(s) and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

8. All other network and conference loops can be faulty.

**ACTION:** Use STAT l in LD 32 to get the status of the network loops, STAT L of LD 34 for TDS loops and STAT L of LD 38 for conference loops. Use ENLL l in LD 32 to enable the network loops, ENLL L of LD 34 for TDS loops and ENLL L of LD 38 for conference loops. Run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter for network help or the *TDS* chapter for tone and digit switch help, or the *CFN* chapter for conference help.

9. The TDS message cards can be faulty.

**ACTION:** Use STAT L in LD 38 to get the status of the TDS loops. Use ENLL l in LD 38 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS* chapter in this guide.

#### BSD202 loop: s1 s2 sn

Continuity test failed from network **loop** to shelves indicated by **s1** and **s2**, for example. If the **loop** is an RPE loop, using Overlay 33 can aid in fault location.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** The Peripheral Buffer card(s) on shelves **s1, s2** etc. can be faulty. Use STAT 1 in LD 32 s to get the status of the PB card(s).

**ACTION:** Use ENLL 1 in LD 32 s to enable PB card(s) and run TEST in LD 45 to verify that the fault is cleared. If the PB card does not enable and the fault does not clear, replace the PB card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** The interconnecting cable to PE shelves **s1, s2** etc. can be faulty.

**ACTION:** Replace the cable between the PB cards by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**3.** The network card **loop** can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**4.** The IGS cards in the same group as the **loop** can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**5.** The CE EXT connecting the **loop** to the CPU can be faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and 3 Port Extender card. Use ENL EXT x in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following

the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**6.** The PS cards servicing the **loop** can be faulty. Refer to the *CED* chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS cards. Use ENPS x in LD 32 to enable the PS card and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

**7.** The CFN card **loop** can be faulty.

**ACTION:** Use STAT L in LD 34 to get the status of the conference loops. Use ENLL 1 in LD 34 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CFN* chapter in this guide.

**8.** The TDS card **loop** can be faulty.

**ACTION:** Use STAT L in LD 38 to get the status of the TDS loops. Use ENLL 1 in LD 38 to enable the loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS* chapter in this guide.

**9.** For superloops the continuity test failed from network card **loop** to Peripheral Controllers **s1** and **s2**. A fault can exist in a, b or c as follows.

**a)** The Peripheral Controller can be faulty.

**ACTION:** Use XPCT x in LD 32 to test the Controller. If the Controller does not pass the test, replace it by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

*b)* The cables to the Peripheral Controller can be faulty.

**ACTION:** Replace the cable between the Peripheral Controller shelf backplane and the Superloop Network card by following the steps in the *Installation Guide*. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

*c)* The NT8D04 superloop Network card can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the superloop. Use XNTT 1 in LD 32 to test the superloop. If the superloop does not pass the test, replace it by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

### BSD203 loop: n

Memory test of **loop** failed, **n** speech channels on this loop are now disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support staff.

**1.** The network card **loop** can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** The IGS cards in the same group as the **loop** can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

3. The CE EXT connecting the CPU to the network **loop** shelf can be faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and 3 Port Extender card. Use ENL EXT x in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

4. The PS card servicing the **loop** can be faulty. Refer to the *CED* chapter to locate Peripheral Signaling circuitry that can be combined with other circuitry on one card.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of the PS cards. Use ENPS x in LD 32 to enable the PS and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

5. All other network, conference and TDS cards in the same group as the **loop** can be faulty.

**ACTION:** Use STAT l in LD 32 to get the status of the network loops, STAT L of LD 34 for TDS loops and STAT L of LD 38 for conference loops. Use ENLL l in LD 32 to enable network loops, ENLL L of LD 34 for TDS loops, and ENLL L of LD 38 for conference loops. Run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need assistance with the commands or system responses refer to the following chapters for help:

- ◆ the *NPR* chapter for network assistance
- ◆ the *TDS* chapter for tone and digit switch assistance
- ◆ the *CFN* chapter for conference assistance

## BSD205 loop

Continuity checker on the **loop** indicates a faulty network.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

## BSD206 loop: loop1 loop2 loopn

**Loop** unable to receive speech from **loop1**, or **loop2**, for example.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The network card for the **loop** can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

2. If only one loop, for instance, **loop1** cannot be received, possible intermittent fault in network card for loop **loop1** (particularly if any other loops cannot receive **loop1** or if **loop1** appears in a BSD110 message).

**ACTION:** Use same procedure as number one above.

3. If only one loop, for instance, **loop1** cannot be received, there can be a possible intermittent fault in one of the Peripheral Buffers connected to **loop1**. Each Peripheral Buffer should be replaced in turn, starting with the one on the highest numbered PE shelf. The test should then be allowed to run for sufficient time to indicate whether the problem persists.

**ACTION:** Use STAT 1 s in LD 32 to get the status of the PB card(s). Use ENLL 1 s in LD 32 to enable the PB card(s) and run TEST in LD 45 to verify that the fault is cleared. If the PB card does not enable and the fault does not clear, replace the PB card(s) by following the

steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

4. All other network, conference and TDS cards in the same group as the **loop** can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the network loops, STAT 1 of LD 34 for TDS loops and STAT 1 of LD 38 for conference loops. Use ENLL 1 in LD 32 to enable network loops, ENLL 1 of LD 34 for TDS loops and ENLL L of LD 38 for conference loops. Run TEST in LD 45 to verify that the fault is cleared. If loop does not enable and fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter for network help or *TDS* chapter for tone and digit switch help or *CFN* chapter for conference help.

#### **BSD207 loop: j1 j2 jn**

Junctor(s) **j1, j2**, for example, cannot be received by the **loop**.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support staff.

1. The network for **loop** is probably faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

2. An intermittent fault is also possible, particularly if multiple BSD207 messages appear for several loops in the same group, each message specifying the same junctor(s) for example **j1** or **j2**. The fault in this case can be a or b as follows.

a) The IGS card(s) for group(s) associated with the **loop** and junctors **j1, j2**, for example can be at fault. Refer to the introduction for Intergroup Switch shelf locations, IGS and group number associations.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If IGS card does not enable and fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**b)** The IGS card(s) for originating group(s), on the same position as the **loop** can be at fault.

**ACTION:** Use the same procedure as 2. a) above.

## BSD208 loop: ts

Software network map indicates that timeslot **ts** of the **loop** is idle but network memory word for that slot is not idle. The indicated slot is marked busy in the software map and the current continuity test of the **loop** is abandoned. There can be a possible software fault (similar to BUG365). If a number of BSD208 or BUG365 messages appear all involving the **loop** or if a BSD203 message appears involving the **loop**, the network for **loop** is probably faulty. Refer to the BSD203 comments. If replacing **loop** does not clear fault, then contact your technical staff support.

**ACTION:** Use STAT l in LD 32 to get the status of the loops. Use ENLL l in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

## BSD209 loop

Network connection memory test of the **loop** detected an address decode fault. Frequently BSD209 messages will appear in pairs; normally only one fault is actually present. Disable either loop by using program LD 32. If the LED lights on network card for that loop and not on any other network card, the fault is probably on the network card.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support staff.



**1.** The LED network card with the LED lit can be faulty.

**ACTION:** Use STAT 1 in LD 32 to get the status of the loops. Use ENLL 1 in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** The CE EXT connecting the active CPU to the shelf housing the network card, or the interconnecting cable, can be faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and 3 Port Extender card. Use ENL EXT x in LD 35 to enable extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**3.** If disabling the loop results in an LED being lit on some other network, the probable fault is on the network on which the LED unexpectedly lit, or on cards listed in 2. above.

**ACTION:** Use same procedure as 1. above.

### **BSD301 loop s: c1 c2 cn**

Two or more PE cards **c1, c2** for example on same **loop** and shelf **s** all fail signaling test. Error code BSD401 is implied for the cards listed. If a card number is preceded by a minus sign, one or more units on that card were disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support staff.

**1.** The Peripheral Buffer on shelf **s** of **loop** can be faulty.

**ACTION:** Use STAT 1 s in LD 32 to get the status of the PB card(s). Use ENLL 1 s in LD 32 to enable the PB card(s) and run TEST in LD 45 to verify that the fault is cleared. If the PB card does not enable and the fault does not clear, replace the PB card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

2. One or more cards **c1**, **c2**, etc., can be faulty.

**ACTION:** Use STAT **l s c** in LD 32 to get the status of the PE cards. Use ENLL **l s c** in LD 32 to enable the cards and run TEST in LD 45 to verify that the fault is cleared. If the cards do not enable and the fault does not clear, replace the PE card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

3. The **loop** cable to the PE shelf can be faulty.

**ACTION:** Replace the cable between PB card and Network card following steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

4. The network card for **loop** can be faulty.

**ACTION:** Use STAT **l** in LD 32 to get the status of the loops. Use ENLL **l** in LD 32 to enable loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

### BSD401 **l s c: u1 u2 un**

The Line or trunk or Digitone receiver card loop **l** shelf **s** failed the signaling test. If the card number **c** is preceded by a minus sign, the card was disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. A line card can be faulty.

**ACTION:** Use STAT **l s c** in LD 32 to get the status of the PE or IPE cards. Use ENLL **l s c** in LD 32 to enable the cards and run TEST in LD 45 to verify that the fault is cleared. If the cards do not enable and the fault does not clear, replace the PE or IPE card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** A trunk card can be faulty.

**ACTION:** Use LDIC l s c u in LD 36 to list days since last call. Use STAT l s c in LD 36 to get status of card. Use ENLL l s c (u) in LD 36 to enable the trunk card or unit and run TEST in LD 45 to verify that the fault is cleared. If the cards do not enable and the fault does not clear, replace the trunk card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**3.** A Digitone Receiver card can be faulty.

**ACTION:** Use STAT or SDTR in LD 34 to list the disabled DTR cards. Use ENLD l s c (u) in LD 34 to enable cards or units and run DTR l s c (u) in LD 34 to test the DTR card or the unit. If the cards or the units do not enable and the fault does not clear, replace the DTR card(s) by following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS DTR* chapter in this guide.

**4.** The Peripheral Buffer on loop l shelf s can be faulty.

**ACTION:** Use STAT l s in LD 32 to get the status of the PB card(s). Use ENLL l s in LD 32 to enable the PB card(s) and run TEST in LD 45 to verify that the fault is cleared. If the PB card does not enable and the fault does not clear, replace the PB card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**5.** If the message includes unit numbers, then two or more SL-1 or Digital line units failed the signaling test, for example **u1, u2**, on card **l s c**. Error code BSD501 is implied for the telephones listed.

**a)** An SL-1, ISDL or DLC line card **l s c** can be faulty.

**ACTION:** Use STAT l s c in LD 32 to get the status of the PE/IPE cards. Use ENLL l s c in LD 32 to enable cards and run TEST in LD 45 to verify that the fault is cleared. If the cards do not enable and the fault does not clear, replace the PE/IPE card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**b)** The Peripheral Buffer on shelf **1 s** can be faulty.

**ACTION:** Use the same procedure as step 4. above.

**c)** All SL-1 or Digital telephones associated with the units **u1**, **u2**, etc., could be faulty.

Use **DISU 1 s c u** in LD 32 to disable the PE/IPE unit(s). Disconnect the suspected faulty telephone and reconnect a working telephone in its place. Use **ENLU 1 s c (u)** in LD 32 to enable unit(s). Try the telephone to see if it works. If the telephone is not working, check the wiring between the PE or IPE shelf backplane and the telephone. Run **TEST** in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

### **BSD402 1 s c: u1 u2 un**

Two or more SL-1 or Digital line circuits **u1**, **u2**, etc. on card **1 s c** failed the signaling test. The signal concentrator on the SL-1 line card also failed. Error code BSD501 is implied for the telephones listed.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

If a unit number is preceded by a minus sign, the unit was disabled. There could be a fault on the following.

**1.** A SL-1, ISDLC or DLC line card **1 s c** can be faulty.

Use **STAT 1 s c** in LD 32 to get the status of the PE/IPE cards. Use **ENLL 1 s c** in LD 32 to enable the cards and run **TEST** in LD 45 to verify that the fault is cleared. If the cards do not enable and the fault does not clear, replace the PE/IPE card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** The Peripheral Buffer on loop **1** shelf **s** can be faulty.

**ACTION:** Use **STAT 1 s** in LD 32 to get the status of the PB card(s). Use **ENLL 1 s** in LD 32 to enable PB card(s) and run **TEST** in LD 45 to verify that the fault is cleared. If the PB card does not enable and the fault does not clear, replace the PB card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**BSD501 l s c u**

A SL-1 or Digital telephone associated with TN **l s c u** failed the signaling test. If the unit number **u** is preceded by a minus sign, the unit is disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** A SL-1 or Digital telephone can be faulty.

**ACTION:** Use DISU **l s c u** in LD 32 to disable the PE/IPE unit(s). Disconnect the suspected faulty telephone and reconnect a working telephone in its place. Use ENLU **l s c (u)** in LD 32 to enable unit(s). Try the telephone to see if it works. If the telephone is not working, check the wiring between the PE or IPE shelf backplane and the telephone. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**2.** A line circuit on the SL-1 or ISDLIC line card indicated, can be faulty.

**ACTION:** Use STAT **l s c** in LD 32 to get the status of the PE/IPE cards. Use ENLL **l s c** in LD 32 to enable cards and run TEST in LD 45 to verify that the fault is cleared. If the cards do not enable and the fault does not clear, replace the PE/IPE card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**BSD600 loop1 loop2 g**

**Loop1** and **loop2** etc., on group **g** could not transmit to any other group. The Intergroup Switch on the same shelf as **loop1 loop2** can be faulty.

**ACTION:** Use STAT IGS **x** in LD 39 to get the status of IGS cards. Use ENL IGS **x** in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

## BSD601 j1 j2 g

No loop tested on group **g** could receive from junctors **j1, j2**.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The IGS cards from junctors indicated can be faulty.

**ACTION:** Use STAT IGS x in LD 39 to get the status of IGS cards. Use ENL IGS x in LD 39 to enable any disabled IGS cards and run TEST in LD 45 to verify that the fault is cleared. If the IGS card does not enable and the fault does not clear, replace the IGS card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

2. A 3PE card can be faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and 3 Port Extender card. Use ENL EXT x in LD 35 to enable the extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and the fault does not clear, replace the extender card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

3. A SCG can be faulty.

**ACTION:** Refer to the input/output guide and the *PRA/DCHI Maintenance Guide*. Use SSCK 0,1 in LD 60 to get the status of the clock cards. Use ENL CC 0,1 in LD 60 to enable the clock and run TEST in LD 45 to verify that the fault is cleared. If the clock does not enable and the fault does not clear, replace the clock controller card(s) by following the steps in the Clock Controller maintenance section of the *PRA/DCHI Maintenance Guide*.

## BSD602 loop

A Digital Trunk Interface (DTI) or a Digital Link Interface (DLI) **loop** failed on the signaling test.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *PRA/DCHI Maintenance Guide*.

## **BSD603 loop**

A previously faulty Digital Trunk Interface or Digital Link Interface **loop** passed the signaling test.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *PRA/DCHI Maintenance Guide*.

## **BSD604**

A manual continuity test number does not match data entered.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## **BSD606**

It is not applicable to XNPD card.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## **BSD659**

Cannot perform test on non-BRSC card. Loopback address must be a BRSC card TN plus a dummy unit number. Enter a BRSC card TN plus a dummy unit number.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *PRA/DCHI Maintenance Guide*.

## **BSD660**

Cannot perform test on the ISDN line card or DSL. The BRSC BRI application that performs Layer 2 signalling processing for the line card or DSL must be in ENABLED state. Check the BRSC state and enable it if necessary.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *PRA/DCHI Maintenance Guide*.

## **BSD661**

Cannot perform test on the BRSC. The BRSC BASE application must be in ENABLED state and the BRI application must be in MANUALLY DISABLED state. If the BRI application is enabled, disable only the application in LD32 with the DISC BRI command. If the BASE application is disabled, enable only the BASE application in LD 32 with the ENLC BASE command.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *PRA/DCHI Maintenance Guide*.

## BSD662

Input TN is already in another test. Enter another TN.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *PRA/DCHI Maintenance Guide*.

## BSD663

Input DSL TN is undefined. Enter another DSL TN.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *PRA/DCHI Maintenance Guide*.

## BSD664

Unable to test a phantom loop, as it does not physically exist. Phantom loops are defined for call redirection and do not require any associated hardware.

**ACTION:** For further information, refer to the *Software feature guide*, Phantom TNs.

## BSD800

A Command is being executed.

**ACTION:** Do not enter any more commands until the last one is finished.

## BSD801

No call register available.

**ACTION:** Keep re-entering the command periodically until an idle register is available. If this message appears frequently, check the TFS004 Processor Load using LD 2. If you need help contact your Traffic Section or refer to the *Traffic Measurements Format and Output Guide*.

## BSD802

No superloop network card.

**ACTION:** Check to make sure your data is correct and re-enter a command if applicable.

## BSD803

No Controller card.

**ACTION:** Check to make sure your data is correct and re-enter a command if applicable.



## **BSD804**

A requested time slot is busy.

**ACTION:** Keep re-entering the command periodically until an idle time slot is available.

## **BSD805**

No time slots free on superloop.

**ACTION:** Keep re-entering the command periodically until an idle time slot is available.

## **BSD806**

The Loop back channel is not available.

**ACTION:** Keep re-entering the command periodically until an idle channel is available.

## **BSD807**

Time out, waiting for network response.

**ACTION:** Re-enter the command until the network responds. If the network does not respond, replace the Network card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

## **BSD808**

A requested TN is busy.

**ACTION:** Use `STAT l s c u` in LD 32 to determine when the TN is idle. Re-enter the command when the TN is idle.

## **BSD809**

A requested TN is maintenance busy.

**ACTION:** Use `STAT l s c u` in LD 32 to determine when the TN is idle. Re-enter the command when the TN is idle.

## **BSD810**

A Specified Controller card does not belong to the specified Network card.

**ACTION:** Check to make sure the correct shelf number is entered.

## **BSD811**

No terminal at that TN.

**ACTION:** Check to make sure your data is correct and re-enter.

## BSD812

Digital terminal at that TN.

**ACTION:** Check to make sure your data is correct and re-enter.

## BSD813

A slot on a requested junctor is busy.

**ACTION:** Keep re-entering the command periodically until an idle junctor is available.

## BSD814

No junctors available for generate slot.

**ACTION:** Keep re-entering the command periodically until an idle junctor is available.

## BSD815

Wait for a prompt.

**ACTION:** Be patient.

## BSD816

No free tags.

**ACTION:** Stop one of the other tests running or complete tests by using the XSTP command and start again.

## BSD817

Cannot send Generate Message (resources cleaned up). The system is temporarily out of message registers.

**ACTION:** Keep re-entering the command periodically until an idle message register is available.

## BSD818

Cannot send Detect Message (resources not cleaned up). The system is temporarily out of message registers.

**ACTION:** Keep re-entering the command periodically until an idle message register is available.

## BSD819

Cannot send XMI Message. The system is temporarily out of message registers.

**ACTION:** Keep re-entering the command periodically until an idle message register is available.

**BSD820**

Last one shot test is still running.

**ACTION:** Do not enter the commands until the test is finished, or stop the test with the XSTP 0 command.

**BSD821**

A tag number is idle.

**ACTION:** If this message appears repeatedly, contact your technical support group.

**BSD822**

A database error: pointer nil.

**ACTION:** If this message appears repeatedly, contact your technical support group.

**BSD823**

One shot status not printed.

**ACTION:** Get the test status by using the XSTA 0 command.

**BSD824**

A Loop is disabled.

**ACTION:** Use ENLL loop in LD 32 to enable the loop. If the loop does not enable, replace the network card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide. Re-enter the original command.

**BSD825**

A Controller is disabled.

**ACTION:** Use ENXP x in LD 32 to enable the controller. If the controller does not enable, replace the controller card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide. Re-enter the original command.

**BSD826**

A TN is disabled.

**ACTION:** Use ENLU l s c u in LD 32 to enable the unit. If the unit does not enable, replace the PE card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide. Re-enter the original command.

## BSD827

Unable to send a message to the MISP application.

**ACTION:** Refer to the input/output guide, LD 60 and the *BRI Maintenance Guide*. Check the state of the MISP card and the application(s).

## BSD828

No available “MISP Expedited” output buffer. Cannot send message to MISP.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## BSD829

Cannot do loopback on a non-BRI line card.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## BSD830

The loop back test can only be performed between an MISP card and one of the BRI line cards assigned to it.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## BSD831

No response from the MISP.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*. Try the command again, if the problem persists, use XSTP to terminate the test.

## BSD832

Suspended tags refer to test cases where the network card did not acknowledge the reception of the test message.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*. Use the command XSTP to free the test case.

## BSD833

Not able to send message to the MISP.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*. Check the status of the MISP.

## **BSD834**

No line cards defined at the given TN.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## **BSD835**

All deals must be in disabled state.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## **BSD836**

The network loop is not an MISP card.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## **BSD837**

Test case number does not match its test data.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## **BSD838**

Not applicable to XNPD card.

**ACTION:** Use LD 60 in the input/output maintenance guide, and refer to the *BRI Maintenance Guide*.

## **BSD900**

Command executing.

**ACTION:** Do not enter more commands until the last command is finished.

## **BSD901**

No call register available.

**ACTION:** Wait and try the command again. If the problem persists, increase the number of call registers using LD 17.

## **BSD902**

No Network card (NT8D04).

**ACTION:** Be sure you entered the correct shelf number.

## BSD903

No Controller (NT8D01).

**ACTION:** Be sure you entered the correct shelf number.

## BSD904

A requested timeslot is busy.

**ACTION:** Keep re-entering the command periodically until an idle time slot is available.

## BS5D905

All time slots on that superloop are busy.

**ACTION:** Keep re-entering the command periodically until an idle timeslot is available.

## BSD906

A Loopback channel is not available.

**ACTION:** Keep re-entering the command periodically until an idle channel is available.

## BSD907

A XMI message was lost.

**ACTION:** Try the test again. If the problem persists, use STAT 1 in LD 32 to check the status of the Network card.

## BSD908

A requested TN is busy.

**ACTION:** Use STAT 1 s c u in LD 32 to determine when the TN is idle. Re-enter the command when the TN is idle.

## BSD909

A requested TN is disabled or maintenance busy.

**ACTION:** Use STAT 1 s c u in LD 32 to determine when the TN is idle. Re-enter the command when the TN is idle.

## BSD910

Controller (NT8D01) does not belong to that Network card.

**ACTION:** Refer to the *administration input/output guide*. Use LD 97 PRT, XPE to check the controller configuration.

**BSD911**

No terminal at that TN.

**ACTION:** Check to make sure your data is correct and re-enter.

**BSD912**

Digital terminal at that TN.

**ACTION:** Check to make sure your data is correct and re-enter.

**BSD913**

Slot on requested junctor is busy.

**ACTION:** Keep re-entering the command periodically until an idle junctor is available.

**BSD914**

No junctors available for generator slot.

**ACTION:** Keep re-entering the command periodically until an idle timeslot is available.

**BSD915**

Wait for a prompt.

**ACTION:** Be patient, you are entering commands faster than the system can handle them.

**BSD916**

No free tags.

**ACTION:** Stop one of the other tests running or complete tests by using the XSTP command and start again.

**BSD917**

Could not send Generate message. The system is temporarily out of message registers.

**ACTION:** Keep re-entering the command until an idle register is available.

**BSD918**

Could not send Detect message. The system is temporarily out of message registers.

**ACTION:** Keep re-entering the command periodically until an idle register is available.

## BSD919

Could not send XMI message. The system is temporarily out of message registers.

**ACTION:** Keep re-entering the command periodically until an idle register is available.

## BSD920

Last one-shot test is still running.

**ACTION:** Wait for the test to complete or stop it by using XSTP 0.

## BSD921

A tag number is idle.

**ACTION:** Use the XNIF command to get a list of completed and running tests.

## BSD922

A Database error: pointer is nil.

**ACTION:** If this message appears repeatedly, contact your technical support group.

## BSD923

One-shot test status not printed.

**ACTION:** Get the test status by using the XSTA 0 command.

## BSD924

Network card (NT8D04) is disabled.

**ACTION:** Use XNTT loop in LD 32 to test the superloop. Use ENLL 1 in LD 32 to enable the loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

## BSD925

Controller card (NT8D01) is disabled.

**ACTION:** Use XPCT x in LD 32 to test the Controller. If the Controller does not pass the test, replace it by following the steps in the *Hardware replacement* guide. Use ENXP x in LD 32 to enable the controller and run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.



**BSD926**

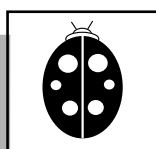
ATN is disabled.

**ACTION:** Use STAT 1 s c in LD 32 to get the status of the PE/IPE cards. Use ENLL 1 s c in LD 32 to enable cards and run TEST in LD 45 to verify that the fault is cleared. If cards do not enable and fault does not clear, replace the PE/IPE card(s) by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide. 



## BUG — Software Error Monitor

### How the BUG works



Software Error Monitor is a resident program. BUG does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

The Software Error Monitor program continuously monitors call processing. When the call processing software detects information which is not in the correct format, or when invalid information is detected, a BUG message is output.

The second line of a BUG message, sometimes has a decimal TN or an SL-1 formatted TN right after the colon (:). The SL-1 formatted TN is referred to as a packed TN and the decimal TN, with spaces, is referred to as an unpacked TN. The packed TN is not a normal hexadecimal number, as its make-up is dependant upon the density of the PE cards used in the system. There are maintenance diagnostics that will convert packed TNs to unpacked TNs.

BUG messages are normally beyond the capabilities of anyone except Northern Telecom and licensee software engineers and code writers.

## BUG messages

### BUG001 - to - BUG480

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

### BUG004

pd EUROMCID\_HANDLER has been called with an invalid source parameter.

**ACTION:** Contact your technical support group.

### BUG006

pd MCID\_ACT\_REQ incorrect msgcr pointer.

**ACTION:** Contact your technical support group.

### BUG009

pd MCID-ACT-REQ incorrect state of the EUROISDN trk over which MCID is attempted, must be established or disconnected.

**ACTION:** Contact your technical support group.

### BUG014

pd MCID\_ACT\_REQ could not get a call register to handle MCID signalling (MCID\_PROT\_CR).

**ACTION:** Contact your technical support group.

### BUG016

pd MCID\_ACT\_REQ could not link the protocol cr to the msg cr.

**ACTION:** Contact your technical support group.

### BUG017

pd MCID\_SND\_FAC could not get a call register to build the facility msg.

**ACTION:** Contact your technical support group.

**BUG018**

pd MCID\_RCV\_RES on reception of the result to an MCID request could not find the MCID protocol cr.

**ACTION:** Contact your technical support group.

**BUG019**

pd MCID\_RCV\_RES checks on apdu received unsuccessfully.

**ACTION:** Contact your technical support group.

**BUG021**

pd MCID\_RCV\_RES invalid value of rose component, must be ret-res, reject, ret-err.

**ACTION:** Contact your technical support group.

**BUG022**

pd MCID\_RET\_ERR invalid tag for error value.

**ACTION:** Contact your technical support group.

**BUG026**

pd MCID\_RET\_ERR invalid value of the error for MCID service.

**ACTION:** Contact your technical support group.

**BUG028**

pd MCID\_RCV\_MSG unexpected msg sent during MCID process.

**ACTION:** Contact your technical support group.

**BUG029**

pd MCID\_SND\_MSG unexpected message sent during MCID process.

**ACTION:** Contact your technical support group.

**BUG031**

pd MCID\_IDLE\_CR the MCID protocol call register is invalid.

**ACTION:** Contact your technical support group.

**BUG032**

NXT\_TTR\_GRP is corrupted. Value is reset.  
:TTR\_GROUP,NXT\_TTR\_THIS\_GRP <TTR\_GROUP>.

**ACTION:** Contact your technical support group.

# BUG

## **BUG480 followed by BUG481**

These messages appear when attempting to LOGI to the system and trying to load any overlay.

**ACTION:** Try a parallel reload to clear memory fragmentation, then check for the same BUG messages.

**ACTION:** If messages still persist use LD 137 SWAP to exchange main and secondary database files, and Cold Start the non-active side again. Check for the same BUG messages.

## **BUG481 - to - BUG769**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG770 followed by BUG1321:0000 xxx**

TN translation failed.

**ACTION:** Use LD 22 PKG to print the list of software packages. Check to see if Package 70, Hot line Services, is included in the list.

**ACTION:** Check for analog (500/2500) telephones not programmed to access NARS/BARS through CLS/NCOS/TGAR.

## **BUG780 - to - BUG4035**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG1312**

Distinctive ringing. If receiving a large quantity of messages, there could be a possible database mismatch of XCT cards, that is, if the system had Distinctive Ringing and was prompted to eliminate the feature.

**ACTION:** Do an initialization to clear the fault.

**BUG2001**

The number of Digital TNs configured in the system is equal to or is less than zero.

**ACTION:** Contact your technical support group.

**BUG2002**

The number of analog TNs configured in the system is equal to or is less than zero.

**ACTION:** Contact your technical support group.

**BUG4036**

NIL pointer in procedure call.

**ACTION:** Do a SYSLOAD. On continued failure, contact your supplier. CAUTION: SYSLOAD interrupts call processing.

**BUG4037**

Possible corruption of memory (global pointer).

**ACTION:** Do a SYSLOAD. On continued failure, contact your supplier. CAUTION: SYSLOAD interrupts call processing.

**BUG4038**

Attempt to idle a Call Register with a NIL pointer.

**ACTION:** Do a SYSLOAD. On continued failure, contact your supplier. CAUTION: SYSLOAD interrupts call processing.

**BUG4039**

Possible corruption of memory (global variable).

**ACTION:** Do a SYSLOAD. On continued failure, contact your supplier. CAUTION: SYSLOAD interrupts call processing.

**BUG4041**

Possible corruption of memory (global variable).

**ACTION:** Do a SYSLOAD. On continued failure, contact your supplier. CAUTION: SYSLOAD interrupts call processing.

**BUG4042**

Possible corruption of memory (data).

**ACTION:** Do a SYSLOAD. On continued failure, contact your supplier. CAUTION: SYSLOAD interrupts call processing.

# BUG

## **BUG4043**

PSDL procedure called with an invalid command.

**ACTION:** Do a SYSLOAD; on continued failure, contact supplier.

**CAUTION:** SYSLOAD interrupts call processing.

## **BUG4044 - to - BUG4340**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG4248:000006**

Procedure MAX. KEYLINKS passed. Unit type is not a BCS unit. Receiving this message during daily (midnight) routines.

**ACTION:** Use LD 32 to check that the PWR TNs on the attendant console are disabled and not in the idle state.

## **BUG4341**

TTY10BLK\_PTL=NIL at FREE\_U\_X25\_DATA.

**ACTION:** Investigate possible data corruption.

## **BUG4342**

U\_DATA\_BLK\_PTR=NIL at FREE\_U\_X25\_DATA.

**ACTION:** Investigate possible data corruption.

## **BUG4343**

X25\_I\_PTR=NIL at FREE\_U\_X25\_DATA.

**ACTION:** Investigate possible data corruption.

## **BUG4344**

X25\_O\_PTR=NIL at FREE\_U\_X25\_DATA.

**ACTION:** Investigate possible data corruption.

## **BUG4345**

U\_X25\_BLK\_PTR=NIL at FREE\_U\_X25\_DATA.

**ACTION:** Investigate possible data corruption.

## **BUG4346**

Invalid case at X25 handler.



**ACTION:** Investigate data corruption problem.

**BUG4347**

Invalid X25 link with standby (CSLM). X25 link has no standby.

**ACTION:** Investigate data corruption problem.

**BUG4348 - to - BUG4374**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG4375**

NIL ptr found at init\_X25\_VC.

**ACTION:** Investigate possible data corruption.

**BUG4376**

X25\_U\_VC\_ptr=NIC at update\_V.

**ACTION:** Investigate possible data corruption.

**BUG4377**

X25\_U\_blk\_ptr=NIL at upd\_lay3\_state.

**ACTION:** Investigate possible data corruption.

**BUG4378**

X25\_U\_VC\_ptr=NIC at upd\_data\_xfer.

**ACTION:** Investigate possible data corruption.

**BUG4379**

Invalid constant at flow handler.

**ACTION:** Investigate possible data corruption.

**BUG4380**

No clr\_call for PVC at DO\_SND\_CLR\_IND.

**ACTION:** Investigate possible data corruption.

**BUG4381 - to - BUG4409**

Software code descriptions.

# BUG

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG4410**

A truncation error has occurred in OMEGA memory management. It was corrected.

**ACTION:** Investigate further.

## **BUG4411 - to - BUG4552**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored

**ACTION:** Contact your technical support group.

## **BUG4553**

X25-SET-PTR failed.

**ACTION:** Investigate data corruption.

## **BUG4554**

Invalid case # at X25 handler.

**ACTION:** Investigate data corruption.

## **BUG4555**

Invalid LAY3 state at X25.

**ACTION:** Investigate data corruption.

## **BUG4556**

X25\_VC\_Set\_ptr failed at X25.

**ACTION:** Investigate data corruption.

## **BUG4557**

IO BLOCKLINK=NIL at X25.

**ACTION:** Investigate data corruption.

## **BUG4558**

U\_CSL\_PTR=NIL at X25.

**ACTION:** Investigate data corruption.

**BUG4559**

Device address=NIL.

**ACTION:** Investigate data corruption.

**BUG4560 - to - BUG5109**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG5110**

The CRPTR is not in range when a release is requested during an ATTN\_RLS\_CALL.

**ACTION:** Notify the attendant to release the SRC/DEST if this occurs. If the release is not allowed and the request is ignored, there could be a stuck path.

**BUG5111 - to - BUG5178**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG5179**

The SET\_ROUTE\_PTRS failed in the TIE\_INC\_INP procedure. A forced release is needed because you may have a stuck trunk.

**ACTION:** Check the TN indicated in the CRPTR information for status.

**BUG5180 - to - BUG5208**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored

**ACTION:** Contact your technical support group.

## **BUG5209**

No father CR found when SON\_CR processed in queue.

**ACTION:** Wait to receive a tone.

## **BUG5210 - to - BUG5396**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG5397**

The code for executing the MSDL commands in overlays 37, 42, 48 and 96 received a failure return code from SET\_MSDDL MISP\_PTR.

**ACTION:** Check for MSDL database corruption.

## **BUG5398 - to - BUG5401**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG5402 x y**

The CSUBSTAT field on the MSDL/MISP contained invalid data.

**x** = The MSDL/MISP card number (in decimal).

**y** = The value that was invalid.

When the card in question is an MSDL, one possible reason for this BUG message is that there are multiple cards in the system with the same device number as the MSDL. Therefore when the read is performed to the register on the MSDL, it may not be the MSDL card that is responding. (This will not be the case for the MISP, as the device address is determined by its position in the network shelf.)

**ACTION:** Use LD 22 PRT to check the MSDL device numbers. If any device numbers are the same, use LD 17 ADAN to change them.

## **BUG5403 - to - BUG5423**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages cause no problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG5416**

Conference timeslot is not in a valid state. Conference will not be set up or torn down properly. :Conference loop, timeslot, conference number, function.

**ACTION:** Contact your technical support group.

**BUG5417**

Invalid number of conference members. Conference will not be set up or torn down properly. :Conference loop, timeslot, conference number, function members.

**ACTION:** Contact your technical support group.

**BUG5424**

No alerter defined for Enhanced Call Trace so it cannot be rung.

**ACTION:** Define alerter by the prompt CTAL in LD 56.

**BUG5425**

No background terminal defined and LD 15 CTBG option is set to Yes. The EMCT reports cannot be printed.

**ACTION:** Define a background terminal or change the CTBG option.

**BUG5426 - to - BUG5537**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages cause no problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG5538**

A problem encountered when trying to setup MSDL pointers. TTY corruption on MSDL using STA application. In the LD 22 printout of the ADAN, CTYP shows \*\*\*\*.

**ACTION:** If a modem connection is used for the STA application, check the modem setting for no local echo, no modem status output, and dropping DCD when the modem disconnects.

**ACTION:** A system reload may be required to restore the I/O block table.

## **BUG5539 - to - BUG6016**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG6017**

A problem occurred when attempting to recover packages during cold start (option 81 only).

**ACTION:** Print out the list of equipped packages in LD 22. If it does not match the label, restart the system. If it does, use LD 17 to configure the current language as desired.

## **BUG6018**

The language setup information could not be recovered from the disk. Language is forced to English (option 81 only).

**ACTION:** Use LD 17 to configure the current language as desired.

## **BUG6019 - to - BUG6050**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG6051**

The data in the language file has an incorrect format. The translation status is forced to NONE.

**ACTION:** First go to Load 17 and configure prompt TRNS with the desired option. Then do a data dump.

**BUG6052 - to - BUG6243**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG6244**

SETCUSTPTRS failed. Customer number and terminal are printed.

Customer number is from the protected line block unless the terminal is a DTR, which takes it from its active call register.

**ACTION:** Print TN block (except DTR) and reconfigure if the customer number is not correct.

**BUG6245 - to - BUG7018**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG6248**

EvtEdt: Event Defaults Table does not exist.

**ACTION:** Contact your technical support group.

**BUG6249**

EvtEdt: Cannot open Error Severity lookup file.

**ACTION:** Contact your technical support group.

**BUG6250**

EvtEdt: Insufficient memory to build Event Defaults Table.

**ACTION:** Contact your technical support group.

**BUG6251**

EvtEdt: Error severity lookup file is missing. Attempting to build a new one.

**ACTION:** Contact your technical support group.

**BUG6252**

EvtEdt: Error Message lookup file is missing.

**ACTION:** Contact your technical support group.

**BUG6268**

Bad entry to global procedure IAGT.

**ACTION:** Contact your technical support group.

**BUG6269**

Invalid IAGT SFR feature.

**ACTION:** Contact your technical support group.

**BUG6270**

Unable to remove acquired agent from IAGT link list.

**ACTION:** Contact your technical support group.

**BUG6271**

Unable to set up U\_CSL\_PTR for an acquired IAGT agent.

**ACTION:** Contact your technical support group.

**BUG6272**

P\_IAGT\_TN\_BLK prt is not found for an acquired agent.

**ACTION:** Contact your technical support group.

**BUG6273**

IAGT data pointer(s) are not found for an acquired IAGT agent.

**ACTION:** Contact your technical support group.

**BUG6281**

DPNNS NS: an attempt has been made to find another termination for a call after a night service divert request. The MIANPM returned <NARS\_CALL> is not proper. A TERTN should already have been found for this call at this stage

**ACTION:** Contact your technical support group.

**BUG6282**

NS: a CCM has been received on a channel after a night service diversion.

**ACTION:** Ensure that the third party complies with the BTNR.

**BUG6284**

During retrieval, the controlling channel in a Night Service process was not tagged as DPNSS1.



**ACTION:** Contact your technical support group.

**BUG6285**

There is a mismatch in the new and old call.

**ACTION:** Contact your technical support group.

**BUG6286**

Flags or pointers not properly set in a call register associated with DPNNS1 Night Service.

**ACTION:** Contact your technical support group.

**BUG6293**

Incorrect input message received from the TDET when ARDL call processing.

**ACTION:** Contact your technical support group.

**BUG6294**

Cannot spawn to reset power supply.

**ACTION:** If the problem persists, contact your technical support group.

**BUG6394**

The VDN data structure is corrupted. Some VDN blocks may be lost.

**ACTION:** Run AUDIT to rebuild recoverable VDN blocks. Recreate VDN blocks that have been lost.

**BUG6395**

The call register passed to the global procedure IED\_CHK is nil.

**ACTION:** If the problem persists, contact your technical support group.

**BUG6396**

G\_GF\_MSGCRPTR is nil, cannot build call-indp msg.

**ACTION:** Contact your technical support group.

**BUG6397**

Unexpected process type in GF\_CR.

**ACTION:** Contact your technical support group.

**BUG6398**

The call register passed to the global procedure IED\_CHK is nil.

**ACTION:** If the problem persists, contact your technical support group.

**BUG6399**

In procedure RO\_NO\_CIM\_RECVD, TER must be DPNSS as Route Optimization process is in operation on this side of the CR of the new call.

**ACTION:** Run AUDIT, as there may be unreleased CR and/or wrong channel states (new channel remains in a Route Optimization state).

**BUG6404**

A network call park operation is tried from one node to another node for which the Call Park Networkwide feature is not defined.

**ACTION:** Contact your system administrator if the Call Park Networkwide operation is desired.

**BUG6405**

Unable to remove the reserved agent son cr from the main cr.

**ACTION:** Contact your technical support group.

**BUG6406**

Agent reserved son cr cannot be linked to NSBR call.

**ACTION:** Contact your technical support group.

**BUG6407**

NSBR call cannot be terminated to a CDN.

**ACTION:** Contact your technical support group.

**BUG6438**

Invalid message type is passed to procedure IAGT.

**ACTION:** Contact your technical support group.

**BUG6439**

Invalid agent resync state is found.

**ACTION:** Contact your technical support group.

**BUG6440**

Invalid IAGT is found from agent link list.

**ACTION:** Contact your technical support group.

**BUG6441**

CRPTR is out of range. Output: TERMINAL.

**ACTION:** Contact your technical support group.

**BUG6442 <type of failure> <event/state> <parm1><parm2><parm3>**

Call completion (CC) Supplementary Service. Software failure detected by CC QSIG protocol handler.

**ACTION:** Contact your technical support group.

**BUG6443 <cause> <source>**

Call Completion Supplementary Service. Error detected by CC TERMINAL handler.

**ACTION:** Contact your technical support group.

**BUG6444 <type of error> (parms)**

Call Completion (CC) Supplementary Service. Error detected by CC ETSI-T protocol handler.

**ACTION:** Contact your technical support group.

**BUG6445 <type of error> <type of gateway> <source in sscg\_gateway>**

Call Completion (CC) Supplementary Service. Error at a gateway node.

**ACTION:** Contact your technical support group.

**BUG6446 <protocol call-register pointer>**

Call Completion (CC) Supplementary Service. Procedure FIND\_USER\_PTR failed.

**ACTION:** Contact your technical support group.

**BUG6447 <protocol call register pointer>**

Call Completion (CC) Supplementary Service. Procedure FIND\_PRA\_MSG\_PTR failed.

**ACTION:** Contact your technical support group.

**BUG6448 <protocol call register pointer>**

Call Completion (CC) Supplementary Service. Procedure IDLE\_PROT\_CR failed.

**ACTION:** Contact your technical support group.

**BUG6449 <RCAP id>**

Call Completion (CC) Supplementary Service. Procedure HAS\_RCAP failed. Invalid RCAP id.

**ACTION:** Contact your technical support group.

**BUG6450 <source in ssec\_utility <int1> <int2> <int3>**

Call Completion (CC) Supplementary Service. Invalid parameter pointer passed in SSCC\_UTILITY.

**ACTION:** Contact your technical support group.

**BUG7019**

MSYNC: Sync failure at address a (local = **b**; remote = **c**).

**ACTION:** Use the TEST CP command in OVL135 to try to recover memory shadowing.

**BUG7020 - to - BUG7033**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7034**

Manual INIT button disabled.

**ACTION:** Reload the system with the Manual reload button.

**BUG7035 - to - BUG7041**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7042 x y**

Checksum error at address **x** caused by cold start.

**ACTION:** Reset the SIMM in SIMM slot **y**. If the problem persists, replace the CP card.

**BUG7043**

System recovery failure. Task = **n**.

**ACTION:** Reload the system with the Manual reload button.

**BUG7044**

Restart subsystem failure. No automatic restart.

**ACTION:** Reload the system with the Manual reload button.

**BUG7045 - to - BUG7062**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7063**

Failed in CMB access. Address: **n**.

**ACTION:** Reset or replace CP card.

**BUG7064**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored

**ACTION:** Contact your technical support group.

**BUG7065**

Failed to spawn "TSWD" task.

**ACTION:** Reload the system with the Manual reload button.

Reinstall software from the installation disks.

**BUG7066 - to - BUG7068**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored

**ACTION:** Contact your technical support group.

**BUG7069**

Failed to allocate SWD memory.

**ACTION:** Reload the system with the Manual reload button.

## **BUG7070 - to - BUG7071**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored

**ACTION:** Contact your technical support group.

## **BUG7072**

X CP database parse error(s) occurred.

**ACTION:** Restore the database from backup disks.

## **BUG7073 - to - BUG7076**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages cause no problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG7077**

CP database not found.

**ACTION:** Restore the database from the backup disk.

## **BUG7078**

Local fault (parity) threshold exceeded. Performing switchover.

**ACTION:** Reset or replace the CP card.

## **BUG7079**

Local fault (parity) threshold exceeded. Switchover failed.

**ACTION:** Reset or replace CP card.

## **BUG7080 - to - BUG7099**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored

**ACTION:** Contact your technical support group.

**BUG7100**

IPB database not found.

**ACTION:** Restore the database from the backup disk.

**BUG7101**

IPB database of an unexpected release.

**ACTION:** Restore the database from the backup disk.

**BUG7102**

IPB x database parse error(s) occurred.

**ACTION:** Restore the database from the backup disk.

**BUG7103 - to - BUG7104**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7105**

IPB card inserted did not fully seat IRQ disabled.

**ACTION:** Check card keying, or re-seat the card.

**BUG7106 - to - BUG7221**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7222**

Class <name> failed in init phase.

**ACTION:** Initialize the system with the manual INIT button.

**BUG7223 - to - BUG7225**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored

**ACTION:** Contact your technical support group.

## **BUG7226**

HI directory not known to DLO.

**ACTION:** Reinstall the software from the installation disks.

## **BUG7227**

Corrupted HI directory name: <file name>.

**ACTION:** Restore the database from the backup disk.

## **BUG7228**

Cannot open directory <name>. Error number??

**ACTION:** Restore the database from the backup disks.

## **BUG7229**

Failed to copy from <drive> to <drive>.

**ACTION:** Check that the disk is in the correct drive.

## **BUG7230**

Failed to save <file name>. Error number??

**ACTION:** Check the CMDU power switch.

## **BUG7231 - to - BUG7235**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages cause no problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG7236**

Cannot locate HI data directory.

**ACTION:** Restore the database from the backup disk.

## **BUG7237 - to - BUG7346**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.



**BUG7347**

Exception. restarting with code x.

**ACTION:** Check the CMDU power switch. Be sure the IP Enb/Dis switch is enabled. Check both ends of the IOP SCSI cable and both CMDUs.

**BUG7348 - to - BUG7378**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7379**

Failed to find the IOP that passed the self test.

**ACTION:** Be sure the IOP enable/disable switch is up. Re-seat or replace the security cartridge on the IOP.

**BUG7380**

Failed to find the IOP that passed the self test. Switchover and restart will be attempted.

**ACTION:** Re-seat or replace the IOP.

**BUG7381**

Failed to find IOP on both sides.

**ACTION:** Reseat or replace both Hips. Be sure the enable/disable switches are up.

**BUG7382 - to - BUG7431**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7432**

Exception. Restarting with code x.

**ACTION:** Be sure the CMDU power is on. Check that the IOP Enb/Dis switch is up. Check both connectors of the IOP SCSI cable, and both CMDUs.

# BUG

## **BUG7433 - to - BUG7463**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG7464**

Failed to find the IOP that passed the self test.

**ACTION:** Be sure the IOPEnb/Dis switch is up. Reseat or replace the security cartridge on the IOP.

## **BUG7465**

Failed to find the IOP that passed the self test. Attempting switchover.

**ACTION:** Be sure the IOP Enb/Dis switch is up. Reseat or replace the security cartridge on the IOP.

## **BUG7466**

Failed to find any IOP. Attempting switchover.

**ACTION:** Be sure the IOP Enb/Dis switch is up. Reseat or replace the security cartridge on the IOP.

## **BUG7467**

Graceful switchover during IOP search was rejected.

**ACTION:**

## **BUG7468**

Failed to find any IOP on this side. Switchover was rejected.

**ACTION:** Be sure the IOP Enb/Dis switch is up. Reseat or replace the security cartridge on the IOP.

## **BUG7469**

Failed to find IOP on both sides.

**ACTION:** Be sure the IOP Enb/Dis switch is up. Reseat or replace the security cartridge on the IOP.

**BUG7470 - to - BUG7485**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7486**

OS x y may not match “diskos” loaded from z.

**ACTION:** Check floppies in floppy drives.

**BUG7487**

OS x y does not match “diskos” loaded from z.

**ACTION:** Check floppies in floppy drives.

**BUG7488**

SEC Cartridge check failed.

**ACTION:** Check SEC Cartridge/Dongle. Proceeding without File System.

**BUG7489**

Attempt to select IOP/CMDU failed. File System may not be accessible.

**ACTION:** Check the IOP/CMDU. Use MAN INIT when ready.

**BUG7490 - to - BUG7493**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

**BUG7494**

A may not match “diskos” loaded from b.

**ACTION:** Check floppies in floppy drives.

**BUG7495**

A does not match "diskos" loaded from b.

**ACTION:** Check floppies in floppy drives.

## **BUG7496**

Failed to find the IOP.

**ACTION:** Reseat or replace IOP. Check that IOP enable/disable switch is enable (up).

## **BUG7497 - to - BUG7579**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages cause no problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG7580**

RST: Remote access timed out.

**ACTION:** Change to SINGLE mode. Check to make sure that the CP to CP cable is properly connected, and that power on the remote side is not faulty. Also make sure the remote CP board is seated.

## **BUG7581**

Number of SIMMs on both sides does not match.

**ACTION:** Be sure both sides have the same number of SIMMs installed. Verify the number of good SIMMs in the system by verifying the SYS702 messages received during the cold start.

## **BUG7582 - to - BUG8999**

Software code descriptions.

Certain faults will require gathering BUG messages and forwarding these messages to a Northern Telecom support group for resolution.

If BUG messages do not cause problems, they can be ignored.

**ACTION:** Contact your technical support group.

## **BUG9000**

Global procedure PTU, returned invalid value. Module: MFC:

Procedure: ACTV\_UPF\_CNI\_PTU.

**ACTION:** Contact your technical support group.

## **BUG9001**

Procedure called with an invalid source. Module: MFC. Procedure: PTU.

**ACTION:** Contact your technical support group.

**BUG9002**

Different values returned when procedure called twice in the same timeslice with the same parameters (for early check traffic pegging purposes). Module: NARS. Procedure: NARS\_FIND\_ROUTE.

**ACTION:** Contact your technical support group.

**BUG9003**

The parameters sent are incorrect; either the unprotected route pointer is NIL, or the value assigned to the TRK\_BUSY\_BIT is incorrect (must be zero or one). Note: the parameters are printed in the BUG message. Module: TRK. Procedure UPD\_TRK\_BUSY\_BIT.

**ACTION:** Contact your technical support group.

**BUG9004**

An attempt was made to increment or decrement the idle trunk counter beyond its allowable range (0-254). Procedure: UPD\_TRK\_BUSY\_BIT.

**ACTION:** Contact your technical support group.

**BUG9005**

Procedure is called during a PTU early check. Procedure: DIGPROC.

**ACTION:** Contact your technical support group.

**BUG9006**

Task spawn failed.

**ACTION:** If the problem persists, initialize the switch. If the problem continues, contact your technical support group.

**BUG9007**

A CDR call register has timed out after 5 minutes while waiting for PPM information from the trunk. That call register is idled

**ACTION:** Contact your technical support group.

**BUG9008**

Error occurred writing Alarm Management Database.

**ACTION:** Check the file and the hard disk.

**BUG9009**

Cannot make a Backup of the existing Alarm Management Database.

**ACTION:** Check the file and the hard disk.

**BUG9010**

Cannot close Alarm Management Database file.

**ACTION:** Check the file and the hard disk

**BUG9011**

Cannot create/open Alarm Management Database directory.

**ACTION:** Check the file and the hard disk.

**BUG9012**

Cannot create Alarm Management Database directory.

**ACTION:** Check the file and the hard disk.

**BUG9013** <list type> <cust> <list>

Corruptions in MANP or DGCR list of CLIP list.

**ACTION:** Contact your technical support group.

**BUG9014**

MMIH: Failure to spawn task <taskname>.

**ACTION:** Contact your technical support group.

**BUG9015**

MMIH: Failure to create print task message queue.

**ACTION:** Contact your technical support group.

**BUG9016**

MMIH: Failure to create semaphore for message buffer.

**ACTION:** Contact your technical support group.

**BUG9017**

MMIH: Failure to create message buffer.

**ACTION:** Contact your technical support group.

**BUG9018**

An mCIDR return error component (see Appendix C) has been returned with the indication 'invalidCallState'. This means that the network has received the mCIDRequest invoke component from the called party in a state other than the Active state (N10) or the Disconnect indication state (N12).

**ACTION:** If this is a frequent message, report the problem to your technical support group.

**BUG9019**

A mCIDRequest return error component (see Appendix C) has been returned with the indication 'notIncomingCall'. This is considered a bug: mCIDRequest is not to be sent for outgoing calls.

**ACTION:** If this message appears frequently, report the problem to your technical support group.

**BUG9020**

A mCIDRequest return error component (see Appendix C) has been returned with the indication 'supplementaryServiceInteractionNotAllowed'. This means that the MCID supplementary service is invoked when another supplementary service is already activated or has already been invoked. The Network does not allow this MCID supplementary service invocation in combination with the other supplementary service.

**ACTION:** Report the problem to your technical support group.

**BUG9023**

Path replacement: problem when switching from the old to the new connection.

**ACTION:** Contact your technical support group.

**BUG9024**

Path replacement protocol failure.

**ACTION:** Contact your technical support group.

**BUG9025**

Path replacement: problem with the GF.

**ACTION:** Contact your technical support group.

**BUG9026**

Path replacement: Invalid pointer.

**ACTION:** Contact your technical support group.

**BUG9027**

Path replacement encoding/decoding problem.

**ACTION:** Contact your technical support group.

**BUG9079**

Call Register idled still in RAN queue.

**ACTION:** Contact your technical support group if the condition persists.

**BUG9080**

Call Register idled still in broadcast trunk list.

**ACTION:** Contact your technical support group if the condition persists.

**BUG9081**

ORIGTN = 0 in a call waiting for RAN.

**ACTION:** Contact your technical support group if the condition persists.

**BUG9082**

TERTN = 0 in a call linked to a RAN broadcasting trunk.

**ACTION:** Contact your technical support group if the condition persists.

**BUG9083**

Data in the TITH Call Register and the RAN Route data block does not match.

**ACTION:** Contact your technical support group if the condition persists.

**BUG9084**

It is not valid to send a Discard Buffer Message for APNSS configurations.

**ACTION:** Please check the configuration for D-Channel number n.

**BUG9085**

The Layer 2 Reset Option (prompt L2\_RST) does not apply for this type of pcakc.

**ACTION:** Please check the configuration for D-channel number n.

**BUG9087**

Call register pointer (CRPTR) passed to procedure BRDCST\_UTILITY is out of range.

**ACTION:** Report the problem if the condition persists

**BUG9088**

Music Broadcast trunk list is broken.



**ACTION:** Report the problem if the condition persists.

**BUG9089**

The number of RAN connections available in the system is equal to less than 0.

**ACTION:** Report the problem and reduce the number of RAN connections until the problem disappears.

**BUG9090**

The number of RAN Broadcast in route available in the system is equal to less than 0.

**ACTION:** Report the problem and remove broadcasting RAN route until the problem disappears.

**BUG9091**

RAN waiting calls list is broken.

**ACTION:** Contact your technical support group if the condition persists.

**BUG9092**

RAN trunk list is broken.

**ACTION:** Contact your technical support group if the condition persists.

**BUG9093 LISPTY\_TN BRDCST\_TN LISPTY\_GROUP LISPTY-JUNC**

Invalid junctor value in procedure BRDCST\_GET\_J when looking for a junctor for a RAN or Music Broadcast call. Parameters: LISPTY\_TN, BRDCST\_TN, LISPTY\_GROUP, LISPTY\_JUNC

**ACTION:** Contact your technical support group if the condition persists.

**BUG9094 BRDPTY\_TN, LISPTY\_TN, TALKSLOT\_WORD, TALKJUNC\_WORD**

Attempt to write to NTWK memories with bad timeslot data (zero) avoided for a RAN of Music Broadcast call in procedure BRDCST\_SETSPEECH. Parameters: BRDPTY\_TN, LISPTY-TN, TALKSLOT\_WORD, TALKJUNC\_WORD

**ACTION:** Contact your technical support group if the condition persists.

**BUG9095 GLOOP U\_G\_LOOP:PTRY**

Network Loop pointer corruption in BRDCST\_SETSPEECH.

Parameters: GLOOPX, U\_G\_LOOP: PTRY

**ACTION:** Contact your technical support group if the condition persists.

**BUG9120**

GDLS\_CALLPROC, GDLSHTPTR is undefined. Serious software fault which will affect system performance.

**ACTION:** Contact your technical support group.

**BUG9121**

GDLS\_CALLPROC called with improper SOURCE value.

**ACTION:** Contact your technical support group.

**BUG9123**

No port type could be assigned to the TN which was invalid in previous ERR 1 message.

**ACTION:** Contact your technical support group.

**BUG9124**

IDLE pads could not be sent. Invalid IDLEFLAG value.

**ACTION:** Contact your technical support group.

**BUG9125**

PADS column is outside specified range (0-1). The TN and the PADS values are printed.

**ACTION:** Check the loss plan for out of range values and modify through the distributor and the manufacturer.

**BUG9126**

RPAD or TPAD column is outside specified range. The TN RPAD and TPAD are printed.

**ACTION:** Check the loss plan for out of range values and modify through the distributor and the manufacturer.

**BUG9127**

An invalid message type was received for a TN specified to receive PAD messaging. The TN and Message type are printed.

**ACTION:** Check card.db file used for mapping against published values in NTP and modify through the distributor and the manufacturer.

**BUG9128**

An empty (NULL) value was specified in the loss plan and could not be sent.

**ACTION:** Contact your technical support group.

**BUG9129**

An invalid message type was received for a TN specified to receive flexible level messages. The TN and message type are printed.

**ACTION:** Contact your technical support group.

**BUG9130**

An invalid message type was encountered when trying to retrieve the encoded message for a specified Receive or Transmit dB value. The message type is printed.

**ACTION:** Contact your technical support group if the problem persists.

**BUG9131**

A value smaller than -12dB RX was passed to be encoded but GDLS encoding tables start at this value. A value of -12dB was used instead.

**ACTION:** Check loss plan table for improvements.

**ACTION:** Note: Extreme values may be beyond the capabilities of the hardware device.

**BUG9132**

A value greater than +14dB RX was passed to be encoded but GDLS encoding tables finish at this value. A value of +14dB was used instead.

**ACTION:** Check the loss plan table for improvements.

**ACTION:** Note: Extreme values may be beyond the capabilities of the hardware device.

**BUG9133**

A value smaller than -12dB TX was passed to be encoded but GDLS encoding tables start at this value. A value of -12dB was used instead.

**ACTION:** Check the loss plan table for improvements.

**ACTION:** Note: Extreme values may be beyond the capabilities of the hardware device.

## **BUG9134**

A value greater than +14dB TX was passed to be encoded but GDLS encoding tables finish at this value. A value of +14dB was used instead.

**ACTION:** Check loss plan table for improvements.

**ACTION:** Note: Extreme values may be beyond the capabilities of the hardware device.

## **BUG9135**

The default port type for the TN passed was not allocated.

**ACTION:** Contact your technical support group.

## **BUG9136**

The PLOOPTR for the TN passed for default port type allocation was invalid.

**ACTION:** Contact your technical support group.

## **BUG9140**

Call register removed from the RAN waiting queue still in the RAN waiting call register's list.

**ACTION:** Report the problem if the condition persists.

## **BUG9141**

A call is connected after the RAN re-started . The beginning of the announcement could be missed.

**ACTION:** Increase the delay between the two announcements on the RAN machine (up to 2 seconds), or reduce the maximum number of RAN connections.

## **BUG9149**

ACD DN was not found in agent's MQA data block whereas the TN of the agent appears in the position list of the ACD DN.

**ACTION:** AUDIT\_POSITIONS

**ACTION:** Agent's TN is removed from the position list of the ACD DN. Loop variable is adjusted so that the TN can be audited in the same place where MQA agent's TN used to be. AGENT\_ID is removed from ID\_TBL if it exists, and from P\_POSITION PTR.

**BUG9157**

A problem occurred during QSIG Diversion.

**ACTION:** Report the problem along with the parameters output.

**BUG9159**

The broadcast speechpath was not set-up.

**ACTION:** Report the problem if the condition persists.

**BUG9160**

While idling a broadcast call the broadcast timeslot junctor was found to be empty.

**ACTION:** Report the problem if the condition persists.

**BUG9174**

The problem occurs when the VI use the GF functionalities.

**ACTION:** Contact your technical support group.

**BUG9175**

Attempting to format an invalid or unsupported DPNSS NSI string.

**ACTION:** FORMAT\_NSI. Module DIO.

**BUG9176**

CRM received in invalid Supplementary Service State.

**ACTION:** MWIGW\_CRM\_INPUT. Module DSS.

**BUG9177**

Invalid GW\_FUNCTION..

**ACTION:** MWIGW\_SERVICE. Module IDAGW.

**BUG9178**

Could not send a Facility (Request) message.

**ACTION:** RCVD\_MWI\_ISR. Module IDAGW.

---

**BUG — Software Error Monitor**

---

**BUG9179**

Could not send a Facility message (either a Facility (Acknowledge) or a Facility (Reject)).

**ACTION:** RCVD\_MWI\_CRM. Module IDAGW.

**BUG9180**

Could not send an ISRM containing a Message Waiting NSI string.

**ACTION:** RCVD\_MWI\_FAC\_REQ. Module IDAGW).

**BUG9181**

Could not send a CRM with a Clearing Cause of Acknowledge.

**ACTION:** RCVD\_MWI\_FAC\_ACK. Module IDAGW.

**BUG9182**

Could not send a CRM.

**ACTION:** RCVD\_MWI\_FAC\_REJ. Module IDAGW.

**BUG9183**

Could not send a Facility Reject message.

**ACTION:** Contact your technical support group.

**BUG9184**

Could not send a Facility Reject message.

**ACTION:** MWIGW\_FAC\_PROB. Module IDAGW.

**BUG9185**

Invalid direction for MCDN TCAP Diagnostic Code {-} DPNSS Clearing Cause mapping.

**ACTION:** MAP\_DIAG\_CC. Module IDAGW).

**BUG9186**

Invalid new call state.

**ACTION:** MWIGW\_SET\_STATE. Module IDAGW.

**BUG9187**

ITEMPTR is NIL.

**ACTION:** MWIGW\_PARM\_CHK. Module IDAGW.

---

## BUG — Software Error Monitor

---

**BUG9188**

MCDN Message CR pointer is invalid.

**ACTION:** MWIGW\_PARM\_CHK. Module IDAGW.

**BUG9189**

CRPTR is invalid.

**ACTION:** MWIGW\_PARM\_CHK. Module IDAGW.

**BUG9190**

Invalid GW\_FUNCTION.

**ACTION:** MWIGW\_PARM\_CHK. Module IDAGW.

**BUG9191**

Could not map the digits for the OLI of the outgoing Message Waiting ISRM.

**ACTION:** MWIGW\_GET\_OLI. Module IDAGW.

**BUG9225**

Corruption of word RINGSLOT\_JUNC in the UBCS\_BASICBLK has occurred. 

**ACTION:** Contact your technical support group.

**BUG9234**

Wrong parameters have been passed to MEET\_HANDLER, MEET\_RCV\_MSG or MEET\_HANDLER\_NAS. Output: {x} = 1 MEET\_HANDLER, 2 MEET\_RCV\_MSG, 3 MEET\_HANDLER\_NAS {y} = REQ value, {z} = DATA1 value

**ACTION:** Contact your technical support group.

**BUG9235**

Registration to GF of MCDN End to End Transparency has failed.

**ACTION:** Contact your technical support group.

**BUG9236**

The message indicates a QSIG call transfer protocol failure.

**ACTION:** Action: Contact your technical support group.

## BUG — Software Error Monitor

---

### BUG9237

QSIG call transfer. A problem exists with the GF.

**ACTION:** Action: Contact your technical support group.

### BUG9238

QSIG call transfer. A pointer is invalid.

**ACTION:** Action: Contact your technical support group.



---

## BUG — Software Error Monitor

---

**BUG9239**

A problem exists with the QSIG call transfer encoding and decoding.

**ACTION:** Action: Contact your technical support group.,

**BUG9258**

An invalid state for incoming TWR1 call. Output data: trktn source tw\_inc\_pm.

**ACTION:** Contact your technical support group.

**BUG9259**

The current maximum interface number was found to be invalid when using overlay 73 to add an interface to the D-channel list.

**ACTION:** Action: Contact your technical support group.

**BUG9260**

Itempointer is nil in TAIWAN\_HANDLER.

**ACTION:** Contact your technical support group.

**BUG9262**

This supervision type is not for Japan DID or CO.

**ACTION:** Contact your technical support group.

**BUG9263**

The ACLI son call register is NIL.

**ACTION:** Contact your technical support group.

**BUG9265**

The number of portalbes configured in the system has reached the limit.

**ACTION:** Contact your technical support group.

**BUG9266**

A problem occurred during QSIG Call Transfer.

**ACTION:** Action: Report the problem.

**BUG9267**

Procedure DV\_CLEAR\_FLAGS: NIL pointer passed.

**ACTION:** Contact your technical support group.

## **BUG — Software Error Monitor**

---

### **BUG9271**

VNS processing was unable to release recourses by calling  
VNS\_END\_OF\_DIAL. Possible system INI was prevented.

## CCED — LD 135 Core Common

### In this chapter

|                                     |     |
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## How the CCED works

LD 135 (Core Common Equipment Diagnostic) provides diagnostic and maintenance information for Option 51C/61C/81 machines. It provides a means of performing the following functions:

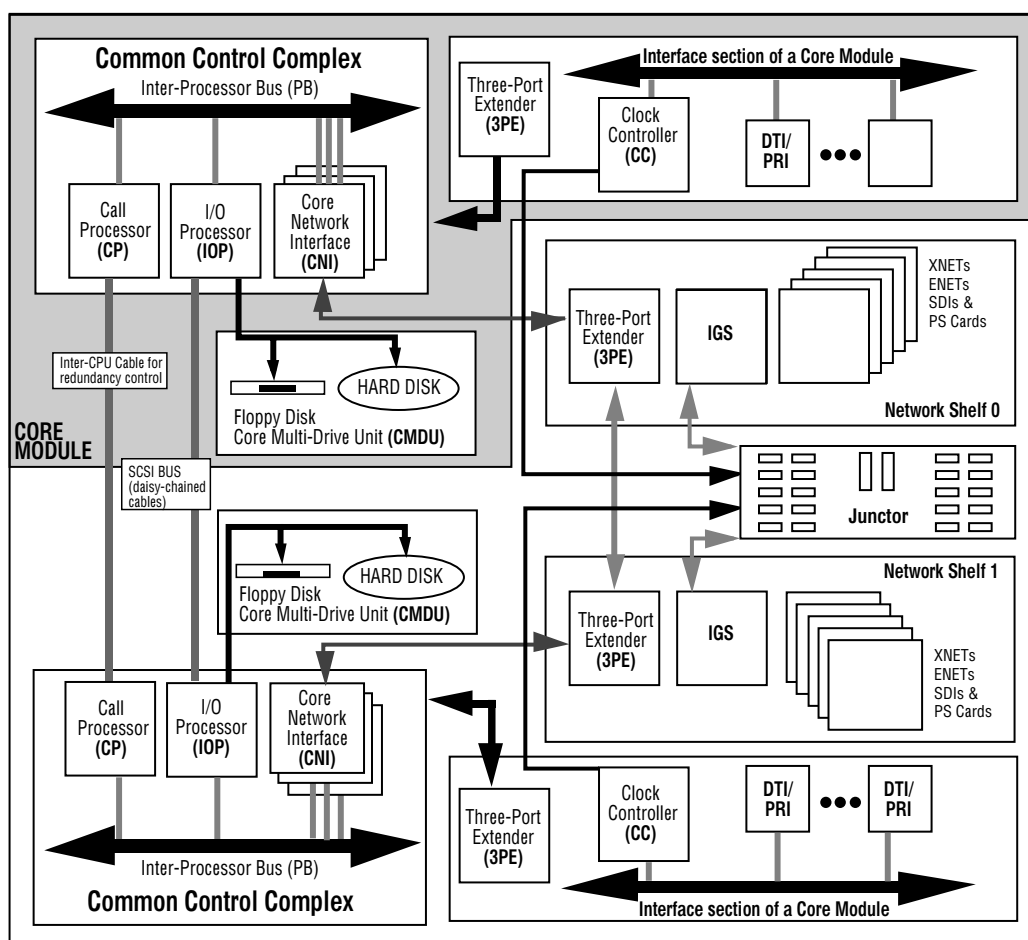
- ◆ clearing minor and major alarms
- ◆ clearing and printing maintenance display contents for the primary Core
- ◆ testing the idle Core
- ◆ displaying CP card status and ID
- ◆ enabling and disabling CNI cards
- ◆ displaying CNI card ID and status
- ◆ testing SIMMs, inactive CNIs, and standby Core during daily routines
- ◆ switching Cores when in redundant mode
- ◆ during midnight routines checking primary CNIs, checking for Core redundancy, and attempting to switch Cores

## Common control complex

The common control complex (Core) consists of an Inter Processor Bus (IPB), Call Processor (CP), Input/Output Processor (IOP), Core to Network Interface (CNI), and Core Multi-Drive Unit (CMDU), all contained in a Core Module.

The Option 61C and 81 has two Core modules to provide redundancy. The Option 51C has only one Core module.

The diagram below depicts an Option 81 layout. The layout for the Option 51C and 61C is similar except there is only one CNI card for each Core Module.



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### Inter-Processor Bus

The IPB is a multi-master bus used by the CP to communicate with various core units. The address and data bus is capable of handling 32 bits.

### Special circuit components

**Bus Interface Chip** — The BIC provides interface to the IPB, and replaces the Omega IF card. The BIC is found on all Core cards except CBT and CMDU cards.

**System Resource ASIC** — The SRA provides interrupt handling, timers and local bus arbitration on the CP. The SRA replaces part of the Omega FN card.

**Changeover Memory Block** — The CMB provides DRAM control and separate updating of memory (shadowing). The CMB replaces the CMA card.

#### CCED common commands

| Command                                      | Description                                                                                               | Release       |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------|
| <b>Clear maintenance displays and alarms</b> |                                                                                                           |               |
| <b>CDSP</b>                                  | Clear maintenance displays.<br><br>This command sets the maintenance display for the primary CP to blank. | 51C/61C/81-19 |
| <b>CMAJ</b>                                  | Clear major alarm, and reset power fail transfer.                                                         | 51C/61C/81-19 |
| <b>CMIN ALL</b>                              | Clear minor alarm indication for all customers.                                                           | 51C/61C/81-19 |
| <b>CMIN n</b>                                | Clear minor alarm indication for customers.                                                               | 51/C61C/81-19 |
| <b>Run midnight routines</b>                 |                                                                                                           |               |

|             |                                                                      |               |
|-------------|----------------------------------------------------------------------|---------------|
| <b>MIDN</b> | Run midnight routines after LD 135 is aborted and TTY is logged out. | 51C/61C/81-19 |
|-------------|----------------------------------------------------------------------|---------------|



**CCED common commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Split mode**

|              |                                                                    |               |
|--------------|--------------------------------------------------------------------|---------------|
| <b>SPLIT</b> | Put a redundant (shadowed) system into single (non-shadowed) mode. | 51C/61C/81-19 |
|--------------|--------------------------------------------------------------------|---------------|

The active Core remains active. Use this command for parallel reload, and for diagnostics requiring split mode operation. Additionally, the standby (inactive) Core “wakes up” and does a system level INIT. When the command is successful, OK is printed. If it is not successful, an error message is printed.

This command has the same effect as putting both Cores into MAINT.

If a terminal is connected to the secondary Core's CPIO port, OS level start-up messages appear as well as INI messages. This is not an error, and is operating according to design.

If the disks are not synchronized, the command aborts, and an error message appears.

**Restore redundancy**

|             |                                                                         |
|-------------|-------------------------------------------------------------------------|
| <b>SHDW</b> | Restore redundancy to a system put in single mode by the SPLIT command. |
|-------------|-------------------------------------------------------------------------|

This command cannot be used unless the system is already SPLIT. This command MUST be entered by the CPIO port on the secondary CP.

This command puts the secondary CP to “sleep”. Once the secondary CP is asleep, the primary CP begins the process of updating the secondary CP’s memories so they match the primary CP.

This command does NOT synchronize the contents of the CMDUs. Use LD 137 to synchronize the CMDUs.

When implementing this command, the following is output: WARNING: CP x will be put to SLEEP. Enter <YES> to continue, or press <return> to abort.

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### CCED common commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

#### Switch cores

|      |               |               |
|------|---------------|---------------|
| SCPU | Switch Cores. | 51C/61C/81-19 |
|------|---------------|---------------|

This command causes the inactive CP to become active. If the switchover is successful, **OK** is printed. If it is not successful, an error message is printed.

If, when attempting to switch CPs, the system determines that the currently active side is better than the standby side, and a message appears on the TTY: **FORCE? Enter <YES> to force SCPU to standby Core x. Press <Return> to abort**

**SCPU**. Entering Yes continues the switch. Entering a Carriage Return <CR> defaults to No and retains the currently active side.

#### Print core ID

|         |                                    |               |
|---------|------------------------------------|---------------|
| IDC CPU | Print card ID for the active Core. | 51C/61C/81-19 |
|---------|------------------------------------|---------------|

The printout appears in the following format:

**x y pppppppppp rrssss cccccc**

**x** = Core number (0 or 1)

**y** = Slot number (8-12)

**pppppppppp** = PEC code

**rr** = Release number

**ssss** = Serial number

**ccccc** = Comments (optional)



**CCED common commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Test core**

|                 |                                   |               |
|-----------------|-----------------------------------|---------------|
| <b>TEST CPU</b> | Test the inactive (standby) Core. | 51C/61C/81-19 |
|-----------------|-----------------------------------|---------------|

This command performs NO tests upon the active (primary) Core.

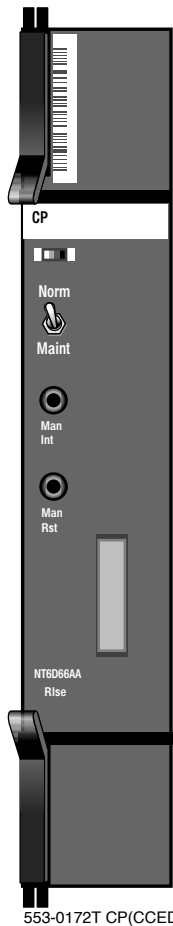
The Core Module Backplane, CP to CP cables, and memory are tested to ensure that Split mode can be entered safely. Then the CP is tested. The system enters split mode, runs the test, and returns to redundancy (memory shadowing).

This may take a few minutes because of the time required to re-establish memory shadowing and contents. It is possible, during the test, that service may be interrupted if an error occurs on the single active Core.

Output from this test is **OK**, or a CCED message. Refer to the specific message for more information.

Testing the secondary (inactive) Core is done by performing a "reset" on the secondary Core. If a terminal is connected to the secondary Core's CPIO, cold start diagnostics are displayed on the terminal. This is not an error, and is operating according to design.

## CP — Call Processor



### Purpose

The CP card provides control and switching sequences for Option 51C, 61C, 81 and 81C.

### Function

The CP performs a function similar to the Omega processor, as described in the *CED* chapter, in this guide, with the following exceptions:

- ◆ the CP has twice the real time capacity of the Omega processor and uses a 32-bit Motorola 68030 processor.
- ◆ The CP card of the Option 81C uses a 68040 processor. This CP card can be used on the Option 81.
- ◆ the CP provides six slots for up to 24 megabytes of memory, using 4 megabyte Single In-line Memory Modules (SIMM). CPs are factory equipped with 16 megabytes of memory. Core memory is separate making it less susceptible to data corruption than previous memory
- ◆ system reload does not affect the real time clock
- ◆ each CP has two serial data interface ports, which are active when the CP is active. One is used for maintenance diagnostics with a DTE, and the other with a DCE for remote use by NT

### Features

The CP faceplate includes the following features:

- ◆ a two line 24 LCD for plain language maintenance messages. At the bottom of the LCD a small rectangle flashes to indicate the active CP
- ◆ a reload button, Man Rst, for system software reloading
- ◆ an LED which flashes three times to indicate a passed self test, and when steady lit indicates a disabled processor
- ◆ a manual initialize button, Man Int, associated with the active processor, which when pushed will rebuild part of the memory and check for CE faults
- ◆ a normal maintenance switch, Norm Maint, when set to Maint is used to force the processor active. This switch is also used when updating from one software release to another

## CP faceplate hex codes

The NT6D66 Call Processor (CP) card in Options 51C/61C/81 utilizes plain text messages as well as Hex messages for system maintenance, messages status, and errors. The Table on the following page lists the different LCD messages that appear on the CP card faceplate. The standard Hex messages also appear on this LCD display.

### **BOOT ERROR: RPT. Init**

System failed to initialize correctly.

**ACTION:** Contact your technical support group.

### **Card is AP: IDLE**

Checking to determine if the system can be Split.

**ACTION:** Information only, no action required.

### **Exit CP-BUG**

The debug program is being exited.

**ACTION:** Information only, no action required.

### **In CP-BUG**

The debug program was entered.

**ACTION:** Information only, no action required.

### **SIOx Created**

CP serial port **x** already exists.

**ACTION:** Contact your technical support group.

### **SIOx Init Fail**

CP serial port **x** failed to initialize the device specific database.

**ACTION:** Contact your technical support group.

### **SIOx No Drv**

No device driver associated with CP serial port **x**.

**ACTION:** Contact your technical support group.

### **Type CTRL-B to run CP-BUG debugger**

Options 51C/61C/81 start-up. Output to CP port prior to loading the operating system.

**ACTION:** Contact your technical support group.

# CCED

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| Core commands      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Command            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Release        |
| CP Display         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |
| DSPL               | Get contents of maintenance display for the active Core.<br><br>If the maintenance display is blank, <b>BLANK</b> is output.                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 51C/61C/ 81-19 |
| DISPL ALL          | Get contents of maintenance display for the active Core, and previous 63 displays.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 51C/61C/ 81-19 |
| CP and SIMM Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |
| STAT CPU           | Get the status and core numbers for both CPs.<br><br>Possible responses are:<br><b>ENBL</b> = CP is running<br><b>IDLE</b> = CP is in standby<br><b>DSBL</b> = CP is disabled<br><br>If the status is DSBL, one of the following OOS reasons is printed:<br><b>0</b> = CP card local bus parity threshold exceeded<br><b>1</b> = CP card sanity timeout threshold exceeded<br><b>10</b> = Secondary CP is not accessible<br><b>16</b> = Secondary CP has a major fault<br><br>This command also prints out the results of the latest self-test, and the position of the Maint/Norm switch. | 51C/61C/81-19  |
| STAT MEM c m       | Get status of SIMMs on both CPs.<br><br>To get the status of a single SIMM, or a specific side enter the following information.<br><b>c</b> = Core (0 or 1)<br><b>m</b> = SIMM number (0-5) If m is not entered, status for all SIMMs is printed.<br>If the status is Disabled (DSBL), the device is not accessible.                                                                                                                                                                                                                                                                       | 51C/61C/81-19  |

**Core commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Test CP**

|                 |                                                                                                                         |               |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>TEST LCD</b> | Test the LCD display on the active CP card.<br>The following test pattern is displayed on the active CP card's display: | 51C/61C/81-19 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|---------------|

**8888888888888888**

**8888888888888888**

**ABCDEFGHIJKLMN**

**OPQRSTUVWXYZ123456**

**abcdefghijklmn**

**opqrstuvwxyz012345**

The first two tests occur very quickly, so you may actually see only the third one.

## Core to Network Interface

The CNI combines the functions of two Segmented Bus Extenders. Three CNI cards are used to connect the Core to five network groups.

Refer to the *CNI* chapter in this guide for a description of the CNI card.

### CNI commands

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Status CNI

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>STAT CNI c s p</b> | <p>Get the status of all configured CNIs. 51C/61C/81-19</p> <p>Also prints the Network Group number of both ports on each CNI. To get the status of a specific CNI port, enter the following information. Entering only STAT CNI gets the status for all CNI ports.</p> <p><b>c</b> = Core number (0 or 1)<br/> <b>s</b> = Slot number (8-12)<br/> <b>p</b> = Port number (0 or 1)</p> <p>If the P is not entered, the status of both ports is printed.</p> <p>If the status is <b>DSBL</b> (Disabled), one or more of the OOS reasons may appear. What actually appears are the numbers associated with the OOS text as follows:</p> <p><b>0</b> = CP local bus parity threshold exceeded.<br/> <b>Action:</b> Contact your technical support group.</p> <p><b>1</b> = CP card HPM time-out threshold exceeded.<br/> <b>Action:</b> Contact your technical support group.</p> <p><b>8</b> = Unconfigured CNI card.<br/> <b>Action:</b> Refer to the <i>administration input/output guide</i>. Use LD7 CEQU to program CNI.</p> <p><b>9</b> = Port has been disabled by craftsman.<br/> <b>Action:</b> Information only. Take appropriate action as required.</p> |  |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

| CNI commands (continued)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Release |
| <b>Status CNI</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |
| <b>STAT CNI c s p</b><br>continued | <p><b>10</b> = Device is not accessible.<br/> <b>Action:</b> Install a CNI card following the steps in the <i>Hardware replacement</i> guide.</p> <p><b>16</b> = CNI to 3PE cable 1 on specified card and port lost.<br/> <b>Action:</b> Check both connector ends of the CNI-3PE cable.</p> <p><b>17</b> = CNI to 3PE cable 2 on specified card and port lost.<br/> <b>Action:</b> Check both connector ends of the CNI-3PE cable.</p> <p><b>18</b> = 3PE power lost.<br/> <b>Action:</b> Check the power supply circuit breakers on the network shelf where the 3PE is located and reset then if required. If the circuit breaker trips replace the power supply card following the steps in the <i>Hardware replacement</i> guide.<br/> If the circuit breaker trips after replacing the power supply card, remove all the cards and reset the circuit breaker. If the circuit breaker trips after all the cards are removed, replace the shelf backplane following the steps in the <i>Hardware replacement</i> guide. If the circuit breaker does not trip after all the cards are removed, replace the Network shelf cards one at a time until the card causing the circuit breaker to trip is found, then replace the card(s) following the steps in the <i>Hardware replacement</i> guide</p> <p><b>19</b> = 3PE has been manually disabled.<br/> <b>Action:</b> Information only. Take appropriate action as required.</p> <p><b>20</b> = CNI card has been manually disabled.<br/> <b>Action:</b> Information only. Take appropriate action as required.</p> |         |

**CNI commands** (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Status CNI**

**STAT CNI c s p**  
continued

**21** = Card test failed.

**Action:** Replace the CNI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**22** = Port test failed.

**Action:** Replace the CNI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**23** = Extender disabled by Meridian 1 initialization.

**Action:** Use ENL CNI to enable the extender.

**24** = Port interrupt line 0 disabled.

**Action:** Contact your technical support group.

**25** = Port interrupt line 1 disabled.

**Action:** Contact your technical support group.

**26** = Port interrupt line 2 disabled.

**Action:** Contact your technical support group.

**27** = Port interrupt line 3 disabled.

**Action:** Contact your technical support group.



**CNI commands (continued)**

| Command                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Release       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Test CNI port</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |
| <b>TEST CNI c s p</b>   | <p>Test the CNI port.</p> <p><b>c</b> = Core number (0 or 1)<br/> <b>s</b> = Slot number (8-12)<br/> <b>p</b> = Port number (0 or 1) If the P is not entered, both ports are tested.</p> <p>This command can test Standby CNIs as well as active CNIs that are out-of-service.</p> <p>This may take a few minutes because of the time required to re-establish memory shadowing and contents. When the command is successful, <b>OK</b> is printed. If it is not successful, an error message is printed.</p> | 51C/61C/81-19 |
| <b>Disable CNI port</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |
| <b>DIS CNI c s p</b>    | <p>Disable the CNI port.</p> <p><b>c</b> = Core number (0 or 1) This must be the standby side. Disable the active side if the CNI is not in service.<br/> <b>s</b> = Slot number (8-12)<br/> <b>p</b> = Port number (0 or 1)</p>                                                                                                                                                                                                                                                                              | 51C/61C/81-19 |
| <b>Enable CNI port</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |
| <b>ENL CNI c s p</b>    | <p>Enable the CNI port.</p> <p><b>c</b> = Core number (0 or 1)<br/> <b>s</b> = Slot number (8-12)<br/> <b>p</b> = Port number (0 or 1)</p> <p>If the P is not entered, both ports, and the card itself are enabled. A port cannot be enabled if the card is disabled. Enabling the CNI card will also enable the 3 Port Extender card.</p>                                                                                                                                                                    | 51C/61C/81-19 |

# CCED

## CNI commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Print CNI ID

|                  |                                                   |               |
|------------------|---------------------------------------------------|---------------|
| <b>IDC CNI s</b> | Print the card ID for the CNI on the active side. | 51C/61C/81-19 |
|------------------|---------------------------------------------------|---------------|

s = Slot number (8-12)

The printout appears in the following format: **x y**

**ppppppppaa rrssss cccccc**

**x** = Core number (0 or 1)

**y** = Slot number (8-12)

**pppppppp** = PEC code

**aa** = Attribute code

**rr** = Release number

**ssss** = Serial number

**ccccc** = Comments (optional)

## CCED messages

### CCED000 No errors detected.

**ACTION:** Information only, no action required.

### CCED001 Invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

### CCED002 Invalid device name.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### CCED003 Extra arguments.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### CCED004 Insufficient arguments.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. You may need to be more specific about the side and slot.

### CCED005 That device is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

**CCED006 That device is already disabled.**

**ACTION:** Ensure that this is the command you wanted to use.

**CCED007 Core side numbers can only be 0 or 1.**

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**CCED008 Invalid slot number.**

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. Slot numbers must be in the range of 8 to 12.

**CCED009 Specified device is not configured, and not responding.**

**ACTION:** Configure the device using the appropriate overlay, and if applicable, re-enter the command. If the device is configured and is seated in the backplane but does not respond, replace the device by following the steps in the *Hardware replacement* guide. After replacing the device verify that the fault is cleared.

**CCED010 Specified device does not respond.**

**ACTION:** If the device is configured and is seated in the backplane but does not respond, replace the device by following the steps in the *Hardware replacement* guide. After replacing the device verify that the fault is cleared.

**CCED011 Specified device is not configured.**

**ACTION:** Refer to the *administration input/output guide*. Use the appropriate overlay to configure the device and re-enter the command.

**CCED012 Unable to make the transition to split mode. The test is aborted.**

**ACTION:** Check the cables on the core module backplane at 14A and 14C for bent pins or improper connections. Run TEST CPU to verify that the system will enter the split mode.

**CCED013 Performing diagnostics.**

**ACTION:** Wait for test completion(s) before continuing.

**CCED014 Test failed because the system is unable to enter Split mode**

**ACTION:** Check cables on the core module backplane at 14A and 14C for bent pins or improper connections. Run TEST CPU to verify that the system will enter the split mode.

**CCED015 Operation failed because the system is only recognizing one CPU.**

**ACTION:** Check the cables on the core module backplane at 14A and 14C for bent pins or improper connections. Check the system for redundancy. First, use STAT CPU to ensure that one CPU is running and the other is in standby; then use STAT in LD 137 to check for CMDU disk redundancy. If the fault does not clear, replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

**CCED016 Invalid operand.**

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**CCED017 Unable to restore redundancy.**

**ACTION:** Check the cables on the core module backplane at 14A and 14C for bent pins or improper connections. Place the active CP into maintenance mode, and Sysload the secondary CP, allowing the prime CP to attempt to synchronize memories.

**CCED018 Secondary side unable to complete test.**

**ACTION:** Check the cables on the core module backplane at 14A and 14C for bent pins or improper connections. Place the active CP into maintenance mode, and Sysload the secondary CP, allowing the prime CP to attempt to synchronize memories.

**CCED020 Cannot enter Split mode when disks are not synchronized.**

**ACTION:** Use SYNC in LD 137 to re-synchronize the hard disks. If you need help with the commands or system responses refer to the *CIOD* chapter in this guide.

**CCED021 Cannot perform SHDW command from CP running call processing.**

**ACTION:** Enter this command from the CPIO port on the secondary CP.

**CCED022 Cannot use SHDW command without using the SPLIT command first.**

**ACTION:** Use the SPLIT command to put the system into single mode.

**CCED023 Cannot perform TEST when primary SIMM is faulty.**

**ACTION:** Use the SCPU command to switch Cores and try again.

**CCED024 Cannot perform TEST when secondary SIMM is faulty.**

**ACTION:** Use the SCPU command to switch Cores and try again.

**CCED025 Command is not applicable to single CPU system.**

**ACTION:** Ensure that this is the command you wanted to use.

**CCED100 Error clearing major alarm.**

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. If this message reappears contact your technical support group.

**CCED101 Unrecognized customer number.**

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 CDB to check the customer number. Check to make sure your customer number data is correct and if applicable, re-enter the command.

**CCED102 Unable to clear the alarm for customer x.**

**ACTION:** Check to make sure your customer number data is correct and if applicable, re-enter the command.

**CCED200 CPU test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED201 SRAM test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED202 HPM test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED203 SRA test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED204 BIC test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED205 CMB test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED207 DUART test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED208 TOD test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED209 PEROM test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED210 LCD test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED211 ASIC ICC test failed.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED212 SIMM number x failed self test.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED213 Operation failed because the system is in maintenance mode.**

**ACTION:** Use STAT CPU to verify that the CP card is not in the maintenance mode and then re-try the command.

**CCED214 Cannot switch Cores (SCPU) because the secondary Core is faulty.**

**ACTION:** Use TEST CPU, TEST IPB, TEST CNI to test the Common Control Complex. Use TEST CMDU, TEST IOP, TEST SCSI in LD 137 to test the Core Multi-drive Unit. Replace any faulty cards, one at a time, following the steps in the *Hardware replacement* guide and verify that the fault is cleared. If this message reappears when trying to switch Cores, contact your technical support group.

**CCED215 Unable to perform switchover.**

**ACTION:** Use TEST CPU, TEST IPB, TEST CNI to test the Common Control Complex. Use TEST CMDU, TEST IOP, TEST SCSI in LD 137 to test the Core Multi-drive Unit. Replace any faulty cards, one at a time, following the steps in the *Hardware replacement* guide and verify that the fault is cleared. If this message reappears when trying to switch Cores, contact your technical support group.

**CCED216 Unable to lockout graceful switchover possibility.**

**ACTION:** Try again. If this message reappears contact your technical support group.

**CCED217 Cannot switch Cores (SCPU) because the core shelf resource is in use.**

A critical core shelf resource was being accessed when the SCPU command was entered.

**ACTION:** Try again. If this message reappears contact your technical support group.

**CCED218 Cannot switch Cores because the standby core resource has a fault.**

One of the standby IPB devices has a fault.

**ACTION:** Use STAT CNI, STAT CPU, and STAT MEM commands to check cards on the Inter-processor Bus. Replace the faulty cards one at a time following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If the fault is not cleared, check the cables on the core module backplane at 14A and 14C for bent pins or improper connections.

**CCED219 Cannot switch Cores (SCPU) because the standby net resource has a fault.**

One of the network shelves has a fault.

**ACTION:** Run LD 30 and LD 45 in the background to help identify network faults. If there are no further network faults and you still cannot switch Cores, use STAT CNI to verify that all CNIs are enabled. Use TEST CNI c s p test for faulty CNIs. Replace any faulty CNIs following the steps in the *Hardware replacement* guide. Use DIS CNI c s p and ENL CNI c s p to disable and re-enable the CNIs, then retry switching the Cores. If the Cores do not switch, contact your technical support group, as it is possible that the database file is in an OOS state.

**CCED220 Cannot switch Cores (SCPU) because the system is not in redundant mode.**

The system is currently running in single mode, so the SCPU command failed.

**ACTION:** Set the active CP Maint/Norm switch to Maint. Set the standby CP Maint/Norm switch to Maint. Press the Man Rst button on the standby CP and then switch the standby CP to NORM. Memories are synchronized when a DONE message appears. Set the active CP switch to Norm. Use STAT CMDU in LD 137 to check if CMDUs are synchronized and, if not, then use the SYNC command.



**CCED221 Cannot SCPU because the memories are not synchronized.**

**ACTION:** Place the Maint/Norm switch on the active CP to Maint, and press the Man Rst button on the standby CPU, allowing the active CP to synchronize memories. Re-enter the command.

**CCED222 Fault found during SCPU. System returned to side x.**

**ACTION:** Use TEST CPU, TEST IPB, TEST CNI to test the Common Control Complex. Use TEST CMDU, TEST IOP, TEST SCSI in LD 137 to test the Core Multi-drive Unit. Replace any faulty cards, one at a time, following the steps in the *Hardware replacement* guide and verify that the fault is cleared. If this message reappears when trying to switch the Cores, contact your technical support group.

**CCED300 Invalid SIMM number.**

**ACTION:** Use STAT CNI to get the SIMM number and re-enter the command.

**CCED304 Memory test successful. All secondary SIMMs enabled.**

**ACTION:** Information only, no action required.

**CCED305 Memories are not synchronized.**

**ACTION:** Wait a few minutes and try again.

**CCED400 Port numbers can only be 0 or 1.**

**ACTION:** Check to make sure your port number is correct and if applicable, re-enter the command.

**CCED401 Cannot disable the CNI when it is active and in service.**

**ACTION:** Use the SCPU command and re-enter the disable command.

**CCED402 The far end extender did not respond and cannot be enabled.**

**ACTION:** Use STAT CNI c s p and TEST CNI c s p to identify the extender. If appropriate, replace the 3PE card or the CNI card or the cable, following the steps in the *Hardware replacement* guide. Verify that the fault is cleared and try again.

**CCED403 Cannot enable the port when the card is disabled.**

**ACTION:** Check that the Enb/Dis switch CNI card faceplate is in the Enb position. Refer to the *administration input/output guide*. Use LD 17 to ensure the CNI card is configured correctly and then re-try the enable command.

**CCED404 Cannot enable a port that does not have a group configured.**

**ACTION:** Refer to the *administration input/output guide*. Use LD 17 to configure a loop for the group before enabling this port.

**CCED405 Cannot test the CNI card that is active and in service.**

**ACTION:** Use the SCPU command to put the CNI card in standby mode and retry the command.

**CCED407 Cannot enable CNI card/port w x y because of reason z.**

For CNI cards, **w** = side and **x** = slot.

For CNI ports, **w** = side, **x** = slot, and **y** = port.

Reason **z** may be one of the following.

**8** = Unconfigured CNI

**9** = Port has been disabled by craftsperson

**10** = Device is not accessible

**16** = CNI to 3PE cable 1 on specified card and port lost

**17** = CNI to 3PE cable 2 on specified card and port lost

**18** = 3PE power lost

**19** = 3PE has been manually disabled

**20** = CNI card has been manually disabled

**21** = Card test failed

**22** = Port test failed

**23** = INI disabled network

**24** = READY interrupt is stuck for this group

**25** = I/O interrupt is stuck for this group

**26** = LINE interrupt is stuck for this group

**27** = CNI maintenance interrupt is stuck for this group

**ACTION:** Replace the faulty CNI card following the steps in the *Hardware replacement* guide. Repeat the command to verify that the fault is cleared.

**CCED408 Will attempt to enable CNI card/port at the next switchover.**

The CNI card or port has been noted as enabled. Because it resides on the standby side, it cannot actually be enabled until the standby side becomes active.

For CNI cards, **w** = side and **x** = slot.

For CNI ports, **w** = side, **x** = slot, and **y** = port.

**ACTION:** Information only, no action required. If the CNI needs to be enabled use the SCPU command.

**CCED409 x loopback data errors on the MSB.**

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED410 Event interrupt 0 test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED411 Event interrupt 1 test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED412 Event interrupt 2 test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED413 Event interrupt 3 test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED414 BIC test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED415 Loopback address errors.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED416 Loopback parity test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED417 Loopback address parity invert errors.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED418 Loopback data errors on LSB.**

x = side (0-1)

y = slot (8-12)

z = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED419 Loopback data errors on MSB.**

x = side (0-1)

y = slot (8-12)

z = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED420 Loopback data parity errors on LSB.**

x = side (0-1)

y = slot (8-12)

z = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED421 Loopback data parity errors on MSB.**

x = side (0-1)

y = slot (8-12)

z = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED422 Event interrupts occurring out of sequence.**

x = side (0-1)

y = slot (8-12)

z = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED423 Event interrupts lost.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED424 Event interrupts time-out test.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED425 Read strobe test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED426 Write strobe test failed.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED427 CNI port x y z a incorrect. Restored.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**a** = EI

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED428 CNI port x y z is in incorrect mode. Restoring to a mode.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**a** = mode

**ACTION:** Replace the CNI card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED429 CNI port x y z remote device (3PE) is not accessible.**

**x** = side (0-1)

**y** = slot (8-12)

**z** = port (0-1)

**ACTION:** Check both connector ends of the CNI-3PE cable. Be sure the 3PE Enb/Dis switch is in the Enb position. Use TEST CNI c s p to check the connections to and from the 3PE card.

**CCED500 IPB IRQ test failed. This may indicate a failure on the CP card.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED501 IPB master arbitration test failed. This may indicate a failure on the CP card.**

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED502 IPB event interrupt failed.**

This may indicate a failure on the CP card

**ACTION:** Replace the CP card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared by running this test again. If this message reappears contact your technical support group.

**CCED503 IPB backplane parity test failed.**

**ACTION:** Contact your technical support group.

**CCED760 Graceful switchover to side x requested.**

**ACTION:** Information only, no action required. This message is normal when using the SCPU command and when LD 135 is included during daily (midnight) routines.

**CCED761 Ungraceful switchover to side x requested.**

**ACTION:** Check for faults on side opposite to side x.

**CCED762 Graceful switchover to side x completed. Previous graceful switchover at <time>.**

**ACTION:** Information only, no action required.

**CCED999 LD135 internal error in file <name> at line <number>.**

**ACTION:** Contact your technical support group.

**CCED1010**

ERDN: SWO denied. Eth.Redundancy feature has already caused a SWO.

**ACTION:** Wait until the ethernet link on the current side becomes reliable: or disable ERDN feature in LD 137 if a switch-over is necessary. 



## CCR — Customer Controlled Routing

Refer to the *maintenance input/output guide* for messages and descriptions.

Refer to ACD Northern Telecom Publications for details. 

# CCR

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## CDM — LD 42 Call Detail Recording

Refer to the *maintenance input/output guide* for messages and descriptions.

Refer to CDR Northern Telecom Publications for details. 

# CDM

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## CED — LD 35 Common Equipment

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Before changing circuit cards, be aware of the procedures outlined in the *Do this when replacing circuit cards*, section found in *Hardware maintenance tools* chapter of this guide

## How the CED works

LD 35 is used to maintain the Central Processing Unit (CPU) and related cards. It can run in the background during the daily routines, or be loaded manually to enter commands. Problems are reported by CED messages.

The CED overlay is used to do the following:

- ◆ clear the maintenance display
- ◆ switch CPUs in dual-CPU systems
- ◆ test the idle CPU in dual-CPU systems
- ◆ display the status of the CPU and buses
- ◆ enable, disable, test and display the status of memory and CMA cards
- ◆ enable, disable and display the status of CE extenders

When loaded during daily routines, memory modules are tested. If there are two CPUs, a CPU switchover is made.

This overlay applies to all systems **except** Options 51C, 61C, 81 and 81C. Refer to LD 135 for Core Common Equipment Diagnostics.

| CED common commands |                                                                           |         |
|---------------------|---------------------------------------------------------------------------|---------|
| Command             | Description                                                               | Release |
| Clear display/alarm |                                                                           |         |
| <b>CMAJ</b>         | Clear major alarm, reset power fail transfer and clear power fault alarm. | basic-1 |
| <b>CMIN ALL</b>     | Clear minor alarm indication on all attendant consoles.                   | basic-1 |
| <b>CMIN c</b>       | Clear minor alarm indication on attendant consoles for customer c.        | basic-1 |

## Omega processor

The processor used in the Option 61, 71, Meridian SL-1NT and XT consists of the Omega Function (FN) and the Omega Interface (IF) card. The FN card acts as a central processing unit and the IF card provides a miscellaneous register capability.

The Option 21 and the Meridian 1 STE use a slightly different processor consisting of a combined CPU, and miscellaneous and memory circuits.

## FN — Function



553-0173T FN(CED)

### Purpose

The Function (FN) card, driven by Meridian 1 software commands, operates the system by providing the control and switching sequences required for the following:

- ◆ call processing — connecting phones and trunks
- ◆ PE processing — on, or off-hook and dialled DNs
- ◆ CE processing — administration and maintenance functions

### Function

The software is loaded into the memory from mass storage upon system power-up, and during system operation the software is fed to the CPU through the CE buses. The SL-1 software is:

- ◆ written as people friendly High Level Source Code, then
- ◆ compiled into Opcode, and placed onto disk, loaded into memory, then
- ◆ assembled into a computer friendly Object or Machine code, which
- ◆ causes the CPU to operate in a sequence of eight states.

The FN card consists of six Am2901 four-bit bipolar microprocess or integrated circuits, capable of handling 24 bit words. The FN card has a fast RAM stack and associated circuitry which includes the following:

**Arithmetic Logic Unit — (ALU)** the main computing hardware of the CPU, performs the following:

- ◆ all manipulation of data
- ◆ addressing of data storage
- ◆ input and output control functions
- ◆ arithmetic or mathematical functions such as;
  - add
  - subtract
  - logic and decision functions such as And, Or, Shift, and Complement.



**Sequencer** — (SEQ) directs the ALU to operate in a sequence of eight states, by providing the ALU with the correct control signals from a Read-Only Memory (ROM). The eight states are:

- ◆ trap
- ◆ fetch (instruction or data)
- ◆ page and word address
- ◆ logic function (number crunching)
- ◆ read write
- ◆ address modification
- ◆ deferred fetch
- ◆ jump

The fetch task is performed by the IF card.

**ROM** — contains an interpreter program which converts the operation code into an object code. An object code is a collection of short instruction sequences or subroutines, used to operate the ALU. An interpreter is used so that hardware can be updated by changing the ROM daughter board, instead of making radical changes to the high level software instructions.

**16 word register file** — is used to hold instructions, data, and addresses. It contains work registers, an instruction counter showing the next instruction to be fetched, a program counter showing the next instruction to be executed, as well as other related information. The result of the executed instruction determines what the next step will be. This is done by allowing the CPU to fetch and execute the instructions in sequence to complete a task or modify the sequence to change the task as the situation warrants, using deferred fetch and jump to new routine.

**Opcode instruction register** — used to load the register file from a stack of instructions. Data transfers and manipulation are accomplished efficiently using a temporary holding area in memory, called a stack. This stack machine is very well suited to call processing, as it allows the CPU to do subroutines and return to its main program, and to move and manipulate data items smaller than a complete word. Data words are stacked upon one another, and are pushed into the stack and popped out of it. The system

has two locations; a main stack, used for data calculations and temporary storage, and a return address stack, which is used to remember the memory location for the next instruction after a subroutine has been executed.

The processors are arranged in a redundant configuration, with one in an active mode and the other in standby mode.

### **Features on FN card**

The Function card faceplate includes a 34 pin ribbon cable connector used for FN and IF control communications.

### **Features on Option 21 and STE/21E**

The Option 21 and STE/21E CPU card face-plate features include the following:

- ◆ An LED, when lit indicates an inactive CPU or a malfunctioning or disabled CPU.
- ◆ The RS button, when pressed, causes the system to reload its software into memory. The system will not process calls until this operation is complete.
- ◆ The CPU cards used with the Option 21 and Meridian SL-1ST, MS, and S are equipped with an SDI port.
- ◆ The Option 21E and STE are equipped with a three element hex display, manual initialize button and a trickle charge circuit for a battery card mounted on the MPS/SDI card.

## IF — Interface



553-0174T IF(CED)

Everything except the FN card(s), IF card(s) and memory is considered an input or output device, and these devices have to interrupt the processor for service.

### Purpose

The IF card miscellaneous registers, continuously monitor the system for interrupt signals and fault indicators. When these occur the FN is informed so that appropriate action can be taken.

A Real Time Clock (RTC) is used to keep track of real time for the FN card which performs functions such as dial timing, and special tones.

The IF will send a HELP signal to the Omega CMA during a watchdog timeout, causing a processor changeover.

### Function

**Interrupt signals** - An interrupt signal is an indication that an input or output device requires service or that there is an input message from the PE waiting to be processed. The FN suspends its workschedule and attends to these requests by executing an Interrupt Handler routine on the following priority basis:

**Tape Handler** — mass storage unit

**I/O Handler** — cards and devices

**Loop Input Intrp Handler** — loop ID, shelf-card-unit ID, messin, time stamp

**Real Time Clock Handler** — real time clock

**Loop Output Handler** — loop ID, shelf-card-unit ID, messout

**Manual Interrupt** — reset or reload button

### Fault Indicators

Faults detected by the IF card are the result of the following conditions:

**Response Timeout** — a memory or input or output device has failed to respond with DUNIT to a read or write signal within 8 ms

**Write Protected Violation** — an attempt was made to write into a protected memory location

**Watchdog Timer Runout** — the FN has lost its sanity and cannot carry out an instruction due to a processor hardware fault or a software malfunction, and subsequently cannot reset the Watchdog timer within 1.024 seconds

**Parity Error** — a single bit parity error has been detected

When a fault is detected, the FN is forced to execute Trap Routine instructions held in the ROM. The fault can be isolated, corrected or a reloading of software and data from the storage device may take place. (For more information on the above process refer to *What the system does when things go wrong*, in the *You should know this* chapter.)

## Features

The Interface card faceplate includes the following features:

- ◆ a LED, when lit indicates an inactive or disabled processor
- ◆ an Enb, Dis switch used to hardware disable the processor
- ◆ a Hex display indicating faulty components
- ◆ a manual initialize button, Man Int. When the Man In is pushed on the active processor will rebuild part of memory and check for CE faults
- ◆ a normal maintenance switch, Norm Maint, used to force the processor active or when updating from one software release to another
- ◆ a 34 pin ribbon cable connector used for FN and IF control communications

## IF (MISC, CPU/MEM) faceplate hex codes

The hex codes are displayed as a result of CE faults. These codes will remain displayed until they are manually removed by diagnostic commands or are overwritten by another CE fault.

The hex code actions are useful when the processor cannot output a SYS or an INI message. If the system outputs a SYS or an INI message, follow that action.

Before you take any action on the following, be sure the displayed hex code is due to an existing fault and not left from a previous fault.

If the faceplate Hex code does not appear in the list below, refer to INI006 hex, in the INI chapter, to locate a specific card.

### 01

1. Manual or power monitor interrupt on an NT, RT, XT, 51, 61, or 71.

**ACTION:** Replace the IF or FN card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Manual interrupt or Power Monitor interrupt on an XN.

**ACTION:** Replace the FN, CT, MISC card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

3. Manual interrupt or Power Monitor interrupt on all other systems.

**ACTION:** Replace the CPU or MISC or PS card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

### 02

1. Peripheral Signal ROM checksum error on an NT, RT, XT, 51, 61, or 71.

**ACTION:** Replace the IF cards, following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Peripheral Signal ROM checksum error on an XN.

**ACTION:** Replace the CIM card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

3. Peripheral Signal ROM checksum error on all other systems.

**ACTION:** Replace the ROM card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### 03

1. Real-time Control (RTC) interrupt fault on an NT, RT, XT, 51, 61, or 71.

**ACTION:** Replace the IF card, following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Real-time Control (RTC) interrupt fault on an XN.

**ACTION:** Replace the CT card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### 04

1. Input Output (I/O) interrupt fault on an NT, RT, XT, 51, 61, or 71.

**ACTION:** Replace the IF card, following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Input Output (I/O) interrupt fault on an XN.

**ACTION:** Replace the MISC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

3. Input Output (I/O) interrupt fault on all other systems.

**ACTION:** Replace the MISC, SDI, TDS or MFS card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

### 05

**ACTION:** Replace the PS card and follow the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**06**

**ACTION:** Replace the MISC, PS or MFS card(s) one at a time. Follow the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**07**

**1.** Real-time Control (RTC) interrupt fault on an NT, RT, XT, 51, 61, or 71.

**ACTION:** Replace the IF cards, following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**2.** Real-time Control (RTC) interrupt fault on an XN.

**ACTION:** Replace the CIM card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**3.** Real-time Control (RTC) interrupt fault on all other systems.

**ACTION:** Replace the ROM card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**08**

Too many initializations on this CPU.

**ACTION:** Contact your technical support group.

**09**

CMA transmission error.

**ACTION:** Replace the primary CMA, secondary CMA or Memory card(s). Follow the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**0A**

CMA transmission error secondary, Memory Trouble Register (MTR) primary is disabled.

**ACTION:** Replace the primary CMA, secondary CMA. Follow the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 0B

CMA transmission error secondary, Memory Trouble Register (MTR) secondary is disabled.

**ACTION:** Replace the secondary MEM, secondary CMA and primary CMA. Follow the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 0C

PS ROM response timeout.

**ACTION:** Replace the CIM, IF card(s) one at a time. Follow the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 0D

Parity error at non-memory address.

**ACTION:** Replace the IF and CMA. Follow the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 0E

Parity error in PS ROM.

**ACTION:** Replace the IF and FN. Follow the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 0F

Trap with no known cause.

**ACTION:** Contact your technical support group.

## 10 to 1A

Memory card fault.

**ACTION:** To clear memory faults refer to the Output code INI004 section of the *INI* chapter of this guide.

## 20

1. Primary memory parity error on read or write on an NT, RT, XT, 51, 61, or 71.

**ACTION:** Replace the CMA and IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.



2. Primary memory parity error on read or write on all other systems.

**ACTION:** Replace the CMA or MISC card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 21

1. Memory parity error - primary or secondary on an XN.

**ACTION:** Replace the prime CMA, or secondary CMA card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Memory parity error - primary or secondary on all other systems.

**ACTION:** Replace the prime CMA, secondary CMA, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 22

1. Cannot clear CMA interrupt on an XN.

**ACTION:** Replace the prime CMA, secondary CMA, or MISC card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Cannot clear CMA interrupt on all other systems.

**ACTION:** Replace the prime CMA, secondary CMA, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 24

Data-store failed to respond when reading trap data block.

**ACTION:** Replace the Memory, CMA, IF, and FN cards following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 23

CMA fault.

**ACTION:** Replace the CMA0 and CMA1 cards following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 25

Checksum failed.

**ACTION:** Replace the Memory, CMA, IF and FN cards following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 40 to 49

Peripheral Signaler card fault.

**ACTION:** To clear PS faults refer to the Output code INI003 section of the *INI* chapter in the guide.

## 50 to 63

Intergroup Switch card fault.

**ACTION:** To clear IGS faults refer to the Output code INI007 section of the *INI* chapter in this guide.

## 70 to 71

Mass Storage Interface card fault.

**ACTION:** To clear MSI faults refer to the Output code INI002 section of the *INI* chapter in this guide.

## 80 to 8F

Serial Data Interface card fault.

**ACTION:** To clear SDI faults refer to the Output code INI002 section of the *INI* chapter in this guide.

## 90 to 1DF

Network loop fault.

**ACTION:** To clear loop faults refer to the Output code INI003 section of the *INI* chapter in this guide.

## E0 to FF

Extender card fault.

**ACTION:** To clear extender faults refer to the Output code INI014 section of the *INI* chapter in this guide.

## 010

1. Sequence, status flag, conditional jump problems on an XN.

**ACTION:** Replace the CT, FN, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Sequence, status flag, conditional jump problems on all other systems.

**ACTION:** Replace the FN, and/or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

#### 011

1. Call, return, micro return address stack problems on an XN.

**ACTION:** Replace the CT, FN, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Call, return, micro return address stack problems on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

#### 012

1. JNI to jump over to next page in ROM failed on an XN.

**ACTION:** Replace the CT, FN, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. JNI to jump over to next page in ROM failed on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

#### 013

1. Micro-store parity on an XN.

**ACTION:** Replace the CT, FN, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Micro-store parity on all other systems.

**ACTION:** Replace the IF card, following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**020**

1. Slice register arithmetic, logic problem on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Slice register arithmetic, logic problem on all other systems.

**ACTION:** Replace the FN, or the IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**021**

1. Sixteen-bit barrel shifter problems on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Sixteen-bit barrel shifter problems on all other systems.

**ACTION:** Replace the FN, IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**022**

1. Sixteen-bit barrel shifter problems with micro-store data on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Sixteen-bit barrel shifter problems with micro-store data on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**023**

1. Write to background while at interrupt level on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Write to background while at interrupt level on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

#### 024

1. Interrupt level did not write its bases on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Interrupt level did not write its bases on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

#### 025

1. Bad data written to some interrupt level bases on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Bad data written to some interrupt level bases on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

#### 026

1. Bad base fetch through BN at some interrupt level on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Bad base fetch through BN at some interrupt level on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**027**

1. Twenty four-bit ALU shifter problem on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Twenty four-bit ALU shifter problem on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**042**

1. CPU write protect failed on an XN.

**ACTION:** Replace the FN, CT, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. CPU write protect failed on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**080**

1. Stuck bits in Y-registers on an XN.

**ACTION:** Replace the CT, FN, IF, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Stuck bits in Y-registers on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**081**

1. Bad PSW register on an XN.

**ACTION:** Replace the IF, MISC, CT, FN, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Bad PSW register on all other systems.

**ACTION:** Replace the IF card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## 082

1. Bad FSI register on an XN.

**ACTION:** Replace the IF, MISC, CT, FN, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Bad FSI register on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 083

1. RAM addressing failure on an XN.

**ACTION:** Replace the FN, IF, CT, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. RAM addressing failure on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## 084

1. Bad stack access at interrupt level on an XN.

**ACTION:** Replace the FN, MISC, CT, IF, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Bad stack access at interrupt level on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**085**

1. Faulty FAR register on an XN.

**ACTION:** Replace the IF, CT, FN, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Faulty FAR register on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**086**

Faulty FSR register.

**ACTION:** Replace the IF, CT, FN, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**087**

1. Read/Write failure on Miscellaneous registers on an XN.

**ACTION:** Replace the MISC, IF, FN, CT, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Read/Write failure on Miscellaneous registers on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**088**

1. Fault during read/write operation while doing CPU tests on an XN.

**ACTION:** Replace the IF, MISC, CT, FN, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Fault during read/write operation while doing CPU tests on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.



**089**

1. PC auto-increment failure on an XN.

**ACTION:** Replace the IF, MISC, CT, FN, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. PC auto-increment failure on all other systems.

**ACTION:** Replace the FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**08A**

1. PS fetch using BIR, not blocked on an XN.

**ACTION:** Replace the MISC, IF, FN, CT, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. PS fetch using BIR, not blocked on all other systems.

**ACTION:** Replace the FN, IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**08B**

1. RTC did not tick or clear on an XN.

**ACTION:** Replace the CIM, MISC, IF, FN, or CT card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. RTC did not tick or clear on all other systems.

**ACTION:** Replace the FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**08C**

1. Bad response time-out in FSI on an XN.

**ACTION:** Replace the IF, CT, FN, MISC, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Bad response timeout in FSI on all other systems.

**ACTION:** Replace the prime FN or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## **08D**

1. Bad data in program store fetch on an XN.

**ACTION:** Replace the IF, MISC, CT, FN, or CIM card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

2. Bad data in program store fetch on all other systems.

**ACTION:** Replace the prime FN, or IF card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## **0FF**

Bad CIM.

**ACTION:** Replace the CIM, IF, MISC, FN, or CT card(s) one at a time, following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

| CPU commands                  |                                                                                                                                                                                                                                               |         |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                       | Description                                                                                                                                                                                                                                   | Release |
| <b>Status of both CPUs</b>    |                                                                                                                                                                                                                                               |         |
| <b>STAT CPUx</b>              | <p>Get status of both CPUs.</p> <p>Responses are:<br/> <b>ENBL</b> = CPU is running<br/> <b>IDLE</b> = CPU is in standby<br/> <b>DSBL</b> = CPU is disabled</p> <p>Not applicable to Meridian SL-1 MS or S.</p>                               | basic-1 |
| <b>Clear display of a CPU</b> |                                                                                                                                                                                                                                               |         |
| <b>CDSP</b>                   | Clear the maintenance display on the active CPU.                                                                                                                                                                                              | basic-1 |
| <b>Display active CPU</b>     |                                                                                                                                                                                                                                               |         |
| <b>DSPL</b>                   | <p>Get contents of maintenance display on the active CPU.</p> <p>If the maintenance display is blank, <b>000</b> is output.</p>                                                                                                               | basic-1 |
| <b>Switch CPU</b>             |                                                                                                                                                                                                                                               |         |
| <b>SCPU</b>                   | <p>Switch CPUs.</p> <p>In a dual CPU system, this command causes the inactive CPU to become the active CPU. If the changeover is successful, <b>OK</b> is output. This command cannot be used when the active CPU is in maintenance mode.</p> | basic-1 |



**CAUTION:** Indiscriminate use of this command should be avoided as system reload may occur.

**CPU commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

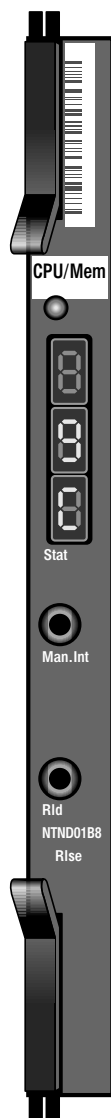
**Test CPU system**

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>SHLF x</b> | <p>Perform memory decode fault test on CPU x.</p> <p>Performs a memory decode fault test on the disabled memories corresponding to the specified CPU (0 or 1).</p> <p>To use this test, disable the memory modules that are to be included in the test and issue the command to the appropriate shelf. If individual tests of memory modules using the MEM command pass but the SHLF test fails on the same modules, then the CMA or controller is probably faulty.</p> | basic-1 |
| <b>TCPU</b>   | <p>Test inactive CPU in a dual CPU system.</p> <p>This command tests the inactive CPU. If the CPU passes, <b>OK</b> is output. This command cannot be used when the active CPU is in maintenance mode.</p>                                                                                                                                                                                                                                                              | basic-1 |



**CAUTION:** Indiscriminate use of this command should be avoided as system reload may occur.

## MEM — Random Access Memory



553-0175T RAM(CEL)

The Meridian 1 Option 21 Random Access Memory (RAM) is based on 64k word memory pages, located on memory modules or cards.

Options 61, 71, NT and XT RAM are based on contiguous memory rather than page memory, and use 24 bits rather than 16 bits.

**Option 61 and SL-1NT** — contain redundant RAM of one 768k memory module for each CPU, or 2Meg module for each CPU running Release 18

**Option 71 and SL-1XT** — contain redundant RAM of three 768k memory modules for each CPU, or maximum two 2Meg modules for each CPU running Release 18

**Option 21** — houses a 768k memory module in the card labelled as MMPS

**Option 21E and SL-1STE** — houses 2Meg of memory in the CPU/Mem card

### Purpose

The memory cards are loaded from a floppy disk with the SL-1 operating programs and provide the fuel to drive the CPU.

### Function

The dynamic RAM or DRAM memory modules are refreshed by a memory controller circuit which generates signals every 15 microseconds while operating the RAM to ensure that the information is not lost.

All cards use 16 or 24 bit address words and one parity bit.

### Features

The faceplate features a LED which, when lit indicates that the module is disabled.

| Memory commands    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Command            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Release  |
| <b>Status</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |
| <b>BATT</b>        | Check status of memory battery backup.<br><br>The response is <b>OK</b> or <b>CED503</b> . Only available on 21E and STE systems with X11 Release 18 and later.                                                                                                                                                                                                                                                                                             | 21e -18  |
| <b>STAT MEM</b>    | Get status of all memory modules.<br><br>This command outputs the number of enabled and disabled memory modules. Use STAT MEM x for status of a specific module.                                                                                                                                                                                                                                                                                            | basic -1 |
| <b>STAT MEM xx</b> | Get status of memory module <b>xx</b> .<br><br>Where <b>xx</b> is a 2-digit number. The first digit specifies which CPU the module is associated with and the second digit specifies the memory module number.<br><br>Responses are:<br><b>ENBL</b> = module is enabled<br><b>ENBL BUT FAULTY</b> = module is enabled but faulty<br><b>REPL</b> = module is replaced<br><b>DSBL</b> module is disabled<br><b>UNEQ</b> = module is missing or not configured | basic -1 |
| <b>Disable</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |
| <b>DIS xx</b>      | Disable memory module <b>xx</b> .<br><br>Where <b>xx</b> is a 2-digit number. The first digit specifies which CPU the module is associated with and the second digit specifies the memory module number.                                                                                                                                                                                                                                                    | basic -1 |

| Memory commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Command                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                  | Release  |
| Enable                      |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| ENL xx                      | <p>Perform memory test on module <b>xx</b>.</p> <p>Performs a memory test on memory module <b>xx</b>. Where <b>xx</b> is a 2-digit number. The first digit specifies which CPU the module is associated with and the second digit specifies the memory module number.</p> <p>The module must not be in use by the system. Dual CPU systems only. System response of <b>OK</b> is output and the module is enabled if the test is passed.</p> | basic -1 |
| REPL xx                     | <p>Enable new memory card <b>xx</b>.</p> <p>Where <b>xx</b> is a 2-digit number. The first digit specifies which CPU the module is associated with and the second digit specifies the memory module number.</p>                                                                                                                                                                                                                              | basic -1 |
| Test                        |                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| MEM xx                      | <p>Test memory module <b>xx</b>.</p> <p>Where <b>xx</b> is a 2-digit number. The first digit specifies which CPU the module is associated with and the second digit specifies the memory module number.</p> <p>The module must be disabled first with the DIS x command.</p> <p>The module does not have to be defined in the Configuration Record (LD 17) to pass the test. System outputs <b>OK</b> if test is passed.</p>                 | basic -1 |

**Memory commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Failure counts**

**FCNT** Get soft failure counts of all memory modules. basic-1

Sample response:

For system options NT, RT, XT, 51, 61 and 71:

| CD | MTR | FCNT |
|----|-----|------|
| 0  | 0   | 0    |
| 0  | 1   | 0    |
| 0  | 2   | 0    |

where:

CD = memory module number

MTR = Memory Trouble Register number on the 768K memory

FCNT = fault counts on that MTR

For all other system options:

| CD | PAGE | LFC | HFC |
|----|------|-----|-----|
| 0  | 0    | 3   | 1   |
| 0  | 1    | 0   | 2   |
| 0  | 2    | 3   | 2   |
| 1  | 5    | 2   | 0   |
| 1  | 6    | 0   | 1   |

where:

CD = memory card number

PAGE = page number

LFC = fault count of low card module

HFC = fault count of high card module

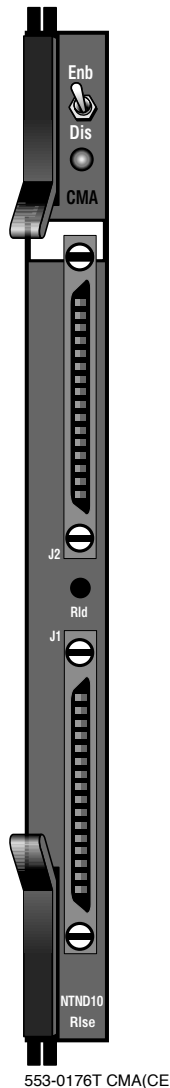
Not applicable to SL-1 MS, S, ST or system Option 21.



**Memory commands (continued)**

| Command                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Release |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>List</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>LDIS</b>              | List disabled memories.<br>Not applicable to SL-1 MS, S, ST or system Option 21.                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |
| <b>LENL</b>              | List enabled memories.<br>Not applicable to SL-1 MS, S, ST or system Option 21.                                                                                                                                                                                                                                                                                                                                                                                      | basic-1 |
| <b>Print</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>IDC ICM,<br/>MSPS</b> | Print card ID for ICM or MSPS card.<br><br>The Integrated CPU with 4Meg Memory (ICM) or Misc/SDI and PS (MSPS) card ID is output in the following format.<br><br><b>ppppppppaa rrssss cccccccc@ddddd</b><br><br><b>pppppppp</b> = PEC code<br><b>aa</b> = Attribute code<br><b>rr</b> = Release number<br><b>ssss</b> = Serial number<br><b>cccccccc</b> = Comments (optional)<br><b>@</b> = HEX 01 ASCII SOH character (non printing)<br><b>ddddd</b> = Design code | 21e-18  |

## CMA — Changeover and Memory Arbitrator



The Changeover and Memory Arbitrator (CMA) is used in redundant CPU configuration on SL-1 N, NT, XT, Option 61 and 71. Two CMA circuit cards are required, and operate in a master-slave relationship. The master CMA card is always associated with the active CPU.

### Purpose

The master CMA updates both the active and standby memories.

The master CMA monitors the active CPU and in the event of a failure can changeover control to the standby CPU.

The master CMA can arbitrate the connection of either memory system to the active CPU through the CMA faceplate cables.

### Function

Both CMA cards combine to keep one CPU active. The master CMA will cause the standby CPU to become active when the following occurs:

- ◆ the active CPU fails to reset a three second timer after a lapse of 24 seconds
- ◆ the software calls for a CPU changeover during the daily or midnight routines
- ◆ neither CPU is active, and the CMA causes the power monitor to activate an emergency transfer

The active CMA has a memory trouble register which will disable either memory card when the following occurs:

- ◆ a data or address parity error is detected
- ◆ response time-out from memory during a read or write attempt fails to set a 10  $\mu$ -sec timer on the CMA

## Features

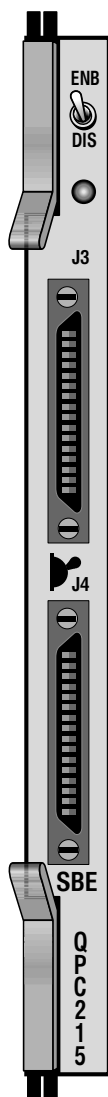
The faceplate includes the following features:

- ◆ ENB/DIS switch used to hardware enable or disable the card
- ◆ LED, when lit indicates a disabled CMA
- ◆ two 50 pin connectors (J3 and J4) used to interconnect the CMAs, extending CPU control to the opposite CE bus
- ◆ RLD button, which when pressed simultaneously on both CMA cards causes a system reload

The CMA cards are slot addressed.

| CMA commands          |                                                                                                                                                                                                                                                                                                     |         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command               | Description                                                                                                                                                                                                                                                                                         | Release |
| <b>Status</b>         |                                                                                                                                                                                                                                                                                                     |         |
| <b>STAT CMA</b>       | Get status of CMA x.<br><br>Response is:<br><b>CMA x ACTIVE y MEM</b> = CMA is being used<br><b>CMA x DSBL</b> = CMA is disabled<br>CMA x ENBL = CMA is enabled but in a standby state<br><br>In some systems a value of "y MEM" is output. Ignore this value. Use STAT MEM to check memory status. | basic-1 |
| <b>Disable device</b> |                                                                                                                                                                                                                                                                                                     |         |
| <b>DIS CMA x</b>      | Disable Changeover and Memory card x.<br><br>This command disables the specified Changeover and Memory (CMA) card. It must be the CMA on the idle CPU and all the memories served by the CMA must be disabled before the CMA can be disabled.                                                       | basic-1 |
| <b>Enable</b>         |                                                                                                                                                                                                                                                                                                     |         |
| <b>ENL SBE</b>        | Enable the Segmented Bus Extender (SL-1 MS only)                                                                                                                                                                                                                                                    | basic-1 |
| <b>ENL CMA x</b>      | Enable Changeover and Memory card x.<br><br>The CMA must be on the idle CPU.                                                                                                                                                                                                                        | basic-1 |

## SBE/QPC496 — Bus extenders



553-0177T SBE(CE)

There are two types of bus extenders:

**QPC215 Segmented Bus Extender (SBE)** — an active device, used with Option 71, multi-group systems, half group SL-1N, and NT, and is optional on SL-1S and MS.

**QPC496 Bus Extender** — a passive device, used in full group SL-1NT.

### Purpose

Bus extenders interconnect the CE bus and the control bus on network shelves, through 3 Port Extenders or network shelf backplane connectors.

### Function

The Segmented Bus Extender performs the following functions:

- ◆ drives address, data and control signals from the CE bus onto the network shelf control bus
- ◆ drives data, interrupts and DUNIT signals from the network shelf control bus onto the CE bus
- ◆ provides fault isolation to protect the CPU from bus faults on multi-group systems

### Features

**QPC496** — faceplate has three 36 pin connectors A, C, and B, used to interconnect the CE and control buses.

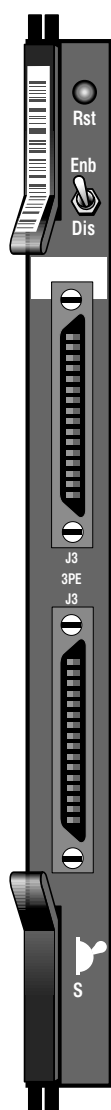
**QPC215** — faceplate includes the following features:

- ◆ a LED, when lit indicates a disabled SBE card or in a multi-group system indicates that the other SBE mate has a driver power problem
- ◆ Enb/Dis switch used to hardware enable or disable the card
- ◆ two 50 pin connectors (J3 and J4) used to interconnect the CE and control buses

A switch on the component side of the card matches the SBE to the group.

The bus extenders are slot addressed.

## 3PE — Three port extender



553-0178T 3PE(CED)

The three ports associated with a full group are as follows:

- ◆ Port A is the 3PE card edge connector which connects the 3PE to the CPU shelf through the network shelf backplane connector and cables to the CPU
- ◆ Port B is the 3PE card edge connector which connects the 3PE to the network shelf backplane
- ◆ Port C is the two faceplate connections between both 3PEs

The three ports used on a half group are as follows:

- ◆ Port A and Port B are the same as for the full group
- ◆ Port C is the two faceplate connection between the 3PE and the SBE

### Purpose

The master 3PE transmits signals between the active CPU and network shelves, and isolates network faults that could adversely affect the total system.

### Function

The 3PE card contains the following circuitry:

**Address Decode** — circuitry which checks to ensure that only cards residing on its network shelf respond to addressing. For example, a network card responding to a memory address is denied access to the CPU bus.

**Disable Register** — allows software to enable or disable either slave 3PE port B or C from the master 3PE.

### Features

The faceplate includes the following features:

- ◆ ENB/DIS switch to hardware enable or disable the card
- ◆ LED, when lit, indicates that the master is 3PE disabled, or the slave 3PE and the port from master 3PE are disabled
- ◆ two connectors (J3 and J4) used to interconnect port C between 3PE cards

Switches on the component side can be set for 3PE located in the following systems:

- ◆ half group LE, N, NT or full and multi-group
- ◆ page 3 address or page 7
- ◆ single group or multi-group systems

The 3PE cards are slot addressed.

#### CE extender commands

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

#### Status

|                 |                                                  |         |
|-----------------|--------------------------------------------------|---------|
| <b>STAT EXT</b> | Get the status of the extender pair designation. | basic-1 |
|-----------------|--------------------------------------------------|---------|

This command outputs the extender pair designation and if disabled indicates the number of devices on the network shelf connected to the extender that would become inaccessible if a CPU changeover occurs.

If the extender has been disabled by using the DIS EXT command, then the number output will be equal to the number of devices on the shelf. The extender pair designations are as follows:

**0G0** = SBE of CPU 0 and 3PE of Network Group 0  
**0G1** = SBE of CPU 0 and 3PE of Network Group 1  
**0G2** = SBE of CPU 0 and 3PE of Network Group 2  
**0G3** = SBE of CPU 0 and 3PE of Network Group 3  
**0G4** = SBE of CPU 0 and 3PE of Network Group 4  
**1G0** = SBE of CPU 1 and 3PE of Network Group 0  
**1G1** = SBE of CPU 1 and 3PE of Network Group 1  
**1G2** = SBE of CPU 1 and 3PE of Network Group 2  
**1G3** = SBE of CPU 1 and 3PE of Network Group 3  
**1G4** = SBE of CPU 1 and 3PE of Network Group 4

| CE extender commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Release |
| <b>Status</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
| <b>STAT EXT x</b>                | <p>Get the status of specified extender.</p> <p>For extenders to network shelves, the response is:</p> <p><b>x &lt;status&gt; &lt;y NET&gt;, where</b></p> <p><b>x &lt;status&gt;</b> = status of extender x, can be one of:</p> <p><b>ENBL</b> = the extender is enabled.</p> <p><b>DSBL</b> = the extender is disabled.</p> <p><b>LEFT DSBL</b> = only shelf 0 of the group served by the extender is disabled</p> <p><b>RIGHT DSBL</b> = only shelf 1 the group served by the extender is disabled</p> <p><b>y NET</b> = the number of network and PS cards that do not respond when accessed using the specified extender. The extender pair designations are as follows</p> <p><b>0G0</b> = SBE of CPU 0 and 3PE of Network Group 0</p> <p><b>0G1</b> = SBE of CPU 0 and 3PE of Network Group 1</p> <p><b>0G2</b> = SBE of CPU 0 and 3PE of Network Group 2</p> <p><b>0G3</b> = SBE of CPU 0 and 3PE of Network Group 3</p> <p><b>0G4</b> = SBE of CPU 0 and 3PE of Network Group 4</p> <p><b>1G0</b> = SBE of CPU 1 and 3PE of Network Group 0</p> <p><b>1G1</b> = SBE of CPU 1 and 3PE of Network Group 1</p> <p><b>1G2</b> = SBE of CPU 1 and 3PE of Network Group 2</p> <p><b>1G3</b> = SBE of CPU 1 and 3PE of Network Group 3</p> <p><b>1G4</b> = SBE of CPU 1 and 3PE of Network Group 4</p> | basic-1 |
| <b>STAT SBE</b>                  | Get the status of the Segmented Bus Extender.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | basic-1 |
| <b>Disable device</b>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
| <b>DIS EXT x</b>                 | <p>Disable the specified extender pair.</p> <p>This command disables the extender pair specified by x. Only extenders on the nonactive CPU may be disabled. The extender is marked as unusable by the system and it will not attempt to use it, i.e., a CPU changeover will not be permitted.</p> <p>LEDs on the card faceplate do not reflect this command.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | basic-1 |
| <b>DIS SBE</b>                   | Disable the Segmented Bus Extender.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | basic-1 |

# CED

## CE extender commands (continued)

| Command          | Description                                                                                                                                                                                                                     | Release |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Enable</b>    |                                                                                                                                                                                                                                 |         |
| <b>ENL EXT x</b> | Enable specified extender pair.<br><br>Only extenders on the nonactive CPU may be enabled. See introduction for extender designations.<br><br>The state of the LED on the circuit card faceplate does not reflect this command. | basic-1 |
| <b>ENL SBE</b>   | Enable the Segmented Bus Extender (SL-1 MS only).                                                                                                                                                                               | basic-1 |

## CED messages

### CED000

No errors detected.

**ACTION:** Information only, no action required.

### CED001

An invalid number of characters are entered in the command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### CED002

An invalid character is entered in the command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### CED003

An invalid command is entered.

**ACTION:** Ensure that this is the command you wanted to use.

### CED004

Incorrect number of arguments.

**ACTION:** Check to make sure your data is correct and re-enter the command.



**CED005**

Invalid argument.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**CED010**

Memory number out-of-range. The allowable range depends on the system type.

**ACTION:** Check to make sure your data is correct and re-enter the command. If you need help refer to the *Random access memory* section in this chapter.

**CED011**

The specified card is active and may not be tested.

**ACTION:** Indiscriminate use of the following command may cause a system reload to occur. Use SCPU to switch the CPUs, this will change the specified card to standby mode.

**CED012**

The memory test on a specified card failed. The memory card can have a fault. Start at the first or most likely cause and go down the list until the fault is cleared.

The following is a list of possible faulty cards:

**1.** Memory cards.

**ACTION:** Replace the memory card(s) following the steps in the *Hardware replacement* guide. Run the test again to see if this message reappears. If it reappears try the next card on the list.

**2.** Changeover and Memory (CMA) card.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. Run the test again to see if this message reappears. If it reappears try the next card on the list.

**3.** Miscellaneous (MISC) card.

**ACTION:** Replace the MISC/IF card following the steps in the *Hardware replacement* guide. Run the test again to see if this message reappears. If it reappears contact your technical support group.

## CED013

CED013 is a duplicate of CED012.

**ACTION:** See the action of CED012.

## CED014

The Watchdog timer failed to time out. There is a probable fault on the MISC card or the IF card in the active CPU. Start at the first or most likely cause and go down the list until the fault is cleared.

The following is a list of possible faulty cards:

1. MISC or Interface (IF) card.

**ACTION:** Replace the MISC or IF card(s) following the steps in the *Hardware replacement* guide. If this message reappears try the next card on the list.

2. CPU card or Function (FN) card.

**ACTION:** Replace the CPU or IF card following the steps in the *Hardware replacement* guide. If this message reappears contact your technical support group.

## CED015

The Memory card passed the test but is not in the configuration record. If the module is supposed to be in the system, check the configuration record.

**ACTION:** If the module is supposed to be in the system, refer to the *administration input/output* guide. Use LD 17 to program the card into the configuration record and follow steps required to have added a new memory card (system reload).

## CED016

The specified spare is not on the active CPU and may be tested.

**ACTION:** Information only, no action required.

## CED017

Spare number must be 0 or 1. Only relevant for the SL-1VL, L and M.

**ACTION:** Refer to the *administration input/output* guide. Use LD 22 to check the CFN record, then re-enter the command.

**CED021**

The spare R/W memory is not switched in for the card you wish to replace. Only relevant for the SL-1 VL, L and M.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 to check the CFN record, then re-enter the command.

**CED022**

The spare R/W memory card is being used by the system. Only relevant for the SL-1 VL, L and M.

**ACTION:** Information only, no action required.

**CED023**

The card number of the spare is not between 32 and 47 inclusive. Only relevant for the SL-1 VL, L and M.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 to check the CFN record, then re-enter the command.

**CED024**

Memory card could not respond to ENL N command because the soft-memory-failure threshold was exceeded. The ENL N command, used on SL-1, single memory redundant CPU equipment. Only relevant for SL-1L.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED030**

The extender is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

**CED031**

The near-end extender did not respond and therefore cannot be enabled. Suspect a faulty near-end extender.

**ACTION:** Replace the SBE card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

## CED032

The far end extender did not respond and therefore cannot be enabled. Start at the first or most likely cause and go down the list until the fault is cleared.

1. Suspect a faulty far end extender.

**ACTION:** Replace the 3PE card following the steps in the *Hardware replacement* guide. Run test again to see if this message reappears. If it reappears try the next card on the list.

2. The near end extender may be faulty as well.

**ACTION:** Replace the SBE card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

## CED033

The extender to the Intergroup Switch (IGS) through and the Junctor is not a Segmented Bus Extender (SBE) and therefore cannot be enabled. Only relevant for the SL-1 VL or VLE.

**ACTION:** Check and re-enter the command.

## CED034

The extender to the IGS through the Junctor did not respond and therefore cannot be enabled. Suspect a faulty extender.

**ACTION:** Replace the SBE card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

## CED035

The SBE is not configured.

**ACTION:** If the SBE card is supposed to be in the system, refer to the *administration input/output guide*. Use LD 17 to program the card into the configuration record.

## CED036

The SBE is already disabled.

**ACTION:** Ensure that this is the command you wanted to use.

**CED037**

The SBE is unequipped or is equipped and disabled.

**ACTION:** If the SBE card is unequipped, insert an SBE card into the proper card slot. If equipped and disabled, replace the SBE card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

**CED038**

The SBE is enabled but not configured.

**ACTION:** If the SBE card is supposed to be in the system, refer to the *administration input/output guide*. Use LD 17 to program the card into the configuration record.

**CED039**

The SBE could not be enabled.

**ACTION:** Replace the SBE card following the steps in the *Hardware replacement* guide. Check to see if cable is installed properly. Verify that the fault is cleared.

**CED050**

Specified customer does not exist.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**CED059**

System does not have two CPUs.

**ACTION:** Check to make sure that you are working on a single CPU system. Check that your data is correct and then re-enter the command.

**CED060**

CMA card did not respond. Probable fault on CMA card associated with non-active CPU.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

**CED061**

A CE bus is disabled and the CPU cannot be changed. Suspect a probable bus fault.

**ACTION:** Replace the CE shelf backplane following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

## CED062

A spare has replaced a disabled card.

**ACTION:** Information only, no action required.

## CED063

CPU changeover disallowed because the associated Peripheral Signaling (PS) card providing the real time clock is disabled.

**ACTION:** Use ENPS x in LD 32 or LD 39 to enable the PS card before using SCPU. If you need help with the commands or system responses refer to the *NPR* or *IGS* chapter in this guide.

## CED065

Cannot use TCPU or SCPU commands when the active CPU is in maintenance mode. In this case, x indicates the inactive CPU, or: CPU x has failed.

**ACTION:** Place the faceplate MAINT/NORM switch to NORM on the active CPU and re-enter the command. If this message reappears, replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED066

CPU is in maintenance mode and an attempt is made to TCPU or SCPU in LD 35. Changeover card did not respond. Faulty CMA card on nonactive CPU.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED067

Changeover card did not respond. Requested function could not be performed. Faulty CMA card.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED068

Only extenders on the idle CPU may be enabled or disabled.

**ACTION:** Check to make sure you are working on the correct CPU and re-enter the command.

**CED069**

Extenders are not equipped.

**ACTION:** Refer to the *administration input/output guide*.

Use LD 22 to check the CFN record for extenders, then re-enter the command.

**CED070**

1. Cannot perform CPU changeover because some loops, PS cards or Intergroup Switch cards do not work on the other CPU. An extender fault on the second CPU is suspected.

**ACTION:** Use the STAT EXT command to determine which extender is faulty. Replace the SBE or 3PE card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

2. Receiving this message, and cannot perform a test or swap CPU command on an Option 71 system.

**ACTION:** Verify that all CPU related cards, such as, the CMA, SBE, 3PE and memory cards are enabled.

**CED071**

1. Cannot switch CPUs because a section of memory does not work on the other CPU. Suspect CMA card.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Receiving this message after upgrading to Release 19.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 CFN to check the configuration record for MTYP. It should be 2M or 4M and not 768. Use LD 17 to correct. Verify that the newly installed CMA (NTND10) is jumpered correctly, to allow for the new expanded memory card.

**CED072**

Cannot switch CPUs because spare memory is faulty. Suspect the CMA card.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED073

Cannot perform CPU changeover because the tape interface on the other CPU does not work.

**ACTION:** Replace the tape interface card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED074

Cannot switch CPUs because the other CPU has a stuck interrupt or faulty real time clock.

**ACTION:** Replace the MISC or IF card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED075

Cannot switch CPUs because the other CPU is faulty.

**ACTION:** Replace the MISC, IF card, CPU or FN card(s) one at a time following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

## CED080 xx

Spare memory card number **xx** has failed.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED081 x

The spare R/W memory on CPU **x** failed the daily memory test. The spare 16K memory failed the daily checksum verification test on the spare I/C row. Only relevant for SL-1M.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED082

No attempt was made to perform CPU changeover during midnight routines because of an uncleared fault.

**ACTION:** Use TCPU or STAT CMA command to determine if the CPU or extender is at fault. Replace the MISC or IF, CPU or FN and CMA cards one at a time following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.



**CED083**

The spare on the CPU that was active at the time of test, failed daily memory test.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED085**

The shelf number is not zero or one.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**CED086**

The shelf memory decode test failed. Test each Memory card individually using the MEM command. If all cards work but consistently fail the SHLF test, suspect the CMA or Memory cards. Only relevant for SL-1LE and VLE and XL.

**ACTION:** Replace the CMA or Memory card following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**CED087**

No test was performed as no cards are disabled on the specified shelf.

**ACTION:** Check the data and disable the cards to be tested on the shelf.

**CED088**

The memory card may not be enabled because the associated CMA card is not enabled.

**ACTION:** Use the ENL CMA command to enable the CMA. Try the test again.

**CED089**

The CMA may not be disabled because the associated memory is not disabled.

**ACTION:** Use the DIS command to disable all the associated memory.

## CED090

You are not allowed to enable modules between 32 and 47, except for spares. Only relevant for SL-1VL, L and M.

**ACTION:** Refer to the *administration input/output guide*.

Use LD 22. To check the CFN record, then re-enter the command.

## CED091

The module is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

## CED092

The module is not equipped and therefore cannot be enabled.

**ACTION:** Check to make sure your data is correct. If the data is correct, you may have to install the module.

## CED093

The card is a spare which has been used to replace a faulty card.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## CED094

The card has failed the memory test. Suspect a probable fault on the memory card. Start at the first or most likely cause and go down the list until the fault is cleared.

The following is a list of possible faulty cards:

### 1. Memory cards.

**ACTION:** Replace the memory card(s) following the steps in the *Hardware replacement* guide. Run the test again to see if this message reappears. If it does reappear try the next card on the list.

### 2. Changeover and Memory (CMA) card.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. Run the test again to see if this message reappears. If it does reappear try the next card on the list.

### 3. Miscellaneous (MISC) card.

**ACTION:** Replace the MISC/IF card following the steps in the *Hardware replacement* guide. Run the test again to see if this message reappears. If it does reappear contact your technical support group.

#### CED095

The spare QPC30 card is required by the system. This module contains programs and may only be enabled by the REP command or a system reload. Only relevant for SL-1L.

**ACTION:** Enabled by the REP command and do a system reload.

#### CED096

Card may not be disabled because the corresponding card of the redundant configuration is disabled.

**ACTION:** Enable the corresponding card.

#### CED097

The CMA number is not 0 or 1.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

#### CED098

The CMA on the active CPU may not be enabled or disabled.

**ACTION:** Use the SCPU command to perform CPU changeover so that the CMA is no longer on the active CPU.

#### CED099

The CMA failed to respond and therefore may not be enabled. Suspect a faulty CMA. The CMA on the active processor may also be faulty.

**ACTION:** Replace the CMA cards one at a time following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

#### CED100 pg cpu xxxx

The read and write Memory Trouble Register (MTR) bits were different. The card will be disabled. Suspect CMA card.

**pg** = the page that had the problem. This problem could be in the card on shelf 0 or 1. “pg” is only printed for NT, RT, and XT systems. The “page” information can be ignored.

**cpu** = CPU that was active when the problem occurred.

**xxxx** = m1m2m3m4, where m1m2 is the old contents of Memory Trouble Registers (MTR) for the page; m3m4 is the new contents of MTR for the page.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED101 pg cpu xxxx**

Memory unequipped but MTR is not set. The MTR will be written to disable the card. If the memory is not equipped, suspect CMA card. Refer to CED100.

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED102 mem cpu xxxx**

The memory card should have been disabled but the MTR said it was enabled.

**mem** = memory card that had the fault.

**cpu** = CPU that was active when the problem occurred.

**xxxx** = m1m2m3m4, where m1m2 is the old contents of Memory Trouble Registers (MTR) for the page; m3m4 is the new contents of MTR for the page.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED103 mem mtr xxxx**

The indicated memory card has failed and is disabled. The card indicated may be faulty.

**mtr** = Memory Trouble Register. One MTR is allocated for every 768K memory type, or every 1 meg for 1MWG/2MEG memory types.

If the CED103 message continues with random memory failure, a faulty CMA card may be the cause. Replace faulty CMA card. Refer to CED102.

**ACTION:** Test the card manually using ENL xx. The card is to be replaced only after failing this test. Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED104 cma cpu 0000**

The specified CMA failed to respond. The CMA that failed to respond is probably faulty.

**cma** = the CMA that failed

**cpu** = the active CPU when the fault occurred

0000 = always 0000

**ACTION:** Replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED105 cpu count**

Invalid interrupts are occurring. Possible fault occurs on both CPUs, suspect a faulty card on a network shelf.

**cpu** = CPU that was active when the problem occurred.

**count** = number of invalid interrupts which have occurred in the last 30 seconds.

**ACTION:** Use the STAT loop in LD 32 to test the superloop. Use ENLL 1 in LD 32 to enable the loops and run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the Network card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

**CED106 p la ha**

Soft memory failure has been recorded against memory card **p**. The number of failures now recorded against the low address range of the card **la** and the number of failures now recorded against the high address range **h**).

**ACTION:** Replace the Memory or CMA card following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**CED107 p la ha**

Hard memory failure has been recorded against memory card **p** because the fault count has exceeded the hard-failure threshold. The current number of failures now recorded against the low address range of the memory card **la** and the high address range **ha**.

**ACTION:** Replace the Memory or CMA card following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**CED108 p**

Single bit fault on memory card **p**.

**ACTION:** Replace the Memory or CMA card following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**CED109 p**

Memory fault on card **p**.

**ACTION:** Replace the Memory or CMA card following the steps in the *Hardware replacement* guide. After replacing each card verify that the fault is cleared.

**CED110**

Upper write protect boundary is incorrect. Choose hardware value.

**ACTION:** Contact your technical support group for guidance. To perform a parallel reload, refer to the *Software Conversion Procedures* guide and perform a parallel reload.

**CED111**

Upper write protect boundary is incorrect. Choose hardware value.

**ACTION:** Contact your technical support group for guidance. To perform a parallel reload, refer to the *Software Conversion Procedures* guide and perform a parallel reload.

**CED112**

Both hardware and software upper write protect boundaries are incorrect.

**ACTION:** Contact your technical support group for guidance. To perform a parallel reload, refer to the *Software Conversion Procedures* guide and perform a parallel reload.

**CED113**

Hardware lower write protect boundary is incorrect.

**ACTION:** Contact your technical support group for guidance. To perform a parallel reload, refer to the *Software Conversion Procedures* guide and perform a parallel reload.

**CED114**

Upper write protect boundary is incorrect. Choose hardware value.

**ACTION:** Contact your technical support group for guidance. To perform a parallel reload, refer to the *Software Conversion Procedures* guide and perform a parallel reload.

**CED115**

The masked software upper write protect boundary value falls below Z\_SOFT\_P\_BND. Attempting to correct value by adding 4K.

**ACTION:** Contact your technical support group.

**CED116**

Updated value exceeds the Z\_SOFT\_U\_BND. Attempting to determine the high write protect boundary from the linked list.

**ACTION:** Contact your technical support group.

**CED117**

FATAL: (The system has stopped processing calls). Invalid write protect boundaries. Attempts to correct boundaries failed.

**ACTION:** Contact your technical support group for guidance. To perform a parallel reload, refer to the *Software Conversion Procedures* guide and perform a parallel reload.

**CED200 p1 p2 pn**

The CED found those memory cards listed as disabled, partially disabled or some segments within the card disabled, during the midnight routines.

**ACTION:** Use DIS xx to disable the memory card(s) then use MEM xx or ENL xx to perform a memory test. If applicable, replace the memory card(s) following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED201 cpu pg addr pf sf**

A memory failed while the primary and secondary were being compared. These fields contain the same data as the fault code field 1 in the INI000 message (see INI error codes). This problem could be in the card on shelf 0 or 1. PG is only printed for NT, RT, and XT systems.

**cpu** = CPU that was active when the problem occurred

**pg addr** = failed memory location

**pf** = prime fault

**sf** = secondary fault

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED202 cpu pg addr pd sd**

The data in the primary (pd) and secondary (sd) differed at the specified address. This error can result when a double bit error occurs in a word in a memory. If the fault occurred in a data store, CED will cause a Fault Code 0012 (second field) initialize to clear up the data.

**cpu** = CPU that was active when the problem occurred

**pg addr** = failed memory location

**pf** = prime fault

**sf** = secondary fault

1. If a CED203 occurs for the same page, the primary is suspect.

**ACTION:** Use DIS xx to disable the memory card(s) associated with the active CPU, then use MEM xx or ENL xx to perform a memory test. If applicable, replace the memory card(s) following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If a CED203 does not occur, suspect the secondary. If the fault occurred in a protected data store or firmware store and the contents of the primary module are correct (for instance the checksum is successful) the primary will be copied into the secondary.

**ACTION:** Use DIS xx to disable the memory card(s) associated with the nonactive CPU, then use MEM xx or ENL xx to perform a memory test. If applicable, replace the memory card(s) following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED203 cpu pg**

The checksum failed on the specified page. This means that the program or data stored in the memory is incorrect. If the page is protected data store, datadump will be inhibited because the integrity of the data cannot be guaranteed. If the page is a protected data page, data dump may be prevented.

**cpu** = CPU that was active when the problem occurred.

**pg** = the page that had the problem.

**ACTION:** Investigate and clear any SYSxxx messages which may appear concurrently with this message, then attempt to data dump onto a second copy of the storage medium. Use EDD CLR in LD 43, then reload from the new copy to check that the data is now valid. If this is done after a reload, the only further cause would be



CED203. On dual-memory machines, use ENL xx on the indicated memory card to test and re-enable (the data will be copied from the other memory). If this fails again (or for single memory machines), use EDD CLR in LD 43 to dump the data to a second copy of the storage medium, then reload and check any SYS or INI errors for possible data corruption. Refer to LD 43, message EDD016 for further information.

**CED204 cpu memory**

The memory card was tested at midnight and failed. Refer to the CED207 description.

**cpu** = CPU that was active when the problem occurred.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED205 cpu mem**

The memory card was tested at midnight and passed. The card was enabled. If the secondary was disabled, an attempt will be made to enable it. The card may have an intermittent fault.

**cpu** = CPU that was active when the problem occurred.

**ACTION:** Use DIS xx to disable the memory card(s) associated with the nonactive CPU, then use MEM xx or ENL xx to perform a memory test. If applicable, replace the memory card(s) following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED206 cpu cma**

The CMA failed when the midnight routine tried to enable it. No further memory testing will be done.

**cpu** = CPU that was active when the problem occurred

**cma** = Changeover and Memory Arbitrator card

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The CMA card could be faulty.

**ACTION:** Replace the CMA card associated with the CPU indicated in this message, following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. The CMA cable could be faulty.

**ACTION:** Replace the inter-CMA cable following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

3. The other CMA card could be faulty.

**ACTION:** Replace the CMA card associated with the opposite CPU as indicated in this message, following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CED207 cpu cma**

The CMA was successfully re-enabled by the midnight routine. Interpretation of data accompanying CED100 to 207 is:

**pg** = the page that had the problem. This problem could be in the card on shelf 0 or 1. "pg" is only printed for NT, RT, and XT systems. The "page" information can be ignored.

**cpu** = CPU that was active when the problem occurred

**cma** = Changeover and Memory Arbitrator card

**ACTION:** If applicable, replace the CMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CED300**

A temporary module is not equipped or is faulty. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 to check the CFN record. Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CED301**

Replaced module is not equipped or is faulty. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 to check the CFN record. Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED302**

Specified module has not been spared. One of the system memory modules is faulty. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED303**

Spare is disabled. Module 0 should be replaced. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED304**

Spare is in use. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Information only, no action required.

**CED305**

Spare failed memory test. Replace module 0. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Replace the memory card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED306**

The specified module has not been replaced by the temporary module. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Information only, no action required.

**CED307**

The temporary module is in use. Only relevant for SL-1LE, VLE, A, XL, and M.

**ACTION:** Information only, no action required.

**CED401**

Cannot determine which CPU is active.

**ACTION:** Use STAT CMA to determine which CPU or CMA is active.

## **CED402**

System Clock must be switched before proceeding.

**ACTION:** Use SCLK in LD 39 to switch the System Clock. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

## **CED403**

The specified System Clock Generator (SCG) is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## **CED404**

The specified System Clock Generator (SCG) is not responding.

**ACTION:** Use SCLK in LD 39 to switch the System Clock. If you need help with the commands or system responses go to the *IGS* chapter in this guide.

## **CED405**

The specified System Clock Generator (SCG) is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

## **CED406**

The idle CPU must be switched in as the active CPU before proceeding with the command.

**ACTION:** Use SCPU in the *IGS* chapter to switch the CPU.

## **CED407**

Intergroup Switch is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## **CED408**

Intergroup Switch is not responding.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. If the data is correct, replace the IGS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CED409**

The specified Intergroup Switch is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

**CED410**

Only one DISI IGS is allowed at a time.

**ACTION:** Be patient, you are inputting commands faster than the system can handle them.

**CED411**

DISI IGS command is completed.

**ACTION:** Information only, no action required.

**CED412 c**

System Clock c cannot be switched to replace the presently active clock.

**ACTION:** If appropriate, replace the System Clock card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CED450**

Invalid command for single CPU systems.

**ACTION:** Ensure that this is the command you wanted to use.

**CED502**

That command is only valid for system Option 21 with X11 Release 18 and later.

**ACTION:** Ensure that this is the command you wanted to use.

**CED503**

1. The battery test failed.

**ACTION:** Replace the battery per steps in the *Hardware replacement guide*. Use BATT to retest. If the test does not pass, replace the MSPS card per steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

2. Receiving this message after installing or upgrading to an OPT21E or STE. The battery may have been installed incorrectly or is missing.

**ACTION:** Check the MSPS (NTND02) card for correct battery installation.

**CED504**

The battery is not configured.

**ACTION:** If a battery is present on the MSPS (NTND02BA) refer to the *administration input/output guide*. Use LD 17 prompt BATT to Yes before doing a BATT test.

# CED

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### **CED505**

That command is not valid for system Option 21.

**ACTION:** Ensure that this is the command you wanted to use. 

## CIOD — LD 137 Core Input/Output

### In this chapter

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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter.

## How the CIOD works

LD 137 provides IOP and CMDU related diagnostic and maintenance information for Options 51C/61C/81 machines. Some commands in LD 37 can also be used. Refer to that program.

LD 137 provides a means of performing the following functions:

- ◆ enabling and disabling the CMDU and IOP cards
- ◆ displaying status and card ID for CMDU and IOP cards
- ◆ testing the IOP and CMDU (the hard and floppy disk drives are tested)
- ◆ testing individual disk drives
- ◆ enabling and disabling disk redundancy
- ◆ testing SCSI cable connections between IOPs and CMDUs
- ◆ testing disk synchronization on file or sector levels
- ◆ during midnight routines performs DATA CMDU, DATA RDUN commands

**Note:** The DATA CMDU and DATA RDUN midnight routines are run every five days.



**CIOD common commands****Status****STAT**

Get the status of both IOPs and CMDUs.

51C/61C/81-19

For the IOP, the Enabled or Disabled, and Active or Standby state is printed. Status is given for active and standby IOPs.

For the CMDU, Disk redundancy, enabled/disabled, and active/standby status are printed.

**Note:** The status given for the standby IOP is a software status as it was last seen when that IOP was active. No hardware status is given because the standby IOP cannot be accessed.

If the status of the IOP or CMDU is disabled, one of the following OOS messages may appear on the maintenance terminal as follows:

**ASIC interrupt fault monitor threshold exceeded**

**Action:** Contact your technical support group.

**CMDU does not respond, the disk drive may be missing**

**Action:** Be sure CMDU power is on and the IOP to IOP cable is in place.

**CMDU has been disabled by the craftperson**

**Action:** Information only, take appropriate action as required.

**CMDU is disabled because the IOP is Out-of-Service**

**Action:** Contact your technical support group.

**CMDU is in split mode**

**Action:** Information only, take appropriate action as required.

---

**CIOD common commands** (continued)

---

**STAT**

(continued)

**CMDU is out of split mode**

**Action:** Information only, take appropriate action as required.

**CMDU Out-of-Service**

**Action:** Contact your technical support group.

**CMDU status is mismatched because of a software error**

**Action:** Contact your technical support group.

**CMDUs are not synchronized**

**Action:** Information only, take appropriate action as required.

**Fault interrupt fault monitor threshold exceeded**

**Action:** Contact your technical support group.

**General event interrupt fault monitor threshold exceeded**

**Action:** Contact your technical support group.

**Hard disk drive error**

**Action:** Contact your technical support group.

**Hard disk is inaccessible**

**Action:** Be sure CMDU power is on and the IOP to IOP cable is in place.

**Hard disk read error**

**Action:** Contact your technical support group.

---

**CIOD common commands** (continued)

---

**STAT**

(continued)

**Hard disk write error****Action:** Contact your technical support group.**IOP disabled by craftperson****Action:** Information only, take appropriate action as required.**IOP not responding****Action:** Check that the IOP enable/disable switch is in the enable position (up). If the IOP does not respond after enabling it, reseal the IOP card. If the card does not respond after resealing, replace the IOP card by following the steps in the Hardware replacement guide.**IOP Out-of-Service****Action:** Contact your technical support group.**IOP responding but cannot be enabled****Action:** Contact your technical support group.**No access to hard disk (HDK)****Action:** Be sure CMDU power is on and the IOP to IOP cable is in place.**Processor exception fault monitor threshold exceeded****Action:** Contact your technical support group.**Unexpected interrupt fault monitor threshold exceeded****Action:** Contact your technical support group.

# CIOD

## CIOD common commands (continued)

**STAT**  
(continued)

**Unrecognized error fault monitor threshold exceeded**

**Action:** Contact your technical support group.

### Print

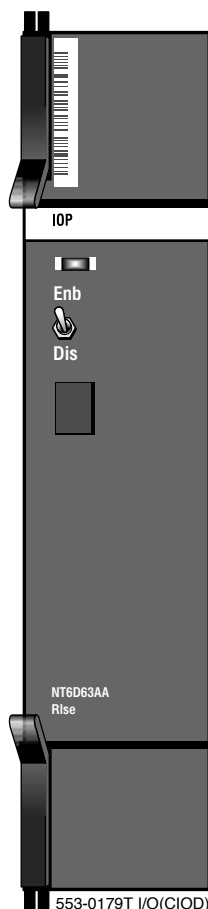
**IDC** Print the IDs of both CMDUs and the active IOP. 51C/61C/81-19  
The printout appears in the following format:  
**pppppppppp rrssss cccccccc**  
**pppppppppp = PEC code**  
**rr** = Release number  
**ssss** = Serial number  
**ccccccc** = Comments (not always present)

### Test

**TEST SCSI** Test the SCSI cables. 51C/61C/81-19  
This test ensures the cable connections between the IOPs are present. Access to the CMDUs is tested as well.  
If the test is successful, **OK** is printed.  
If the test is unsuccessful, CIOD messages are printed to indicate the problem.

**TTY x** Test TTY x 51C/61C/81-19  
Response is:  
**ABCDEFGHIJKLMNOPQRSTUVWXYZ**  
**0123456789"#\$%\*!&()<>-.:,.?**  
**READY FOR INPUT**  
Anything entered on the keyboard will be echoed until **END** is input.

## IOP — Input/Output Processor



### Purpose

The IOP loads the programs and office data into the system memory.

### Function

The IOP interfaces the Core Multi-drive Unit or CMDU, a serial device, to the CP, a parallel device.

The IOP provides the interface between the CP and the CMDU via a SCSI bus interface, and utilizes a Motorola 68020 microprocessor.

The IOP card provides address matching, disk drive control, data buffering, and interrupt control circuits.

The IOP and CMDU are combined into one card on the Option 81C.

### Features

The IOP face plate includes the following features:

- ◆ a hex display for IOP status codes
- ◆ a LED which flashes three times to indicate a passed self-test, and when steadily lit, indicates a disabled IOP.

## IOP faceplate hex codes

The NT6D63 I/O Processor (IOP) card provides hexadecimal displays to indicate various phases of operation and the state of the card during those phases.

Assembly level initialization and basic card self-tests are noted on the HEX display by decimal points appearing to the left of the HEX code.

High level code initialization and card self-tests have the decimal point to the right of the code to indicate they are taking place.

Card operation is indicated by the alternating decimal points.

## Assembly level initialization and basic card self-test messages

### .0.

LED on. Bootstrap code on power up.

**ACTION:** Information only, no action required.

### .1

LED on. ROM checksum for self-test 1.

**ACTION:** Information only, no action required.

### .1/.E.

LED on. ROM checksum self-test 1 failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### .2

LED on. SRAM self-test. Card LED is on for self-test 2.

**ACTION:** Information only, no action required.

### .2/.E.

LED on. SRAM self-test 2 failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**.3.**

LED on. IOP debugger initialization.

**ACTION:** Information only, no action required.

**.3/.E.**

LED on. IOP debugger initialization failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**.3**

LED on. Processor self-test 3.

**ACTION:** Information only, no action required.

**.3/.E.**

LED on. Processor self-test 3 failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**.4**

LED on. BIC Initial Condition Check, self-test 4

**ACTION:** Information only, no action required.

**.4/.E.**

LED on. BIC Initial Condition Check, self-test 4 failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**.8**

LED on. Assembly level copying ROM to RAM, and miscellaneous initialization setup.

**ACTION:** Information only, no action required.

**.D.**

LED on. 3 second window to enter the debugger by typing ^B, or in debugger.

**ACTION:** Information only, no action required.

**8.**

LED off. Initialization and set up in C.

**ACTION:** Information only, no action required.

**1.**

LED off. IOP registers self-test a.

**ACTION:** Information only, no action required.

**1./E**

LED on. IOP registers self-test a failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**2.**

LED off. BIC self-test b.

**ACTION:** Information only, no action required.

**2./E**

LED on. BIC self-test b failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**3.**

LED off. SCSI self-test c.

**ACTION:** Information only, no action required.

**3./E**

LED on. SCSI self-test c failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**5.**

LED off. Security cartridge self-test e.

**ACTION:** Information only, no action required.



**5/E**

LED on. Security cartridge self-test e failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**6.**

LED off. DUART self-test f.

**ACTION:** Information only, no action required.

**6/E**

LED on. DUART self-test failed (alternates 3 times).

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**.9/9.**

LED on. IOP hunt CP/IOP test in progress, Ping.

**ACTION:** Information only, no action required.

**.A/A.**

LED on. Operational and disabled, or waiting to hunt.

**ACTION:** Information only, no action required.

**.A/A.**

LED off. Operational and enabled.

**ACTION:** Information only, no action required.

**.B/B.**

LED off. Maintenance message sent (persists for about 1 second).

**ACTION:** Information only, no action required.

**.F/F.**

LED off. SCSI interrupt message sent (persists for about 1 second).

**ACTION:** Information only, no action required.

**.D/D.**

LED off. Operational, debugger enabled and DUART polled for ^B to enter.

**ACTION:** Information only, no action required.

**.D/D.**

LED on. Operational, debugger disabled and DUART polled for ^B to enter.

**ACTION:** Information only, no action required.

**D**

LED on. Active in debugger.

**ACTION:** Information only, no action required.

**.E/E.**

LED off. Soft reset occurred, error enabled.

**ACTION:** Information only, no action required.

**.E/E.**

LED on. Soft reset occurred, error disabled.

**ACTION:** Information only, no action required.

**.E.**

LED on. Hard reset initiated.

**ACTION:** Information only, no action required.

**IOP commandS****Status**

**STAT IOP** Provide status of the active IOP. 51C/61C/81-19

This command prints out the status whether the IOP is enabled or disabled. If it is disabled, the OOS reasons are printed. The following IOP OOS messages may appear on the maintenance terminal as follows:

**ASIC interrupt fault monitor threshold exceeded**

**Action:** Contact your technical support group.

**Fault interrupt fault monitor threshold exceeded**

**Action:** Contact your technical support group.

**General event interrupt fault monitor threshold exceeded**

**Action:** Contact your technical support group.

**IOP disabled by craftperson**

**Action:** Information only, take appropriate action as required.

**IOP not responding**

**Action:** Check that the IOP enable/disable switch is in the enable position (up). If the IOP does not respond after enabling it, reseal the IOP card. If the card does not respond after reseating, replace the IOP card by following the steps in the Hardware replacement guide.

**IOP Out of Service**

**Action:** Contact your technical support group.

## IOP command (continued)

### STAT IOP (continued)

#### IOP responding but cannot be enabled

**Action:** Contact your technical support group.

#### Processor exception fault monitor threshold exceeded

**Action:** Contact your technical support group.

#### Unexpected interrupt fault monitor threshold exceeded

**Action:** Contact your technical support group.

#### Unrecognized error fault monitor threshold exceeded

**Action:** Contact your technical support group.

### Disable

|                |                                                                                                      |               |
|----------------|------------------------------------------------------------------------------------------------------|---------------|
| <b>DIS IOP</b> | Disable the active IOP.<br><br>The LED is lit on the IOP faceplate, and both CMDUs are inaccessible. | 51C/61C/81-19 |
|----------------|------------------------------------------------------------------------------------------------------|---------------|

### Enable

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>ENL IOP</b> | Enable the IOP on the active Core.<br><br>The LED is turned off on the IOP faceplate. The CMDUs are restored to the state they were in prior to the IOP being changed. However, if the cable between the IOPs is not connected, the CMDUs remain inaccessible until the cable is reattached.<br><br><b>Note:</b> If both CMDUs were enabled, a file level synchronization check is performed prior to restoring states. If the synchronization (disk redundancy) does not exist, only the previously active CMDU is enabled. | 51C/61C/81-19 |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

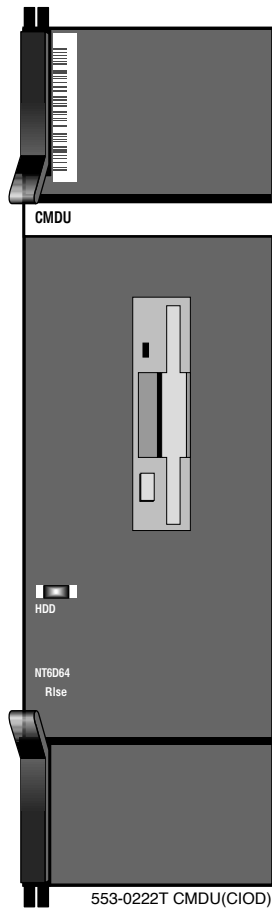
**IOP command** (continued) **S****Test**

|                 |                                                                                        |               |
|-----------------|----------------------------------------------------------------------------------------|---------------|
| <b>TEST IOP</b> | Perform self test on the active IOP.<br>The IOP must be disabled to perform this test. | 51C/61C/81-19 |
|-----------------|----------------------------------------------------------------------------------------|---------------|

**Print**

|                |                                     |               |
|----------------|-------------------------------------|---------------|
| <b>IDC IOP</b> | Print out the ID of the active IOP. | 51C/61C/81-19 |
|----------------|-------------------------------------|---------------|

## CMDU — Core Multi Drive Unit



### Purpose

The CMDU is used to load programs and office data into the system memory.

### Function

The CMDU occupies three adjacent card slots in each Core Module of the Option 81 and each Core/Network Module of Options 51C and 61C.

The CMDU requires 5V and 12V from the module backplane.

Each CMDU is controlled by an IOP card in the module. The IOP cards maintain redundancy of the CMDUs through a SCSI bus connection.

The IOP and CMDU are combined into one card on the Option 81C.

The CMDU cards can provide card-ID, which includes the card type, NT code, serial number and other relevant data about the CMDU.

### Features

The CMDU contains the following:

- ◆one 3.5-inch super high density floppy drive with a format capacity of 2.88 Mbytes
- ◆a 3.5-inch hard drive with a minimum capacity of 120 Mbytes

**CMDU commands****Status**

**STAT CMDU n**      Get status of the CMDU.      51C/61C/81-19

**n** = Core number (0 or 1) If n is not entered, the status for both CMDUs is printed.

If the CMDU is disabled, one of the following CMDU OOS reason may appear on the maintenance terminal.

**CMDU does not respond, the disk drive may be missing**

**Action:** Be sure CMDU power is on and the IOP to IOP cable is in place.

**CMDU has been disabled by the craftperson**

**Action:** Information only, take appropriate action as required.

**CMDU is disabled because the IOP is out-of-service**

**Action:** Be sure CMDU power is on and the IOP to IOP cable is in place.

**CMDU is in split mode**

**Action:** Information only, take appropriate action as required.

**CMDU is out of split mode**

**Action:** Information only, take appropriate action as required.

**CMDU status is mismatched because of a software error**

**Action:** Contact your technical support group.

## CMDU commands (continued)

### STAT CMDU n (continued)

#### CMDUs are not synchronized

**Action:** Contact your technical support group.

#### Hard disk drive error

**Action:** Contact your technical support group.

#### Hard disk is inaccessible

**Action:** Be sure CMDU power is on and the IOP to IOP cable is in place.

#### Hard disk read error

**Action:** Contact your technical support group.

#### Hard disk write error

**Action:** Contact your technical support group.

#### No access to hard disk (HDK)

**Action:** Be sure CMDU power is on and the IOP to IOP cable is in place.

### Disable device

#### DIS CMDU

Disable CMDU.

51C/61C/81-19

**n** = Core number (0 or 1) You must enter the Core number.

If disk redundancy is currently enabled (both CMDUs are enabled and enabled); disabling the CMDU also disables disk redundancy. The confirmation is displayed, **CURRENTLY CMDU N IS ACTIVE. DISK RDUN WILL BE DISABLED. ENTER Y(ES) TO CONFIRM, N(O) TO ABORT.** If the specified CMDU is in standby, its state is changed to disabled. If it is the active CMDU, it is disabled, and the standby CMDU becomes active.



**CMDU commands (continued)****Enable**

**ENL CMDU n** Enable the CMDU. 51C/61C/81-19

**n** = Core number (0 or 1) You must enter the Core number.

When the first CMDU is enabled, that CMDU's state is ACTIVE. If a second ENL CMDU is attempted, a file level synchronization on both hard disks is performed first. If the synchronization (disk redundancy) does not exist, a CIOD error message is printed, and the second CMDU remains disabled. If the synchronization exists, the confirmation is "displayed, **DISK RDUN WILL BE ENABLED, ENTER Y(ES) to CONFIRM, N(O) TO ABORT.** When disk redundancy is successful, both CMDU states are Enabled. The CMDU enabled first is active, and the second is standby.

**Print**

**ICD CMDUs** Print the ID for the CMDU. 51C/61C/81-19

**n** = Core number (0 or 1) If **n** is not entered, card ID information is printed for both CMDUs.

## CMDU commands (continued)

### Test

**TEST CMDU n** Perform test for the CMDU. 51C/61C/81-19

This test includes a self-test, read/write capability test, and disk access test on both hard and floppy disks for this CMDU. While the test is in progress, the CMDU is inaccessible.

**n** = Core number (0 or 1) You must enter the Core number.

A disk must be in the floppy drive when this test is run. If the floppy disk is not present, the floppy disk test will fail. The hard disk test will not be affected.

**DATA CMDU n** Perform read tests on the specified CMDU. 51C/61C/81-19

This data validity check is performed on both hard and floppy disks. While the test is in progress, the CMDU is inaccessible. Progress messages are output.

**n** = core number (0 or 1). If **n** is not entered, this command checks both CMDUs.

**Note:** This is more extensive than the TEST command, and may take longer.

### Swap

**SWAP** Swap the CMDUs. 51C/61C/81-19

After this command is issued, the active CMDU becomes standby, and the standby CMDU becomes active. This command is performed only when disk redundancy is enabled.

### Synchronize

**SYNC** Synchronize the hard disks on both CMDUs. 51C/61C/81-19

This is a sector level synchronization. It is performed by copying the data from the active CMDU to the disabled CMDU, sector by sector. This can only be done when one CMDU is active and one is disabled. The confirmation prompt appears when the system is ready to do the copying, **CMDU n ACTIVE HDK WILL BE COPIED AND DISK RDUN WILL BE ENABLED. ENTER Y TO CONFIRM.**

Synchronization may take as long as 40 minutes. Progress reports appear on the TTY periodically.

## Hard and Floppy Disk Commands

### Test

**TEST CMDU n** Perform test on the Hard or Floppy Disk. 51C/61C/81-19  
**HDK, FDK**

This test includes a self-test, read/write capability test, and disk access test on either the hard or floppy disk drive for this CMDU. While the test is in progress, the CMDU is inaccessible.

**n** = Core number (0 or 1) You must enter the Core number.

A disk must be in the floppy drive to be tested. If a floppy disk is not present, the floppy disk test will fail. The hard disk test will not be affected.

**TEST RDUN** Perform file level checking on both hard disks. 51C/61C/81-19

This test ensures that disk synchronization exists. It can only be performed when disk redundancy is enabled. If the test fails, a CIOD message appears, and disk redundancy is disabled.

While this test is in progress, the disk is inaccessible

**DATA CMDU n** Perform read test on either the Hard Disk or Floppy Disk. 51C/61C/81-19  
**HDK, FDK**

This is a data validity check. While the test is in progress, the Disk is inaccessible.

**n** = Core number (0 or 1) You must enter the Core number.

**Note:** This is more extensive than the TEST command, and may take longer.

### Test

**DATA RDUN** Perform sector level checking on both hard disks. 51C/61C/81-19

This test ensures that disk synchronization (disk redundancy) exists. It can only be performed when disk redundancy is enabled. All data is checked on both disks, sector by sector. If the test fails, a CIOD message appears, and disk redundancy is disabled.

**Note:** This is more extensive than the TEST command, and may take longer. While this test is in progress, the disks are inaccessible.

## CIOD messages

### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

#### CIOD001 Invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

#### CIOD002 Invalid argument.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### CIOD003 The device number is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command. Enter 0 or 1.

#### CIOD004 HDK x test failed. The hard disk on CMDU x failed the test.

**ACTION:** Try the test again. If it fails three times, replace the CMDU by following the steps in the *Hardware replacement* guide. If you need help contact your technical support group.

#### CIOD005 Softerr: cannot access the device.

**ACTION:** Contact your technical support group.

#### CIOD006 That device is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

#### CIOD007 That device is already disabled.

**ACTION:** Ensure that this is the command you wanted to use.

#### CIOD008 FDK x failed. The floppy disk on CMDU x failed the test.

**ACTION:** Try the test again. If it fails three times, replace the floppy drive by following the steps in the *Hardware replacement* guide. If you need help contact your technical support group.

**CIOD009 Failed to disable the device.**

**ACTION:** Re-attempt the command. If the problem persists contact your technical support group.

**CIOD010 Related data (CMDU status) is mismatched due to a software error.**

**ACTION:** Contact your technical support group.

**CIOD011 IOP test failed. See fault reporting for the reason for the failure.**

**ACTION:** Replace the IOP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CIOD012 Cannot access CMDU x because the system is in split mode. System must be redundant before attempting this command.**

**ACTION:** Use SHDW in LD 135 to restore the system to redundancy. If you need help with the commands or system responses refer to the CCED chapter. Re-enter the command.

**CIOD013 The CMDU number is required.**

**ACTION:** Check to make sure your data is correct and re-enter the command. Enter 0 or 1 to indicate which device.

**CIOD014 Receiving this message while the midnight routine runs or RDUN test failed because the disk contents are not synchronized.**

**ACTION:** Use SYNC to synchronize the disks, then re-enter the command. Check for a possible bad CMDU. If the SCSI bus is busy, unseat the IOP in the opposite CORE. Use SYNC to synchronize the CMDUs. Reseat the IOP and re-enter the RDUN diagnostics in both COREs.

**CIOD015 ENL command failed, and device cannot be enabled, because it cannot be accessed.**

**ACTION:** Make sure the cables are connected, then re-enter the command.

**CIOD016 RDUN command failed because the disk redundancy is in the disabled state.**

**ACTION:** Use ENL CMDU n to enable the disk, then re-enter the command.

**CIOD017 SYNC command failed because the disk redundancy is in enabled state.**

**ACTION:** Use DIS CMDU n to disable the disk, then re-enter the command.

**CIOD018 SYNC fail due to soft err.**

**ACTION:** Contact your technical support group.

**CIOD019 SYNC command failed.**

1. Refer to fault reporting for the reason for the failure.

**ACTION:** Re-attempt the command. If the error continues contact your technical support group.

2. Receiving this message when attempting to resync the CMDUs after an upgrade or parallel reload.

**ACTION:** Disable the active IOP and re-enable in LD 137. Confirm that the CMDU at the far end can be recognized by using the IDC command. Try the SYNC command again if it still fails. Unseat the IOP off the bus in the opposite CORE and resync the CMDUs. Reseat the IOP and verify access. If the error continues contact your technical support group.

**CIOD020 SYNC command failed because there is no system resource available at this time.**

**ACTION:** Try again later.

**CIOD021 SYNC in progress. xx percent complete.**

This is a status message. Synchronization may take a long time. This message helps indicate how far along the synchronization is

**ACTION:** Information only, no action required.

**CIOD022 CABLE yy is loose, or CMDU yy is inaccessible. The SCSI test was performed successfully on both sides.**

The test failed because of a loose cable or inaccessible CMDU.

Whichever is applicable is printed

xxxx may be CABL or CMDU:

CABL means that a cable is loose, or the status is unknown because both CMDUs are inaccessible.

CMDU indicates that the CMDU is inaccessible.

**ACTION:** Check the cable connection between the IOP and the CMDU. Reconnect the cable if it is loose. Perform a parallel reload if the CMDU does not respond.

**CIOD023 Unable to switch to inactive CP. The current CP remains active.**

The SCSI test was performed on the active side only, and the switchover attempt failed. Refer to CIOD024 for active side information

**ACTION:** Check the cable connection between the IOP and the CMDU.

**CIOD024 This message displays cable status and CMDU accessibility for the active side.**

xxxx can refer to CABL, or CMDU. Output may be one of the following.

CMDU yy indicates which CMDU is inaccessible.

CABL yy means the cable is loose, or the status is unknown.

**ACTION:** Check the cable connection between IOP and CMDU.

**CIOD025 Unable to switch back to active CP.**

The SCSI test was performed on both sides, but the system cannot return to the original active CP. The inactive CP is now active. Refer to CIOD026 for status

**ACTION:** Check the cable connection between the IOP and the CMDU. Perform a parallel reload if the CMDU does not respond

**CIOD026 This message displays cable status and CMDU accessibility for both sides due to the inability to switch back to the original active CP.**

xxxx can refer to CABL, or CMDU. Output may be one of the following.

CMDU yy indicates which CMDU is inaccessible.

CABL yy means the cable is loose, or the status is unknown.

**ACTION:** Check the cable connection between the IOP and the CMDU. Perform a parallel reload if the CMDU does not respond.

**CIOD027 SCSI test failed because an invalid address was detected for SCSI address 6 or 7.**

**ACTION:** Use TEST CMDU to test the drive. If the error continues contact your technical support group.

**CIOD028 No resource is available for overlay input processing.**

**ACTION:** Try again later.

**CIOD029 Both CMDUs are disabled.**

**ACTION:** Use ENL CMDU n to enable a CMDU.

**CIOD030 Disk redundancy (RDUN) file level check failed. The CMDU and/or disk redundancy cannot be enabled.**

**ACTION:** Contact your technical support group.

**CIOD031 Abort delayed because a critical write is in progress. The abort will be delayed until the write is complete.**

**ACTION:** Wait and try the command later.

**CIOD032 To issue this command, the IOP must be enabled.**

**ACTION:** Use ENL IOP to enable the IOP.

**CIOD033 To test the IOP, it must be disabled.**

**ACTION:** Use DIS IOP to disable the IOP.

**CIOD034 To perform the Read/Write test, the CMDU must be enabled.**

**ACTION:** Use ENL CMDU n to enable a CMDU.

**CIOD035 That response is not allowed for this prompt.**

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**CIOD036 Read test in progress (xx percent done).**

This is a status message output during an exhaustive read test. This test may take a while, so this message helps keep track of the status.

**ACTION:** Information only, no action required.

**CIOD037 Synchronization sector check in progress (xx percent done).**

This is a status message output during the check. This check may take a while, so this message helps keep track of the status.

**ACTION:** Information only, no action required.

**CIOD038 Card ID cannot be read**

**ACTION:** Reseat or replace the card.



**CIOD039 SYNC command failed because both CMDUs are disabled.**

**ACTION:** Re-enable CMDU 0 then restore to CMDU 1.

**CIOD040 Cannot access CMDU x. Ensure it is enabled, and check cabling.**

**ACTION:** Check the cable connection between the IOP and the CMDU. Use ENL CMDU n to enable the CMDU.

**CIOD041 Unexpected signal x raised, interfering with LD 137.**

**ACTION:** Contact your technical support group.

**CIOD042 Synchronization failed because the system is in split mode.**

**ACTION:** Use SHDW in LD 135 to restore the system to the redundant mode. If you need help with the commands or system responses refer to the CCED chapter.

**CIOD045 To issue the SWAP command, disk redundancy must be enabled.**

**ACTION:** Use SHDW in LD 135 to restore the system to the redundant mode. If you need help with the commands or system responses refer to the CCED chapter.

**CIOD046 Unable to lockout graceful switchover possibility. The switchover was performed while the maintenance command is in progress.**

**ACTION:** Information only. No action required.

**CIOD100 VALID IOP-IOP cable loss or CMDU removal store current CMDU states.**

**ACTION:** Information only. No action required.

**CIOD101 IOP-IOP Cable reconnected or CMDUs re-inserted: but IOP still disabled.**

**ACTION:** Use ENL IOP to re-enable the IOP.

**CIOD102 CMDU states previously stored when IOP was disabled.**

**ACTION:** Information only. No action required.

**CIOD103 CMDU x hard disk inaccessible: cannot restore to STANDBY.**

**ACTION:** Be sure CMDU power is on and the IOP to IOP cable is in place.

**CIOD104 CMDU x hard disk inaccessible: cannot restore to ACTIVE.**

**ACTION:** Be sure CMDU power is on and the IOP to IOP cable is in place.

**CIOD105 CMDU x cannot delete hard disk test file.**

**ACTION:** Use DIS CMDU x to disable and ENL CMDU x to re-enable the CMDU, then re-enter the command.

**CIOD106 CMDU x cannot delete floppy disk test file.**

**ACTION:** Disable CMDU x and then re-enable in LD 137.

**CIOD107 No floppy disk in drive.**

**ACTION:** Place the proper floppy disk into the drive.

**CIOD108 Floppy disk not formatted.**

**ACTION:** Insert formatted disk or contact your local technical support group to have the disk formatted in PDT.

**CIOD109 Floppy disk is Write Protected.**

**ACTION:** Check that the write protect tab on the floppy disk is closed (no hole).

**CIOD110 SCSI cable between IOPs is missing, both CMDUs are disabled.**

**ACTION:** Check that both connectors on the IOP to IOP cable are in place.

**CIOD111 Valid cable reconnect. Attempt to restore CMDU states.**

**ACTION:** Information only.

**CIOD112 Invalid cable loss. Multiple loss msgs: states not stored.**

**ACTION:** Contact your technical support group.

**CIOD113 Invalid cable loss. CMDU accessible, states not stored.**

**ACTION:** Contact your technical support group.

**CIOD114 CMDU x hard disk has insufficient memory for quick read/write test.**

**ACTION:** Re-enter the command. If the error continues contact your technical support group.

**CIOD115 CMDU x floppy disk has insufficient memory for quick read/write test.**

**ACTION:** Contact your technical support group.

**CIOD116 CMDU x hard disk: cannot open file for quick read/write test.**

**ACTION:** Contact your technical support group.

**CIOD117 CMDU x floppy disk: cannot open file for quick read/write test.**

**ACTION:** Contact your technical support group.

**CIOD118 CMDU x: cannot read card ID.**

**ACTION:** Contact your technical support group.

**CIOD119 CMDU x floppy disk cannot create quick test file.**

**ACTION:** Contact your technical support group.

**CIOD120 CMDU x hard disk cannot create quick test file.**

**ACTION:** Contact your technical support group.

**CIOD121 CMDU x hard disk input buff malloc err: quick test.**

**ACTION:** Contact your technical support group.

**CIOD122 CMDU x floppy disk input buff malloc err: quick test.**

**ACTION:** Contact your technical support group.

**CIOD123 CMDU x is disabled due to fault monitoring.**

**ACTION:** Use TEST CMDU n HDK to test the CMDU. If the test fails, replace the CMDU by following the steps in the *Hardware replacement* guide.

**CIOD124 CMDU x is disabled due to IOP to IOP cable loss.**

**ACTION:** Check that both connectors on the IOP to IOP cable are in place.

**CIOD125 CMDU x is disabled because the IOP is disabled.**

**ACTION:** Use ENL IOP to re-enable the IOP card.

**CIOD126 CMDU x is disabled. Active CP can not access the standby CMDU because the system is in split mode.**

**ACTION:** Use SHDW in LD 135 to restore the system to the redundant mode. If you need help with the commands or system responses refer to the *CCED* chapter. Re-enter the command.

**CIOD127 CMDU x is disabled because the system is in split mode. The standby CMDU remains disabled.**

**ACTION:** Use SHDW in LD 135 to restore the system to the redundant mode. If you need help with the commands or system responses refer to the *CCED* chapter. Use ENL CMDU to enable the CMDU.

**CIOD128 CMDU x is disabled because of a software/hardware mismatch.**

**ACTION:** Use ENL CMDU n to re-enable the CMDU.

**CIOD129 CMDU x is disabled because it could not access hard disk.**

**ACTION:** Check that the CMDU power is on and that both connectors on the IOP to CMDU cable are in place.

Receiving CIOD129, CIOD143 and COID136 messages when swapping over from CORE 0 to CORE 1. The CMDUs are not running in sync. The error indicates that the active CMDU 0 cannot communicate to the newly active CORE 1 after the switch.

**ACTION:** Check for faulty cabling or bent pins on the IOP, slot positions 16A on both CORE backplanes.

**CIOD130 CMDU x is disabled due to a software mismatch on both active or standby CMDUs.**

**ACTION:** Contact your technical support group.

**CIOD131 CMDU x is restored to STANDBY because the IOP was enabled.**

**ACTION:** Information only, no action required.

**CIOD132 CMDU x is restored to ACTIVE because the IOP was enabled.**

**ACTION:** Information only, no action required.

**CIOD133 CMDU x is restored to STANDBY.**

**ACTION:** Information only, no action required.

**CIOD134 CMDU x is restored to ACTIVE.**

**ACTION:** Information only, no action required.

**CIOD135 CMDU x is standby due to switchover.**

**ACTION:** Information only, no action required.

**CIOD136 CMDU x is active due to switchover.**

**ACTION:** Information only. No action required.

Receiving CIOD129, CIOD143 and COID136 messages when swapping over from CORE 0 to CORE 1. The CMDUs are not running in sync. The error indicates the active CMDU 0, cannot communicate to the newly active made CORE 1 after the switch.

**ACTION:** Check for faulty cabling or bent pins on the IOP, slot positions 16A on both CORE backplanes.

**CIOD137 CMDU x is standby due to a warm start.**

**ACTION:** Information only, no action required.

**CIOD138 CMDU x is active due to a warm start.**

**ACTION:** Information only, no action required.

**CIOD139 CMDU x is standby due to a cold start.**

**ACTION:** Information only, no action required.

**CIOD140 CMDU x is active due to a cold start.**

**ACTION:** Information only, no action required.

**CIOD141 CMDU x is disabled and cannot access hard disk from a cold start.**

**ACTION:** Check that the CMDU power is on and that cable connectors are in place.

**CIOD142 CMDU x is disabled and cannot access hard disk from a warm start.**

**ACTION:** Check that the CMDU power is on and that cable connectors are in place.

**CIOD143 CMDU x is disabled cannot access hard disk (switchover).**

**ACTION:** Check that the CMDU power is on and that cable connectors are in place.

Receiving CIOD129, CIOD143 and COID136 messages when swapping over from CORE 0 to CORE 1. The CMDUs are not running in sync. The error indicates the active CMDU 0, cannot communicate to the newly active made CORE 1 after the switch.

**ACTION:** Check for faulty cabling or bent pins on the IOP, slot positions 16A on both CORE backplanes.

**CIOD144 CMDU x was in the standby mode and switched to the active mode due to a cold start.**

**ACTION:** Information only, no action required.

**CIOD145 CMDU x was in the standby mode and switched to the active mode due to a warm start.**

**ACTION:** Information only, no action required.

**CIOD146 CMDU x was in the standby mode and switched to the active mode due to a switchover.**

**ACTION:** Information only, no action required.

**CIOD147 CMDU x was in the standby mode and switched to the active mode due to a fault monitoring.**

**ACTION:** Contact your technical support group.

**CIOD148 CMDU x is disabled due to SPLIT mode from a cold start.**

**ACTION:** Information only, no action required.

**CIOD149 CMDU x is disabled due to SPLIT mode from a warm start.**

**ACTION:** Information only, no action required.

**CIOD150 CMDU x is disabled due to SPLIT mode from a switchover.**

**ACTION:** Information only, no action required.

**CIOD151 Cannot restore CMDU x to standby due to SPLIT mode.**

**ACTION:** Use SHDW in LD 135 to restore the system to the redundant mode. If you need help with the commands or system responses refer to the CCED chapter. Re-enter the command.

**CIOD152 Cannot restore CMDU x to active due to SPLIT mode.**

**ACTION:** Use SHDW in LD 135 to restore the system to the redundant mode. If you need help with the commands or system responses refer to the CCED chapter. Re-enter the command.

**CIOD153 CMDU x was in the standby mode and switched to active due to IOP being enabled.**

**ACTION:** Information only, no action required.

**CIOD154 CMDU x was in the standby mode and switched to active due to SCSI IOP to IOP cable.**

**ACTION:** Information only, no action required.

**CIOD155 Hard disks of both CMDUs are inaccessible.**

**ACTION:** Check that the CMDU power is on and that cable connectors are in place.

**CIOD156 CMDU x was in the standby mode and switched to active mode.**

**ACTION:** Information only, no action required.

**CIOD157 INFO: CMDU “a” is active, RDUN is “b”.**

**ACTION:** Information only, no action required.

**CIOD158 CMDU x is disabled and the system cannot access hard disk on a warm start.**

**ACTION:** Check that the CMDU is plugged in and is powered on.

**CIOD159 CMDU x is disabled and the system cannot access hard disk on a cold start.**

**ACTION:** Check that the CMDU is plugged in and is powered on.

**CIOD160 CMDU was removed and the system automatically disabled it.**

**ACTION:** Information only. Assuming that you removed the CMDU no action is required.

**CIOD161 CMDU still disabled since it is not plugged in.**

**ACTION:** Plug the CMDU in and then re-enter your command.

**CIOD162 CMDU x hard disk is inaccessible and the system cannot restore to the active mode.**

**ACTION:** Check that the CMDU is plugged in and that the power is on.

**CIOD163 CMDU was reinserted, but is disabled since IOP is disabled.**

**ACTION:** Use ENL IOP to enable the IOP and then use ENL CMDU n to enable the CMDU.

**CIOD164 Cluster number beyond normal range: <clustNum> <filename>**

**ACTION:** Contact your technical support group.

**CIOD165 Cluster incorrectly terminated: <clustNum> <filename>**

**ACTION:** Contact your technical support group.

**CIOD166 Cluster multiply assigned: <filename>**

**ACTION:** Contact your technical support group.

**CIOD167 File size longer than cluster chain: <filename>**

**ACTION:** Contact your technical support group.

**CIOD168 Clusters lost in the FAT = <no of lostClusters>**

**ACTION:** Contact your technical support group.

**CIOD169 Illegal file name <oldName> renamed as <newName>**

**ACTION:** Contact your technical support group.

**CIOD200 Security cartridge is missing or not responding.**

**ACTION:** Be sure the ID number, software version and options match on both the cartridge on the IOP and the disks supplied with the system.

**CIOD201 Incorrect response from security cartridge.**

**ACTION:** Ensure the cartridge is properly installed on the IOP.

**CIOD202 The wrong security cartridge has been installed.**

**ACTION:** Locate and install the correct cartridge.

**CIOD203 Customer ID number mismatch.**

**ACTION:** Locate and install the correct cartridge.

Receiving this message when attempting to install software. The CMDUs from manufacturing are loaded with a test database and will not match the serial number ID on the data cartridge you have installed.



**ACTION:** Contact your technical support group for help in verifying that the Options 51C, 61C, 81 *Installation Tool Reference* procedure was used.

**CIOD204 Machine type mismatch.**

**ACTION:** Locate and install the correct cartridge.

**CIOD205 System type or version number mismatch.**

**ACTION:** Locate and install the correct cartridge.

**CIOD206 System issue number mismatch.**

**ACTION:** Locate and install the correct cartridge.

**CIOD207 Security cartridge data not valid.**

**ACTION:** Locate and install the correct cartridge

**CIOD208 Failed to read security Cartridge.**

**ACTION:** Locate and install the correct cartridge

**CIOD300 No IOP object can be created during HI OBJ creation phase.**

**ACTION:** Information only, no action required.

**CIOD301 IOP x in slot y is not responding.**

**ACTION:** Check that the IOP enable/disable switch is in the enable position (up). If the IOP does not respond after enabling it, reseal the IOP card. If the card does not respond after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD302 IOP x in slot y detects both CMDUs becoming inaccessible.**

**ACTION:** Check both connector ends of IOP to IOP SCSI cable. Check that both CMDUs are plugged in and powered on.

**CIOD303 IOP x in slot y detects either or both CMDUs becoming accessible.**

**ACTION:** Check both connector ends of IOP to IOP SCSI cable. Check that both CMDUs are plugged in and that the power is on.

**CIOD304 Cannot find IOP database file.**

**ACTION:** Use RES in LD 43 to restore the database to both hard drives from backup floppy disks. Verify the fault is cleared. If you need help with the commands or system responses refer to the *EDD* chapter in this guide.

**CIOD305 IOP x in slot y fails SCSI controller test.**

**ACTION:** Reseat the IOP card. If the card does not respond after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD306 IOP x in slot y fails to program/enable IOP BIC window.**

**ACTION:** Reseat the IOP card. If the card does not respond after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD307 IOP x in slot y cannot send message to IOP card.**

**ACTION:** Reinitialize the system by pressing the manual INIT button on top of the active CP card.

**CIOD308 IOP x in slot y space manager cannot allocate CSR address.**

**ACTION:** Reload the system by pressing the reload button on the bottom of the active CP card.

**CIOD309 IOP cannot write to IOP database file.**

**ACTION:** Check CMDU power.

**CIOD310 IOP: Cannot create binary semaphore for IOP.**

**ACTION:** Contact you technical support group.

**CIOD311 IOP cannot create IOP class.**

**ACTION:** Contact you technical support group.

**CIOD312 IOP x in slot y cannot be created.**

**ACTION:** Contact you technical support group.

**CIOD313 IOP x in slot y cannot enable IOP.**

**ACTION:** Contact you technical support group.

**CIOD314 IOP: Cannot open “a” database file.**

**ACTION:** Contact you technical support group.

**CIOD315 IOP: “a” database file is empty.**

**ACTION:** Contact you technical support group.

**CIOD316 x IOP: Release number is not found in “a” database file.**

**ACTION:** Use RES in LD 43 to restore the database to both hard drives from backup floppy disks. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *EDD* chapter in this guide.

**CIOD317 IOP x in slot y: security cartridge test failed.**

**ACTION:** Reseat or replace the security cartridge on IOP.

**CIOD318 IOP x in slot y: fails to take SCSI low level semaphore.**

**ACTION:** Contact you technical support group.

**CIOD319 IOP x in slot y: fails to give SCSI low level semaphore.**

**ACTION:** Contact you technical support group.

**CIOD320 IOP x in slot y: fails to take SCSI high level semaphore.**

**ACTION:** Contact you technical support group.

**CIOD321 IOP x in slot y: fails to give SCSI high level semaphore.**

**ACTION:** Contact you technical support group.

**CIOD322 IOP x in slot y: Timeout waiting for response from control register test.**

**ACTION:** Reseat the IOP card. If the card does not respond after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD323 IOP x in slot y: BIC test failed.**

**ACTION:** Reseat the IOP card. If the card does not pass the test after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD324 IOP x in slot y: Timeout waiting for response from BIC test.**

**ACTION:** Reseat the IOP card. If the card does not pass the test after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD325 IOP: swo Graceful call failed with ret Code a.**

**ACTION:** Contact you technical support group.

**CIOD339 IOP x in slot y: SCSI cable test failed.**

**ACTION:** Use STAT IOP to check the IOP. Check both connector ends of the IOP to IOP SCSI cable. Check that both CMDUs are plugged in and the power is on.

**CIOD341 IOP x in slot y: Fails to set IOP general register B.**

**ACTION:** Reseat the IOP card. If the card does not pass the test after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD343 IOP x in slot y: fails to get general register A.**

**ACTION:** Reseat the IOP card. If the card does not pass the test after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD344 IOP x in slot y: fails to set IPB/Local T/O timer, EI mapping, TOC, or Arb Id.**

**ACTION:** Reseat the IOP card. If the card does not pass the test after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD346 IOP x in slot y: Fails to read BIC card ID.**

**ACTION:** Reseat the IOP card. If the card does not pass the test after reseating, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD347 IOP x in slot y: Space manager cannot allocate IPB address.**

**ACTION:** Reload the system by pressing the reload button on the bottom of the active CP card.

**CIOD348 IOP x in slot y: fails to program SCSI controller.**

**ACTION:** Check the software in LD 137.

**CIOD349 IOP x in slot y: Installing Event Interrupt ISR failure on CP.**

**ACTION:** Check CP in LD 135 and replace if necessary by following the steps in the *Hardware replacement* guide.

**CIOD350 IOP x in slot y: Control register test failed.**

**ACTION:** Rerun the test. If the card continues to fail the test, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD0351 x y**

IOP x in slot y timeout waiting for response from security cartridge test.

**ACTION:** Replace or reseal security cartridge/dongle on IOP/IODU.

**CIOD352 IOP x in slot y: Time-out waiting for response from SCSI ctrl test on top of the active CP card.**

**ACTION:** Rerun the test. If the card continues to fail the test, replace the IOP card by following the steps in the *Hardware replacement* guide.

**CIOD353 IOP x in slot y: Timeout waiting for response from SCSI cable test.**

**ACTION:** Re-enter the command.

**CIOD354 Hunt: Illegal response from IOP to ping test message.**

**ACTION:** If the error persists replace the IOP by following the steps in the *Hardware replacement* guide.

**CIOD355 Hunt: No response from IOP to ping test message.**

**ACTION:** If the error persists replace the IOP by following the steps in the *Hardware replacement* guide.

**CIOD356 Hunt: The IOP did not complete the self-test.**

**ACTION:** If the error persists replace the IOP by following the steps in the *Hardware replacement* guide.

**CIOD357 Hunt: The IOP failed the self-test.**

**ACTION:** If the error persists replace the IOP by following the steps in the *Hardware replacement* guide.

**CIOD358 Hunt: IOP x did not pass self-test.**

**ACTION:** If the error persists replace the IOP by following the steps in the *Hardware replacement* guide.

**CIOD359 Hunt: IOP x failed ping test.**

**ACTION:** If the error persists replace the IOP by following the steps in the *Hardware replacement* guide.

**CIOD360 Hunt: No IOPs recognized on side x.**

**ACTION:** Check the cabling between the core modules.

**CIOD361 IOP x in slot y: detects CMDU is accessible.**

**ACTION:** Information only, no action required.

**CIOD362 IOP x in slot y: detects CMDU is inaccessible.**

**ACTION:** Check the CMDU for proper backplane seating.

**CIOD 363 Ethernet has been restored to ACTIVE because the IOP is enabled.**

**ACTION:** Information only. This message appears repeatedly or is associated with a system problem. Contact your technical support group.

**CIOD364 Ethernet has been disabled because the IOP is disabled**

**ACTION:** Information only if the IOP is manually disabled. If a manual disabled has not been done, investigate why the IOP is disabling.

**CIOD0385**

Command fails due to ELNK in DIS state.

**ACTION:** Enable the ethernet controller in LD 137.

**CIOD0386**

Problems encountered. ENL command aborted.

**ACTION:** Retry. If the problem persists, contact your technical support group.

**CIOD0387**

Problems encountered. DIS command aborted.

**ACTION:** Retry. If the problems persists, contact your technical support group.

**CIOD0388**

TEST command cannot be executed as long as ERDN feature is in ENL state.

**ACTION:** Disable the ERDN feature (in LD 137) and try again.

**CIOD0389**

Command fails. ERDN feature is not yet configured.

**ACTION:** Configure first the feature in LD 17. Try again. 

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## CMF — LD 54 Multifrequency Signaling

### In this chapter

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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter in this guide.

## How the CMF works

Multifrequency Compelled Signaling (MFC) or Multifrequency Signaling (MFE) provides a handshaking facility between the Meridian 1 and the Central Office or Public Exchange (CO/PE) or between other PBXs over network/Tie trunks.

The MFD overlay program is used to diagnose, display or change the status of the MFC or MFE send/receive (S/R) cards.

LD 54 resets all available MFC or MFE cards (both channels idle) and performs loop-back tests during the midnight routines. After every SYSLOAD or power-up, all available MFC or MFE cards are initialized.

The overlay can be loaded by the system after every power-up (or SYSLOAD), as part of the daily routines, or loaded manually to enter commands.

### Hardware initialization after SYSLOAD

After the system power-up, every idle MFC or MFE card is initialized (self-tested). During this test the card is disabled, the LED on the faceplate is ON, and the S/R card microprocessor executes sequential loop-back tests on both channels.

These tests entail looping the sender output of each card to the Receiver input. The sender transmits all thirty tone pairs (1 to 15 digits for both DOD/DID modes) with a default signal level of zero. Each time the receiver detects a tone pair, the microprocessor verifies the digit received. At the end of the test a command to enable the card is issued and the microprocessor sends the test results to the CPU.

## Loop-around test during daily routines

This loop-around test is conducted by the system during the daily routines. The loop-around test is identical to the one conducted after power-up except for the following points:

- ◆ the test is conducted on one channel at a time for all available MFC or MFE cards
- ◆ the MFC or MFE S/R card remains enabled the LED on the faceplate is OFF
- ◆ the self-test can also be loaded manually by issuing a command on the specified channel

## Loop-around test by command

The loop-around tests are performed by maintenance personnel on a specified channel of the MFC or MFE S/R card. There are two types of tests:

- ◆ one is identical to the daily routine test which is conducted on the specific channel
- ◆ the second is conducted on a specific channel for a specified digit and signal level

LD 54 also performs the following functions:

- ◆ resets all idle MFC or MFE cards once a day during the midnight routines
- ◆ enables and disables the MFC or MFE card or channel
- ◆ determines the status of the MFC card or channel
- ◆ lists all disabled MFC or MFE channels
- ◆ handles other common overlay operations (such as clearing alarms)

**Note 1:** Use the DISL command to force-disable the MFC or MFE channel or card.

**Note 2:** Use the DISI command in LD 32 to disable the card when idle.

**Note 3:** No more than 50 percent of MFC channels can be disabled at one time as a result of system or manually initiated tests. However, this constraint does not apply using disable commands.

## MFC/MFE Error handler and counter

The MFC/MFE error handlers are resident programs that monitor the number of MFC or MFE signaling errors. A one-word error field in the MFC or MFE block is initialized to zero. The Error Handler program allows a maximum of 10 errors. After every successful use of the MFC or MFE channel, the error field is decremental by one, if it is not already at zero. After every failure of the MFC or MFE channel the error field is incremental by one.

With X11 software, the Error Handler program generates only the **ERR700 l s c u** message. When an Error Handler code is output, the MFD overlay must be loaded manually and the MFC or MFE channels tested.

**CMF common commands****Clear display/alarm**

|                 |                                                                           |         |
|-----------------|---------------------------------------------------------------------------|---------|
| <b>CDSP</b>     | Clear the maintenance display on the active CPU.                          | basic-1 |
| <b>CMAJ</b>     | Clear major alarm, reset power fail transfer and clear power fault alarm. | basic-1 |
| <b>CMIN ALL</b> | Clear minor alarm indication on all attendant consoles.                   | basic-1 |
| <b>CMIN c</b>   | Clear minor alarm indication on attendant consoles for customer c.        | basic-1 |

**Status**

|                       |                                                                                                                                                              |         |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>STAT</b>           | List all disabled MFC channels in the system.                                                                                                                | basic-1 |
| <b>STAT I s c (u)</b> | Get status of specified MFC or MFE card or unit.<br>Status is one of <b>IDLE</b> , <b>BUSY</b> , <b>MBSY</b> , <b>DSBL</b> or <b>UNEQ</b> for both channels. | basic-1 |

**Disable device**

|                     |                                                                                                                                                                                                          |         |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>DISC I s c</b>   | Disable specified MFC or MFE card.<br>LED on card is ON when disabled.                                                                                                                                   | basic-1 |
| <b>DISU I s c u</b> | Disable specified MFC or MFE channel.<br>When the other unit on the card is also in a disabled state in the software, a message is sent to disable the MFC or MFE card. LED on card is ON when disabled. | basic-1 |

**Enable**

|                     |                                                                                                                               |         |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>ENLC I s c</b>   | Enable specified MFC or MFE card.<br>Response is <b>OK</b> . A message is sent to the MFC or MFE card to turn off the LED.    | basic-1 |
| <b>ENLU I s c u</b> | Enable specified MFC or MFE channel.<br>Response is <b>OK</b> . A message is sent to the MFC or MFE card to turn off the LED. | basic-1 |

# CMF

## CMF common commands (continued)

### Reset/Initialize

|               |                                                                                                                               |         |
|---------------|-------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>MIDN 0</b> | Reset all idle MFC or MFE cards.<br><br>Resets all idle MFC or MFE cards and performs loop-around tests on all idle channels. | basic-1 |
| <b>MIDN 1</b> | Initialize all idle MFC or MFE cards (recommended after installation).                                                        | basic-1 |

### Test

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>ATST I s c u</b> | Test automatic loop-around for specified unit.<br><br>Performs automatic loop-around test on specified unit with default signal level of zero.<br><br>All 30 tone pairs are tested and verified by the card microprocessor. Digits 1 to 15 signify Forward Signals 1 to 15 (DOD mode) and digits 16 to 30 signify Backward Signals 1 to 15 (DID mode).<br><br>The response is <b>OK</b> when the unit passes the test and is enabled. If the receiver sends no message within a predefined time period, an error message indicating timeout is printed. If the receiver indicates it has received a different signal than that sent, the failed signal, an error message and the TN are printed. | basic-1 |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**CMF common commands (continued)****End**

|            |                                                |         |
|------------|------------------------------------------------|---------|
| <b>END</b> | Stop further testing or cancel active command. | basic-1 |
|------------|------------------------------------------------|---------|

**Manual loop-around**

|                            |                                                             |         |
|----------------------------|-------------------------------------------------------------|---------|
| <b>MTST I s c u<br/>dl</b> | Manual loop-around test on unit with specified digit level. | basic-1 |
|----------------------------|-------------------------------------------------------------|---------|

MFC-30 tone pairs are tested and verified by the CPU. Digits 1 to 15 indicate forward signals 1 to 15 (DOD mode) and digits 16 to 30 indicate backward signals 1 to 15 (DID mode).

MFE-15 tone pairs are tested and verified. Digits 1-15 represent Forward Signals 1-15 (DID mode). Digit 0 represents the control frequency.

The MFC signal levels require a +3 dBm gain at the trunk end. The following list shows the level codes, their value at the S/R card output, and their value at the trunk.

| Digit level | Level Values<br>(at S/R card) | Level Values<br>(at trunk) |
|-------------|-------------------------------|----------------------------|
| 0           | 8 dBm                         | 5 dBm                      |
| 1           | 11 dBm                        | 8 dBm                      |
| 2           | 12 dBm                        | 9 dBm                      |
| 3           | 13 dBm                        | 10 dBm                     |
| 4           | 14 dBm                        | 11 dBm                     |
| 5           | 15 dBm                        | 12 dBm                     |
| 6           | 16 dBm                        | 13 dBm                     |
| 7           | 35 dBm                        | 32 dBm                     |

The MFE signal level 0=-10.5 dBm level with skew -7.0 dBm control frequency level. Signal levels 1-7 are used for internal test purposes.

The response is **OK** when the unit passes the test and is enabled. If the unit fails the test, the appropriate error message and the TN are printed.

# CMF

## CMF messages

CMF messages identify software/hardware errors during call processing. Output is in the following format:

**CMFxxx CMFTN TRKTN X0... X8**

Mnemonic description is as follows:

**xxx** = the error code number

**CMFTN** = the CMF register TN in packed format

**TRKTN** = the Trunk TN associated with the CMFTN in packed format

**X0 to X8** = the first 9 words of the unprotected CMF block for the CMF unit used.

### CMF001

Noisy Multifrequency Compelled (MFC) card.

**ACTION:** Replace the MFC card following the steps following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault verify that the fault is cleared.

### CMF002

Large twist indicates a hardware fault.

**ACTION:** Replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### CMF003

Three frequencies indicates a hardware fault.

**ACTION:** Replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.



**CMF004**

No inter-digit pause indicates a hardware fault.

**ACTION:** Replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CMF005**

Invalid decision indicates a hardware fault.

**ACTION:** Replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CMF006**

MFC card firmware fault.

**ACTION:** Replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CMF007**

Undefined error indicates a hardware fault.

**ACTION:** Replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CMF008**

Software timeout indicates a software fault.

**ACTION:** Contact your technical support group.

**CMF009**

Not ready to send indicates a software fault.

**ACTION:** Contact your technical support group.

**CMF010**

Undefined function/signal indicates a software fault.

**ACTION:** Contact your technical support group.

**CMF011**

CMF table not defined indicating a software fault.

**ACTION:** Contact your technical support group.

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### CMF012

Invalid backward signal (BWD) received. Call cleared down indicating a software fault.

**ACTION:** Contact your technical support group.

### CMF013

Invalid Forward signal (FWD) received. Call cleared down indicating a software fault.

**ACTION:** Contact your technical support group.

### CMF014

Warning: L1 sequence terminated at Level 1 indicates a software fault.

**ACTION:** Contact your technical support group.

### CMF015

Invalid trunk type is attempting MFC signaling indicating a software fault.

**ACTION:** Contact your technical support group.

### CMF023

Warning: trying to send signal not defined in the CMF signal table.

**ACTION:** Contact your technical support group. 

# CMON — Core Monitor

## CMON messages

Core Monitor is a resident program. CMON does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

#### **CMON100 Card with PEC “x” inserted into side y slot z**

**ACTION:** Information only, no action required.

#### **CMON101 Card with PEC “x” removed from side y slot z**

**ACTION:** Information only, no action required.

#### **CMON102 Card with no PEC removed from side x slot y**

**ACTION:** Information only, no action required.

#### **CMON103 Card with no PEC inserted into side x slot y**

**ACTION:** Reseat or replace the corresponding card. Contact your technical support group.

#### **CMON104 Card with unknown PEC removed from side x slot y**

**ACTION:** Information only, no action required.

#### **CMON105 Card with unknown PEC inserted into side x slot y.**

**ACTION:** Reseat or replace the corresponding card.

**CMON400 The mask value of the CNI port on core side X, slot Y, port Z, mask M does not match the software image. The hardware image is being restored**

**ACTION:** Information only, no action required.

**CMON401 CNI intermittent interrupt occurring.**

**ACTION:** Contact your technical support group.

**CMON402 Core side X, slot Y, port Z cable 1 is detected. The system is putting it into Normal mode**

**ACTION:** Information only, no action required.

**CMON403 Core side X, slot Y, port Z cable 1 is lost. The system is putting it into Disabled mode**

**ACTION:** Contact your technical support group.

**CMON404 Core side X, slot Y, port Z cable 2 is detected. The system is putting it into Normal mode**

**ACTION:** Information only, no action required.

**CMON405 Core side X, slot Y, port Z cable 2 is lost. The system is putting it into Disabled mode**

**ACTION:** Contact your technical support group.

**CMON406 Core side X, slot Y, port Z cable 2 is lost. The system is putting it into Disabled mode**

**ACTION:** Contact your technical support group.

**CMON407 Core side X, slot Y, port Z remote power is lost. The system is putting it into Disabled mode**

**ACTION:** Contact your technical support group.

**CMON408 Core side X, slot Y, port Z 3PE physical switch is enabled. The system is putting it into Normal mode**

**ACTION:** Information only, no action required.

**CMON409 Core side X, slot Y, port Z 3PE physical switch is disabled. The system is putting it into Disabled mode**

**ACTION:** Contact your technical support group.

**CMON410 An event interrupt has been lost on core side x, slot y, port z**

**ACTION:** Contact your technical support group.

**CMON411 Core side X,slot Y CNI physical switch is enabled. The system is putting it into Normal mode**

**ACTION:** Information only, no action required.

**CMON412 Core side X,slot Y CNI physical switch is disabled. The system is putting it into Disabled mode**

**ACTION:** Contact your technical support group. 

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## CND — Caller's Name Display

### How the CND works

Caller's Name Display is a resident program. CND does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

The Caller's Name Display allows storage of user names in an Auxiliary computer such as a Property Management System (PMS). Problems with the link to the PMS are indicated by CND messages.

### CND messages

#### CND001

CND link input/output block is missing.

**ACTION:** Check the CPND database through the background terminal.

#### CND002

CND link status block is missing.

**ACTION:** Check the CPND database through the background terminal.

#### CND003

Garbage character receive on the CND link.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

### CND004

Lost partially assembled message.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY, use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

### CND005

CND SDI output buffer does not get emptied properly.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

### CND006

Wrong parameter passed to procedure CND\_LINK\_MSG\_CR.

**ACTION:** Check the PMS link and make sure the database is correct.

### CND007

Noisy CND Link.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

### CND008

Slow response on CND link.

**ACTION:** Contact your technical support group.

### CND009

CND link is down.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.



**CND010**

CND messages are lost.

**ACTION:** Contact your technical support group.

**CND011**

CND link queue is not empty.

**ACTION:** Information only, no action required.

**CND012**

Cannot synchronize the CND link.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

**CND013**

CND garbage collection pointers are corrupted.

**ACTION:** Contact your technical support group.

**CND014**

Attempt to acquire CND name block with length zero.

**ACTION:** Ensure that this is the command you wanted to use.

**CND015**

Not enough memory for CND name block.

**ACTION:** Check to make sure all unused names have been deleted. Disable the PMS link and re-enable it.

**CND016**

Out of boundaries for CND name block.

**ACTION:** Check to make sure you have up to 27 characters for the CPND name. Also verify that the XPLN does not exceed the MXLN.

**CND017**

Pointer corruption while trying to remove name block.

**ACTION:** Contact your technical support group.

# CND

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### CND018

Name block corruption.

**ACTION:** Re-enter the name by using the SEt CPnd command from the background terminal.

### CND021

Wrong TN in the Call Register.

**ACTION:** No action required, but if the error continues contact your technical support group.

### CND022

Special name table does not exist.

**ACTION:** Check the CPND database through the background terminal and re-enter the command.

### CND023

Display's customer does not match unit's customer.

**ACTION:** Check and re-enter name through the background terminal.

### CND024

Broken attendant queue.

**ACTION:** Information only, but if the error continues contact your technical support group.

### CND025

Unable to initialize CND link because of calls waiting in attendant queue.

**ACTION:** Wait for the queue to become idle and re-attempt the initialization. 

## CND — Caller's Name Display

### How the CND works

Caller's Name Display is a resident program. CND does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

The Caller's Name Display allows storage of user names in an Auxiliary computer such as a Property Management System (PMS). Problems with the link to the PMS are indicated by CND messages.

### CND messages

#### CND001

CND link input/output block is missing.

**ACTION:** Check the CPND database through the background terminal.

#### CND002

CND link status block is missing.

**ACTION:** Check the CPND database through the background terminal.

#### CND003

Garbage character receive on the CND link.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

### CND004

Lost partially assembled message.

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Wrong parameter passed to procedure CND\_LINK\_MSG\_CR.

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Noisy CND Link.

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Slow response on CND link.

**ACTION:** Contact your technical support group.

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CND link is down.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

**CND010**

CND messages are lost.

**ACTION:** Contact your technical support group.

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CND link queue is not empty.

**ACTION:** Information only, no action required.

**CND012**

Cannot synchronize the CND link.

**ACTION:** Refer to the *maintenance input/output guide* and disable and re-enable the PMS link. If the CND SDI is programmed as a TTY use LD 37. If the CND SDI is programmed as an AML, use LD 48. If the PMS link is used with the hospitality feature through Meridian Mail, logon and check the port.

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Attempt to acquire CND name block with length zero.

**ACTION:** Ensure that this is the command you wanted to use.

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Not enough memory for CND name block.

**ACTION:** Check to make sure all unused names have been deleted. Disable the PMS link and re-enable it.

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Out of boundaries for CND name block.

**ACTION:** Check to make sure you have up to 27 characters for the CPND name. Also verify that the XPLN does not exceed the MXLN.

**CND017**

Pointer corruption while trying to remove name block.

**ACTION:** Contact your technical support group.

# CND

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### CND018

Name block corruption.

**ACTION:** Re-enter the name by using the SEt CPnd command from the background terminal.

### CND021

Wrong TN in the Call Register.

**ACTION:** No action required, but if the error continues contact your technical support group.

### CND022

Special name table does not exist.

**ACTION:** Check the CPND database through the background terminal and re-enter the command.

### CND023

Display's customer does not match unit's customer.

**ACTION:** Check and re-enter name through the background terminal.

### CND024

Broken attendant queue.

**ACTION:** Information only, but if the error continues contact your technical support group.

### CND025

Unable to initialize CND link because of calls waiting in attendant queue.

**ACTION:** Wait for the queue to become idle and re-attempt the initialization. 

## CNF — LD 38 Conference Circuit

### In this chapter

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| CONF — Conference . . . . .                         | 387 |
| CONF/TDS — Conference Tone and Digit Switch . . . . | 388 |
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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter in this guide.

## How the CNF works

LD 38 is used to detect and isolate circuit faults on the system conferencing equipment.

LD 38 can detect the following problems on the conference circuit:

- ◆ channel faults on the network card which interfaces a conference card to the system
- ◆ channel faults on the conference card
- ◆ conference faults associated with conferee group numbers
- ◆ switching faults controlling the attenuation feature

The overlay is used to do the following:

- ◆ enable a specific conference card
- ◆ disable a specific conference card
- ◆ check the status of channels and conferee groups
- ◆ clear alarms and displays

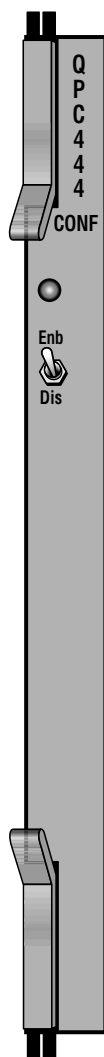
The overlay allows complete manual control in establishing a test conference, thus allowing the user to listen for noise and distortion.

The following are included:

- ◆ selection of a specific conference card
- ◆ selection of a specific conferee group
- ◆ stepping through all free channels and groups with special test conference



## CONF – Conference



553-0180T CFN(CCD)

The conference circuit uses two multiplex loops and is located in a network card position in the network shelf. The card contains both conference and network circuitry and uses one network card slot location.

### Purpose

The conference circuit card can theoretically connect up to 30 people in a single conference. Practically, this number is limited by the trans-hybrid loss in the line circuits, so that a reasonable number of people in a single conference is somewhere between 6 and 12 parties. The card can originate a mix of multi-party conferences, for example, three in one conference, four in another and so on, provided the total number of conferees does not exceed 30.

### Function

The conference card captures a full frame of PCM serial data from the network, that is, eight sample bits from each of the 30 time slots. The eight sample bits of a given time slot are re-configured to be available in a parallel and decoded to a 14-bit linear sample. All the linear samples from the time slots associated with a given conference are added. Each conferee has his linear sample subtracted from the total for the conference. This difference is then compressed into an 8-bit PCM sample, which is returned serially to the conferee's time slot via the network.

System software provides eight levels of attenuation for each conferee to reduce singing and background noise. Software can also select a specific conferee for listen only, as in Music On-Hold and Wake Up.

### Features

The face plate includes:

- ◆ a LED, when lit indicating a disabled card
- ◆ an ENB, DIS switch to hardware enable or disable the card

Conference cards are available with a warning tone to inform conferees that a conference is progress. The tone can be enabled or disabled by a switch mounted on the face plate.

Conference cards are slot addressed.

## CONF/TDS — Conference Tone and Digit Switch



The CT card combines the functionality of the existing conference and tone and digit switch. It occupies one network slot and will use two network loops.

### Purpose

The conference portion of the CT card remains the same, except that A or  $\mu$ law is now provided. The T&DS portion of the card provides 256 tones, Music Trunk Interface (MTI) and Multifrequency Sender (MFS) tones.

### Function

**Conference** — The selection of A law or  $\mu$ law is set in the software according to a country code. The code information is downloaded from the CPU to an on board CT microprocessor unit, which sets the card in the proper companding mode.

**T&DS** — The 256 tones are generated from 1Mega-bit EPROM.

A Master Cadence Table (MCT) will store up to 256 ringing cadences. The MCT table is created by the user for their particular country and is down loaded from the CPU during CT card enabling or initialization. Default is the North American MCT. The CT microprocessor firmware is used to generate the cadences, freeing the CPU for other tasks.

Music Trunk Interface, for certain international markets, uses external cards providing eight channels of Music Announcements, record tones and cadences. These announcements can come from an analog Music Trunk or a Kapsch Digital announcer.

Multi Frequency Sender tones are provided for the signaling of ANI digits over CAMA trunks to toll switching CAMA, TOPS or TSPS offices.

## Features

The face plate includes:

- ◆ a LED for Conf and a LED for TDS when lit indicates a disabled function
- ◆ a Enb, Dis switch to hardware enable or disable the card
- ◆ a J1 connector to attach a Music Trunk Interface

The component side of the card contains a switch to set attenuation levels and the warning tone to on or off, and a strap to set the warning tone level.

# CNF

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| CNF common commands |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Command             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                        | Release       |
| <b>Clear</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |
| <b>CDSP</b>         | Clears the maintenance display on the active CPU.                                                                                                                                                                                                                                                                                                                                                                                                  | basic-1       |
| <b>CMIN ALL</b>     | Clear minor alarm indication on all attendant consoles.                                                                                                                                                                                                                                                                                                                                                                                            | basic-1       |
| <b>CMIN c</b>       | Clear minor alarm indication on attendant consoles for customer c.                                                                                                                                                                                                                                                                                                                                                                                 | basic-1       |
| <b>Status</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |
| <b>STAT I s c u</b> | List conference card and group used by specified TN.<br><br>Lists which conference card and conferee group is being used by the specified terminal number.                                                                                                                                                                                                                                                                                         | basic-1       |
| <b>STAT loop</b>    | Provide status of conference card loop.<br><br>Output format is:<br><br><b>CNFC N DSBL N BUSY</b> = number of conferee groups disabled and busy<br><br><b>CHAN N DSBL N BUSY</b> = number of channels disabled and busy<br><br><b>UNEQ</b> = card is not equipped in the system<br><br><b>DSBL</b> = card is disabled in software<br><br><b>FAULTY HW: NO RESPONSE</b> = loop identified as faulty by the LRIP function. Refer to the FHW chapter. | basic-1       |
| <b>Print</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |
| <b>IDC</b>          | Print the IDs of both CMDUs and the active IOP.<br><br>The printout appears in the following format:<br><b>pppppppppp rrssss cccccccc</b><br><b>pppppppppp</b> = PEC code<br><b>rr</b> = Release number<br><b>ssss</b> = Serial number<br><b>ccccccc</b> = Comments (not always be present)                                                                                                                                                        | 51C/61C/81-19 |
| <b>ICD CMDUs</b>    | Print the ID for the CMDU.<br><br><b>n</b> = Core number (0 or 1) If n is not entered, card ID information is printed for both CMDUs.                                                                                                                                                                                                                                                                                                              | 51C/61C/81-19 |
| <b>IDC IOP</b>      | Print out the ID of the active IOP.                                                                                                                                                                                                                                                                                                                                                                                                                | 51C/61C/81-19 |

**CNF common commands (continued)**

| Command               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Release |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Disable device</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
| <b>DISL loop</b>      | Disable conference loop.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | basic-1 |
| <b>DISX loop</b>      | <p>Disable NT8D17 Conference/TDS card on loop L and L - 1.</p> <p>Disables all functions on the NT8D17 Conference/TDS card. Both the even numbered TDS/MFS loop and adjacent conference loop are disabled. Loop = 1, 3, 5. 159</p> <p><b>Note 1:</b> The DISL and ENLL commands can be used on the odd number loop for the conference functions provided the card has not been hardware disabled by the faceplate switch. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card.</p> <p><b>Note 2:</b> This command can be used in LD 34, LD 38 and LD 46.</p>                                                                                                                                                                                                                                                                                                                                                      | basic-1 |
| <b>Enable</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
| <b>ENLL loop</b>      | <p>Enable conference loop.</p> <p><b>Note 1:</b> Enabling more than 16 conference loops may cause system to lock-up.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | basic-1 |
| <b>Enable</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
| <b>ENLX loop</b>      | <p>Enable NT8D17 Conference/Ts card on loop L and L-1.</p> <p>Enables all functions on the NT8D17 Conference/TDS card. Both the even numbered TDS/MFS loop and adjacent conference loop are enabled. Loop = 1, 3, 5... 159</p> <p>If one of the loops is already enabled, it is disabled and then both loops are enabled.</p> <p>This command initiates card tests and downloads software.</p> <p><b>Note 1:</b> The DISL and ENLL commands can be used on the odd number loop for the conference functions, provided the card has not been hardware disabled by the faceplate switch. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card.</p> <p><b>Note 2:</b> This command can be used in LD 34, LD 38 and LD 46.</p> <p><b>Note 3:</b> The Conf/TDS card is not enabled automatically when it is inserted.</p> <p><b>Note 4:</b> Enabling more than 16 conference loops may cause the system to lock-up.</p> | basic-1 |

# CNF

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| CNF common commands (continued)        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Release |
| <b>List</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
| <b>LCNF loop</b>                       | List busy and disabled conference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | basic-1 |
| <b>Test and manual conference test</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
| <b>CNFC loop</b>                       | Test conference loop.<br><br>Tests conference loop for channel, group and switching faults.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |
| <b>CNFC MAN loop g</b>                 | Set up for manual conference on conference group g, following the steps outlined in the <i>Circuit card installation and testing NTP— Acceptance tests — Conference cards</i> .<br><br>The conference group range is 1-15. Only one manual conference is allowed at a time.<br><br>After this command, any telephone dialing SPRE 93 enters the conference. SPRE is the special service prefix for the system.<br><br>Going on-hook from that telephone takes it out of the conference. The END command removes all telephones in the manual conference.<br><br>If CNFC MAN command is entered from a maintenance telephone, the telephone automatically becomes part of the manual conference. | basic-1 |
| <b>CNFC STEP</b>                       | Ready system terminal for testing conference groups.<br><br>This command puts the system TTY into a special command mode for testing various channels and conferee groups audibly. Two telephones are used: one to monitor and one to act as a signal source. The CNFC MAN command is first used to set up the 2-party conference.<br><br>By entering Con the TTY, the conference will step on to the next available channel.<br><br>Entering G will step to the next available conferee group. Entering an asterisk (*) will revert back to the normal command mode.<br><br>Entering END or aborting LD 38 releases the manual conference.                                                     |         |

**CNF common commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**CNFC STEP**

continued

The Manual Conference Test is performed by stepping through conference channels and groups. After each step, listen for noise. Noise indicates a faulty card.

This test should be run when users complain of noisy conferences.

A time slot is assigned to a telephone in a conference and another is assigned to the conference card. In other words a pair of time slots are used. This pair is referred to as a conference channel. There are 16 channels for every conference group on a conference card. Because channel 0 is applied to idle time slots, only 15 channels are actually used. The first channel assigned is 15 followed by 14 and so on down to channel 1.

A conferee group is all the phones in a single conversation, with the conference card using a number to identify all parties in that conference. The maximum number of conference groups controlled by a conference card is 10, in other words, 10 three party conferences, utilizing 30 time slots, or 15 channels. The groups are assigned numbers from group 15 down to group 6. As four bits are required in the conferee group register to address a maximum of 10 groups, the register has the capability to count from 0 to 15. The test however will check for 15 conferee groups. Group 0 is not tested.

**End****END**

Abort all current test activity.

basic-1

## CNF messages

### CNF000

Program identifier.

**ACTION:** The CNF program is loaded and ready for you to re-enter the commands.

### CNF001

Invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

### CNF002

Invalid argument.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### CNF003

Customer nonexistent or out-of-range. Range is 0 to 31 inclusive.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### CNF004

Loop or conferee group out-of-range. Loop ranges are 0 to 158 and conferee group range is 1 to 15.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### CNF005

Unequipped or out-of-range TN. Ranges are: Loop, 0 to 158; Shelf, 0 to 3; Card, 1 to 10; Unit, 1 to 15.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### CNF006

Requested loop is not defined in the system or is not a conference group.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.



**CNF007**

Requested loop has been disabled.

**ACTION:** Use ENLL 1 to enable the loop.

**CNF008**

Requested conference loop is in use.

**ACTION:** Wait until the loop is free.

**CNF009**

The CNFC STEP command requires a 2-party conference. More or fewer sets are not allowed.

**ACTION:** Ensure that only two sets are in conference. If not, use END command to cancel the conference. Use the CNFC MAN L C command to set up 2 manual conferences by dialing SPRE 93 on any two sets, where SPRE is the customer's Special Service Prefix code.

**CNF020 loop**

Conference card failed to respond.

**ACTION:** Check the enable switch on the card. If the card still does not respond, replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared. If the fault persists after the conference card is replaced, replace the Peripheral Signaling card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CNF021 loop**

Channel fault found on the Conference card.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.verify that the fault is cleared.

**CNF022 loop**

Channel fault found on the Conference card.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CNF023 loop**

Conference fault found with one or more conferee groups on conference card. May also be a faulty network card.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared. If the problem persists, replace the faulty network card as per the *Hardware replacement* guide.

## **CNF024 loop**

Attenuation feature is not working on conference card. May also be a faulty network card.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared. If problem persist replace the faulty network card as per the *Hardware replacement* guide.

## **CNF025 loop**

Listen-only feature is not working on the Conference card.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CNF026**

Attenuation level 12.2 dB is faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CNF027**

Attenuation level 10.4 dB is faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **CNF028**

Attenuation level 8.2 dB is faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CNF029**

Attenuation level 7.2 dB is faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CNF030**

Attenuation level 5.4 dB is faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CNF031**

Attenuation level 4.0 dB is faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CNF032**

Attenuation level 1.2 dB is faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CNF033**

TSM memory faulty.

**ACTION:** Replace the conference card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**CNF100**

Cannot use the ENLX (Enable) or DISX (Disable) commands on a non-XCT card.

**ACTION:** Use ENLL 1 to enable a conference card. Use DISL 1 to enable a conference card.

**CNF101**

The XCT card is already enabled/disabled.

**ACTION:** Information only, no action required.

**CNF102**

The Conference/TDS card did not receive the message verifying download completion within six seconds, after the ENLX command.

**ACTION:** Use DISX to disable the card and re-enter the ENLX command.

**CNF103**

The Conference card did not receive the self test result within 10 seconds, after the CNFC I command.

**ACTION:** Wait a few minutes and then re-enter the command.

**CNF104**

Received an unexpected message from the Conference/TDS card.

**ACTION:** Use the DISX command to disable the card and re-enter the ENLX command.

**CNF107**

Superloop numbers must be a multiple of 4.

**ACTION:** Information only, no action required.

**CNF108**

Shelf parameter is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**CNF109**

Card parameter is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**CNF110**

Unit parameter is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command. 

## CNI — LD 135 Core to Network Interface

### In this chapter

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## How the CNI works

LD 135 provides diagnostic and maintenance information for Options 51/51C/61/61C/81 machines. It provides a means of performing the following functions.

- ◆ clearing minor and major alarms
- ◆ clearing and printing maintenance display contents for the primary Core
- ◆ testing the idle Core
- ◆ displaying CP card status and ID
- ◆ enabling and disabling CNI cards
- ◆ displaying CNI card ID and status
- ◆ testing SIMMs, inactive CNIs, and standby Core during daily routines
- ◆ switches Cores when in redundant mode
- ◆ checks primary CNIs, checks for Core redundancy, and attempts to switch Cores during midnight routines

### CNI common commands

| Command         | Description                                                                                               | Release       |
|-----------------|-----------------------------------------------------------------------------------------------------------|---------------|
| <b>Clear</b>    |                                                                                                           |               |
| <b>CDSP</b>     | Clear maintenance displays.<br><br>This command sets the maintenance display for the primary CP to blank. | 51C/61C/81-19 |
| <b>CMAJ</b>     | Clear major alarm, and reset power fail transfer.                                                         | 51C/61C/81-19 |
| <b>CMIN ALL</b> | Clear minor alarm indication for all customers.                                                           | 51C61C/81-19  |
| <b>CMIN a</b>   | Clear minor alarm indication for customer a.                                                              | 51C61C/81-19  |

## CNI — Core to Network Interface



553-0182T CNI(CNI)

### Purpose

The CNI combines the functions of two Segmented Bus Extenders. Three CNI cards are used to connect the Core to five network groups.

### Function

The CBT faceplate is blank; however, a LED on the component side may become visible at certain viewing angles. The LED for Core side 1 is on, and the LED for Core side 0 is off.

### Features

The CNI faceplate includes the following features:

- ◆ two LEDs to indicate the status of each port, and a light to indicate the inactive Core
- ◆ all CNI card LEDs light to indicate the inactive Call Processor or Core side
- ◆ Core Bus Terminator

**CNI commands**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Status CNI**

**STAT CNI c s p** Get the status of all configured CNIs. 51C/61C/81-19

Also prints the Network Group number of both ports on each CNI. To get the status of a specific CNI port, enter the following information. Entering only STAT CNI gets the status for all CNI ports.

**c** = Core number (0 or 1)

**s** = Slot number (8-12)

**p** = Port number (0 or 1)

If the P is not entered, the status of both ports is printed.

If the status is **DSBL** (Disabled), one or more of the OOS reasons may appear. What actually appears are the numbers associated with the OOS text. as follows:.

**0** = CP local bus parity threshold exceeded.

Contact your technical support group.

**1** = CP card HPM timeout threshold exceeded.

**Action:** Contact your technical support group.

**8** = Unconfigured CNI card.

**Action:** Refer to the *administration input/output guide*. Use LD 17 CEQU to program CNI.

**9** = Port has been disabled by craftsperson.

**Action:** Information only. Take appropriate action as required.

**10** = Device is not accessible.

**Action:** Install a CNI card following the steps in the *Hardware replacement* guide.

**16** = CNI to 3PE cable 1 on specified card and port lost.

**Action:** Check both connector ends of the CNI-3PE cable.



**CNI commands (continued)**

| Command                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Release |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>STAT CNI c s p</b><br>(continued) | <p><b>17</b> = CNI to 3PE cable 2 on specified card and port lost.</p> <p><b>Action:</b> Check both connector ends of the CNI-3PE cable.</p> <p><b>18</b> = 3PE power lost.</p> <p><b>Action:</b> Check the power supply circuit breakers on the network shelf where the 3PE is located and reset if required. If the circuit breaker trips replace the power supply card following the steps in the <i>Hardware replacement</i> guide. If the circuit breaker trips after replacing the power supply card, remove all cards and reset the circuit breaker. If the circuit breaker trips after all cards removed, replace the shelf backplane following the steps in the <i>Hardware replacement</i> guide. If the circuit breaker does not trip after all the cards are removed, replace the network shelf cards one at a time until the card causing the circuit breaker to trip is found, then replace the card(s) following the steps in the <i>Hardware replacement</i> guide.</p> <p><b>19</b> = 3PE has been manually disabled.</p> <p><b>Action:</b> Information only. Take appropriate action as required.</p> <p><b>20</b> = CNI card has been manually disabled.</p> <p><b>Action:</b> Information only. Take appropriate action as required.</p> <p><b>21</b> = Card test failed.</p> <p><b>Action:</b> Replace the CNI card following the steps in the <i>Hardware replacement</i> guide. After replacing the card verify that the fault is cleared.</p> <p><b>22</b> = Port test failed.</p> <p><b>Action:</b> Replace the CNI card following the steps in the <i>Hardware replacement</i> guide. After replacing the card verify that the fault is cleared.</p> |         |

**CNI commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**23** = Extender disabled by Meridian 1 initialization.

**Action:** Use the ENL CNI command to enable the extender.

**24** = Port interrupt line 0 disabled.

**Action:** Contact your technical support group.

**25** = Port interrupt line 1 disabled.

**Action:** Contact your technical support group.

**26** = Port interrupt line 2 disabled.

**Action:** Contact your technical support group.

**27** = Port interrupt line 3 disabled.

**Action:** Contact your technical support group.

**Test CNI port**

|                       |                    |               |
|-----------------------|--------------------|---------------|
| <b>TEST CNI c s p</b> | Test the CNI port. | 51C/61C/81-19 |
|-----------------------|--------------------|---------------|

**c** = Core number (0 or 1)

**s** = Slot number (8-12)

**p** = Port number (0 or 1) If the P is not entered, both ports are tested.

This command can test Standby CNIs as well as active CNIs that are out-of-service.

This may take a few minutes because of the time required to reestablish memory shadowing and contents. When the command is successful, OK is printed. If it is not successful, an error message is printed.

**Disable CNI port**

|                      |                       |               |
|----------------------|-----------------------|---------------|
| <b>DIS CNI c s p</b> | Disable the CNI port. | 51C/61C/81-19 |
|----------------------|-----------------------|---------------|

**c** = Core number (0 or 1) This must be the standby side. Disable the active side if the CNI is not in service.

**s** = Slot number (8-12)

**p** = Port number (0 or 1)

**CNI commands (continued)**

| Command                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                         | Release       |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Enable CNI port</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |
| <b>ENL CNI</b><br><b>c s p</b> | <p>Enable CNI port.</p> <p><b>c</b> = Core number (0 or 1)<br/> <b>s</b> = Slot number (8-12)<br/> <b>p</b> = Port number (0 or 1)</p> <p>If the P is not entered, both ports, and the card itself are enabled. A port cannot be enabled if the card is disabled. Enabling the CNI card will also enable the 3 Port Extender card.</p>                                                                                                              | 51C/61C/81-19 |
| <b>Print CNI ID</b>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |
| <b>IDC CNI s</b>               | <p>Print the card ID for the CNI on the active side.</p> <p><b>s</b> = Slot number (8-12)</p> <p>The printout appears in the following format: <b>x y</b><br/> <b>ppppppppaa rrssss cccccc</b><br/> <b>x</b> = Core number (0 or 1)<br/> <b>y</b> = Slot number (8-12)<br/> <b>pppppppp</b> = PEC code<br/> <b>aa</b> = Attribute code<br/> <b>rr</b> = Release number<br/> <b>ssss</b> = Serial number<br/> <b>ccccc</b> = Comments (optional)</p> | 51C/61C/81-19 |

## CNI messages

### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

#### CNI000 CNIP x y z: Intermittent interrupt occurring.

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

#### CNI001 CNIP x y z: CNI-3PE Cable 1 (top) detected.

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

#### CNI002 CNIP x y z: CNI-3PE Cable 1 (top) lost.

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI003 CNIP x y z: CNI-3PE Cable 2 (bottom) detected.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI004 CNIP x y z: CNI-3PE Cable 2 (bottom) lost.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI005 CNIP x y z: Remote Power (3PE) Detected.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI006 CNIP x y z: Remote Power (3PE) Lost.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI007 CNIP x y z: 3PE switch has been enabled.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI to verify the status of the CNIs.

**CNI008 CNIP x y z: 3PE switch has been disabled.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards.

Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI009 CNIP x y z: Event Interrupt Lost, mask reg=n.**

**Reenabling all interrupts.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required.

**CNI010 CNIP x y z: Faceplate switch enabled.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required

**CNI011 CNIP x y z: Faceplate switch disabled.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required

**CNI012 CNIP x y z: Putting Port into Disabled mode.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required.

**CNI013 CNIP x y z: Putting port into Normal/Enabled mode.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required.

**CNI020 CNIP x y z: Failure to change port mode.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards.  
Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI021 CNIP x y z: Port has been placed into Normal mode.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required.

**CNI022 CNIP x y z: Port has been placed into Disable mode.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required

**CNI023 CNIP x y z: EI a register.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI024 CNIP x y z: ICC/Default values check.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI025 CNIP x y z: Loopback address.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI026 CNIP x y z: Loopback address parity.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.



**CNI027 CNIP x y z: Loopback address parity invert.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI028 CNIP x y z: Loopback data LSB.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI029 CNIP x y z: Loopback data parity LSB.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI030 CNIP x y z: Loopback data MSB.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI031 CNIP x y z: Loopback data parity MSB.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the cables on the core module backplane between the CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI032 CNIP x y z: Event interrupts out of sequence.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI033 CNIP x y z: Event interrupts lost.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI034 CNIP x y z: Event interrupt time-out test.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI035 CNIP x y z: Read strobe test.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI036 CNIP x y z: Write strobe test.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check that the cables on the core module backplane between CNI and 3PE for bent pins or improper connections. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI037 CNIP x y z: Event generation circuitry test.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI050 CNIP x y z: Failure to access CNI Port hardware.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the CNI enable/disable switch. Use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI051 CNIP x y z: Failure to unmask event interrupt.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards.

Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI052 CNIP x y z: Mask a does not match. Interrupt being unmasked.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards.

Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI053 CNIP x y z: Mask a does not match, Interrupt being masked.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards.

Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI054 CNIP x y z: Could not find the source of the interrupt.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use STAT CNI and TEST CNI to test the CNI cards.

Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI055 CNIP x y z: Testing the port.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required.

**CNI056 CNIP x y z: Interrupt line x is STUCK, unmasking line.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use DIS CNI c s p and ENL CNI c s p to clear the interrupt. If the interrupt does not clear, use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI060 CNIP x y z: Incorrect release. Option 81 must run X11 release 18 or later.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Have your technical support group contact Nortel Technical Assistance Service for the correct software release.

**CNI061 CNIP x y z: LBA=a, LBD=b, BERZ=c, CD=d, SR=e.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Information only, no action required.

**CNI062 CNIP x y z: The remote device is not accessible.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Use DIS CNI c s p and ENL CNI c s p. If the remote device is still not accessible, use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI064 cnipMon - Interrupt masked. Turn on “cnipMaskAutoRestore” to recover.**

**ACTION:** Use DIS CNI c s p and ENL CNI c s p to clear the interrupt. If the interrupt does not clear, use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI065 cnipMon - EILOST reported, mask = n.**

**ACTION:** Use DIS CNI c s p and ENL CNI c s p to clear the fault. If the fault does not clear, use STAT CNI and TEST CNI to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI066 cnipMon - Switch-over requested; side x is deemed better.**

**ACTION:** Use STAT CNI and TEST CNI on the suspected faulty side to test the CNI cards. Replace any components that fail following the steps in the *Hardware replacement* guide. After replacement, verify that the fault is cleared.

**CNI070 CNIP x y z: EI a register does not match. sw=n, hw=m. Restoring.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Contact your technical support group.

**CNI071 EI Unmasking line x failed. Mask Reg = n.**

**ACTION:** Contact your technical support group.

**CNI072 EI Masking line x failed. Mask Reg = n.**

**ACTION:** Contact your technical support group.

**CNI073 CNIP x y z: Maintenance Interrupt Threshold exceeded. Subsequent changes in 3PE/cable status will be ignored.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Check the 3PE and CNI-3PE cable (if applicable) and then use ENL CNI c s p to re-enable the CNI.

**CNI074 CNIP x y z: EI3 address repaired. EI3 address was set to: x. EI3 address restored to: y.**

**ACTION:** Contact your technical support group.

**CNI075 CNIP x y z: Cause for EI3 event unknown. Forcing the port into Normal mode.**

**x** = CNI core side (0-1)

**y** = CNI card slot (8-12)

**z** = CNI port (0-1)

**ACTION:** Contact your technical support group.

**CNI200 cnib a b configured but not present. Database mismatch.**

**ACTION:** Refer to the *administration input/output* guide to put the CNI card in the right slot if applicable. Use LD 22 PRT to check for the correct CNI and configuration. Use LD 17 to make appropriate changes if required. 





## CNV — LD 66 Conversion Program

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## How the CNV works

When upgrading the software from a generic release to a higher release, software conversion is the process of transferring the customer data (programmable data) to the higher release.

### Methods of software conversion

There are two ways to transfer customer data when upgrading the software:

- ◆ conversion programs that do it automatically, or
- ◆ load the new software and manually re-enter the customer data on a TTY.

The greater the difference between the old and new software and smaller line size, the more cost effective it is to manually re-enter the customer data.

### Conversion program procedures

#### Prior to X11 Rls 2

Prior to X11 release 2, but including X08 and X37, conversion was done by data dump, LD 43, onto the target tape. After a successful data dump, the system was then reloaded. Conversion was automatically done as part of the sysload routine.

#### X11 Rls 2 to X11 Rls 12

After X11 release 2 and up to X11 release 12, software data structures changed, requiring new conversion procedures. The conversion program and a new conversion overlay, LD 66, were issued on a separate tape or disk. Each release required its own unique conversion program.

#### X11 Rls 12 to present

From X11 release 12 and onward, conversion is again part of the sysload function, and no longer requires a separate conversion media. The conversion program is contained in the target software, and is called Automatic Inline Conversion.

For information on how to prepare and operate each generic's conversion program, consult the applicable product bulletins and the *Software Conversion* NTP.

## Conversion terms

**Source** — the software release currently running in the Meridian 1

**Target** — the software release you are converting to

**Media** — a tape or a disk(s) containing the software

## What takes place during an Automatic Inline Conversion

For a conversion without Auto Inline, the following steps are performed:

1. The EDD is loaded from the source media.
2. The source media is replaced with the target media
3. The Customer data is dumped to the target media
4. Sysload the target media software into memory
5. The Sysload sees that the customer data is not in the proper format for target release. It invokes the conversion program to convert the customer data to the right format.
6. Conversion is finished.

## What takes place during a conversion without Auto Inline

For a conversion without Auto Inline, the following steps are performed:

1. Insert conversion media
2. Load conversion program LD66, when CDD 000 prompt is given
3. Insert target media
4. Type CDD
5. Customer data from memory is converted on target media
6. Sysload target media software into memory
7. Conversion done

## CNV messages

### CNV000

Identification of program (not an error).

**ACTION:** The CNV program is loaded and ready for you to input commands.

### CNV100

Identification of program (not an error).

**ACTION:** Information only, no action required.

### CNV601 t c b TNB l s c u

Not enough unprotected memory for data.

**t** = Data block type, if **t** = TNB, then it is followed by **l s c u**

**c** = Customer number

**b** = Block number or route number if **t** = RDB

**ACTION:** Re-allocate or add more memory.

### CNV602 t c b TNB l s c u

Not enough protected memory for data.

**t** = Data block type, if **t** = TNB, then it is followed by **l s c u**

**c** = Customer number

**b** = Block number or route number if **t** = RDB

**ACTION:** Re-allocate or add more memory.

### CNV630

Wrong number of parameters.

**ACTION:** Re-enter the proper command.

### CNV631

Invalid command.

**ACTION:** Re-enter the proper command.

### CNV632

Invalid argument(s).

**ACTION:** Re-enter the proper command.

### CNV633

Wrong P\_CUST\_DATA length.

**ACTION:** Contact your technical support group.

## CNV634

Wrong P\_ROUTE\_DATA length.

**ACTION:** Contact your technical support group.

## CNV635

Warning: mismatched signaling and trunk type in PTRKBLOCK.

**ACTION:** Contact your technical support group.

## CNV636

Warning: some serious error in TNTRANSLATOR.

**ACTION:** Contact your technical support group.

## CNV637

Error: the conversion has already been run on this data.

**ACTION:** Contact your technical support group.

## CNV638

Insufficient protected memory to run conversion.

**ACTION:** Re-allocate or add more memory.

## CNV639 **t c b TNB l s c u**

Nil pointer to data block.

**t** = Data block type, if **t** = TNB, then it is followed by **l s c u**

**c** = Customer number

**b** = Block number or route number if **t** = RDB

**ACTION:** Contact your technical support group.

## CNV640 **TNB l s c u**

TN block has an invalid unit type.

**t** = Data block type, if **t** = TNB, then it is followed by **l s c u**

**c** = Customer number

**b** = Block number or route number if **t** = RDB

**ACTION:** Contact your technical support group.

## CNV641 **t c b**

Pointer does not point to correct data block.

**t** = Data block type, if **t** = TNB, then it is followed by **l s c u**

**c** = Customer number

**b** = Block number or route number if **t** = RDB

**ACTION:** Contact your technical support group.

# CNV

## 424 Conversion Program

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### **CNV642 RMB c b**

MR block number is greater than 99. See summary for output data.

**ACTION:** Contact your technical support group. 

## CSA — LD 48 Command and Status Link

Refer to the *maintenance input/output guide* for messages and descriptions. 

### CSA messages

#### CSA0110

The overloaded CSL MSDL port needs to be disabled before it can be enabled.

**ACTION:** Action: Place the AML LINK in the manually disabled mode with the command DIS AML x. Enable the Link with the command ENL AML x.





## CSC — Customer Service Change

### How the CSC works

Customer Service Change is a resident program. CSC does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

The CSC messages indicate problems and progress within the Attendant Administration and Automatic Set Relocation features.

### CSC messages

#### CSC001

Access code or password entered from console was incorrect.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### CSC002

Cannot log in because currently running overlay program refuses to leave.

**ACTION:** Contact your technical support group.

#### CSC003 x y

Start of attendant service change of a set. TN and Prime DN are given.

Output data is

**x** = TN (l s c u) of set

**y** = Prime DN of set

**ACTION:** Information only, no action required.

**CSC004**

The feature selected by the attendant is shown, together with the old and new contents.

**ACTION:** Information only, no action required.

**CSC005**

Change of set data has been completed.

**ACTION:** Information only, no action required.

**CSC006**

Someone else has logged in and replaced the Attendant Administration user.

**ACTION:** Contact your technical support group.

**CSC007**

An error was encountered trying to load an overlay program.

**ACTION:** Try again. If this message appears repeatedly, contact your technical support group.

**CSC010 x y**

The first message produced by a set relocation at the point the set leaves the system. Output data is:

**x** = old TN l s c u of set

**y** = ID code entered

**ACTION:** Information only, no action required.

**CSC011 x y**

The second message produced by a set relocation at the point the set re-enters the system. The output data is:

**x** = old TN l s c u of set

**y** = new TN l s c u of set

**ACTION:** Information only, no action required.

**CSC012 x**

A set cannot be relocated back in. The output data is:

**x** = old TN l s c u of set

**ACTION:** Refer to the *administration input/output guide* and use LD 21 PRT type SRDT to confirm the telephone TN. Use LD 10 or 11 to manually relocate the telephone back into the customer database if applicable.

**CSC013 x y**

A set reassigned back in has been deassigned as an Associate Set (AST) for a DN. Output data is:

**x** = TN **l s c u** of set

**y** = Prime DN of set

**ACTION:** Information only, no action required.

**CSC100 x l s c u**

Set Installation message indicating that a set or trunk **l s c u** has been installed using AINS, where x is the model number.

**ACTION:** Information only, no action required.

**CSC101 l s c u**

Set Installation message indicating that a set or trunk **l s c u** has been removed from the database using AINS.

**ACTION:** Information only, no action required.

**CSC102 DN nnnn NEW MARP l s c u**

The DN **nnnn** appearance for a MARP TN has been changed in Attendant Administration. The new MARP for DN **nnnn** has defaulted to TN **l s c u**.

**ACTION:** Information only, no action required.

**CSC104 x y z**

Flexible Call Forward No Answer DN (FDN) updated through User Selectable Call Redirection (USCR) from telephone.

**x** = TN **l s c u**

**y** = old FDN

**z** = new FDN

**ACTION:** Information only, no action required.

**CSC105 x y z**

Hunt DN updated through User Selectable Call Redirection (USCR) from telephone.

**x** = TN **l s c u**

**y** = old Hunt DN

**z** = new Hunt DN

**ACTION:** Information only, no action required.

**CSC106 x y z**

External Call Forward No Answer DN (EFD) updated through User Selectable Call Redirection (USCR) from telephone.

**x** = TN l s c u

**y** = old EFD

**z** = new EFD

**ACTION:** Information only, no action required.

**CSC107 x y z**

External Hunt DN (EHT) updated through User Selectable Call Redirection (USCR) from telephone.

**x** = TN l s c u

**y** = old EHT

**z** = new EHT

**ACTION:** Information only, no action required.

**CSC108 x y z**

Ring Cycle Option (RCO) updated through User Selectable Call Redirection (USCR) from telephone.

**x** = TN l s c u

**y** = old Ringing Cycle Option (RCO)

**z** = new RCO

**ACTION:** Information only, no action required.

**CSC109 x y**

Unacceptable Flexible Call Forward No Answer DN (FDN) dialed during User Selectable Call Redirection (USCR) programming from telephone. Invalid data was not stored.

**x** = TN l s c u

**y** = unacceptable FDN

**ACTION:** Check with the user to make sure that their data is correct and have them re-enter the command.

**CSC110 x y**

Unacceptable Hunt DN dialed during User Selectable Call Redirection (USCR) programming from telephone. Invalid data was not stored.

**x** = TN l s c u

**y** = unacceptable Hunt DN

**ACTION:** Check with the user to make sure that their data is correct and have them re-enter the command.

**CSC111 x y**

Unacceptable External Call Forward No Answer DN (EFD) dialed during User Selectable Call Redirection (USCR) programming from telephone. Invalid data was not stored.

**x** = TN l s c u

**y** = unacceptable EFD

**ACTION:** Check with the user to make sure that their data is correct and have them re-enter the command.

**CSC112 x y**

Unacceptable External Hunt DN (EHT) dialled during User Selectable Call Redirection (USCR) programming from telephone. Invalid data was not stored.

**x** = TN l s c u

**y** = unacceptable EHT

**ACTION:** Check with the user to make sure that their data is correct and have them re-enter the command.

**CSC113 x y**

Unacceptable Ringing Cycle Option (RCO) dialled during User Selectable Call Redirection (USCR) programming from telephone. Invalid data was not stored.

**x** = TN l s c u

**y** = unacceptable RCO

**ACTION:** Check with the user to make sure that their data is correct and have them re-enter the command.

**CSC118**

Multiple appearance of a DN that is associated with a DTM key is not permitted.

**ACTION:** Check to make sure your data is correct and re-enter the data.

**ACTION:**

**CSC1000 x y z**

Flexible Call Forward No Answer DN (FDN) updated with vacant DN through User Selectable Call Redirection (USCR) from telephone.

**x** = TN l s c u

**y** = old FDN

**z** = new vacant FDN of set

**ACTION:** Information only, no action required.

**CSC1001 x y z**

Hunt DN updated with vacant DN through User Selectable Call Redirection (USCR) from telephone.

**x** = TN l s c u

**y** = old Hunt DN

**z** = new vacant Hunt DN

**ACTION:** Information only, no action required.

**CSC1002 x y z**

External Call Forward No Answer DN (EFD) updated with vacant DN through User Selectable Call Redirection (USCR) from telephone.

**x** = TN l s c u

**y** = old EFD

**z** = new vacant EFD

**ACTION:** Information only, no action required.

**CSC1003 x y z**

External Hunt DN (EHT) updated with vacant DN through User Selectable Call Redirection (USCR) from telephone.

**x** = TN l s c u

**y** = old EHT

**z** = new vacant EHT

**ACTION:** Information only, no action required. 

# CSC

**434**    CSC — Customer Service Change

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## DBMT — Database Media Transfer

### DBMT messages

Database Media Transfer is a resident program. DBMT does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

#### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

**DBMT001 Unable to determine default floppy device name.**

**ACTION:** Contact your technical support group.

**DBMT002 Unable to determine floppy device name.**

**ACTION:** Contact your technical support group.

**DBMT003 Unable to determine file names for transfer.**

**ACTION:** Contact your technical support group.

**DBMT004 Unable to open floppy drive.**

**ACTION:** Be sure that the disk is properly inserted.

**DBMT005 Unable to create temporary Database file.**

**ACTION:** Contact your technical support group.

**DBMT006 Unable to create temporary Config. file.**

**ACTION:** Contact your technical support group.

**DBMT007 Unable to transfer Database to hard disk.**

**ACTION:** Contact your technical support group.

**DBMT008 Unable to append Database and Config. files into one file.**

**ACTION:** Contact your technical support group.

**DBMT009 Unable to rename Config. file to Database file for s option.**

**ACTION:** Contact your technical support group.

**DBMT010 Unable to restore file to original state.**

**ACTION:** Contact your technical support group.

**DBMT011 Unable to rename all files correctly.**

**ACTION:** Contact your technical support group.

**DBMT012 Unable to read Private sector from floppy disk.**

**ACTION:** Contact your technical support group.

**DBMT013 Too many disks are being used.**

**ACTION:** Contact your technical support group.

**DBMT014 Incorrect disk in drive.**

**ACTION:** Contact your technical support group.

**DBMT015 Unable to identify record type.**

**ACTION:** Contact your technical support group.

**DBMT016 Unable to read sector(s) from disk.**

**ACTION:** Contact your technical support group.

**DBMT017 Unable to write Database file to hard disk.**

**ACTION:** Contact your technical support group.

**DBMT018 Unable to write Config. file to hard disk.**

**ACTION:** Contact your technical support group.

**DBMT019 Incorrect Database record count. Was x should be y.**

**ACTION:** Contact your technical support group.

**DBMT020 Incorrect Config. record count. Was x should be y.**

**ACTION:** Contact your technical support group.

**DBMT021 Incorrect floppy disk in drive.**

**ACTION:** Insert disk A1.

**DBMT022 Read Private Sector(s): Unable to read sector(s) from floppy disk.**

**ACTION:** Contact your technical support group.

**DBMT023 Read Private Sector: Invalid floppy disk.****ACTION:** Contact your technical support group.**DBMT024 Read Private Sector: End of track 1 not found.****ACTION:** Contact your technical support group.**DBMT025 Read Private Sector: End of track 3 not found.****ACTION:** Contact your technical support group.**DBMT026 Get Record Type: Unable to identify record type.****ACTION:** Contact your technical support group.**DMBT027 Unused message.****ACTION:** Contact your technical support group.**DBMT028 Get Disk Buf: Unable to seek on floppy disk.****ACTION:** Contact your technical support group.**DBMT029 Get Disk Buf: Unable to read from floppy disk.****ACTION:** Contact your technical support group.**DBMT030 Append DB: Unable to seek DB on hard disk.****ACTION:** Contact your technical support group.**DBMT031 Append DB: Unable to seek Config, on hard disk.****ACTION:** Contact your technical support group.**DBMT032 Append DB: Unable to read from hard disk.****ACTION:** Contact your technical support group.**DBMT033 Append DB: Unable to write to hard disk.****ACTION:** Contact your technical support group.**DBMT034 Write DB: Unable to write to hard disk.****ACTION:** Contact your technical support group.**DBMT035 Write DB: Unable to write to hard disk.****ACTION:** Contact your technical support group.**DBMT036 Write DB: Unknown Database format.****ACTION:** Contact your technical support group.**DBMT037 Get Directory: Unable to read Private Sector from floppy disk.****ACTION:** Contact your technical support group.

**DBMT038 Get Directory: Unable to read sector(s) from floppy disk.**

**ACTION:** Check that diskette is in the correct drive. Check that the diskette is properly inserted.

**DBMT039 Close Files: Unable to close floppy device.**

**ACTION:** Contact your technical support group.

**DBMT040 Close Files: Unable to close Database file.**

**ACTION:** Contact your technical support group.

**DBMT041 Close Files: Unable to close Config. file.**

**ACTION:** Contact your technical support group.

**DBMT042 Rename All Files: Unable to rename secondary Database file to holding file.**

**ACTION:** Contact your technical support group.

**DBMT043 Rename All Files: Unable to restore files to original state.**

**ACTION:** Contact your technical support group.

**DBMT044 Rename All Files: Unable to rename secondary Config. file to holding file.**

**ACTION:** Contact your technical support group.

**DBMT045 Rename All Files: Unable to rename primary Database file to secondary file.**

**ACTION:** Contact your technical support group.

**DBMT046 Rename All Files: Unable to rename primary Config. file to secondary file.**

**ACTION:** Contact your technical support group.

**DBMT047 Rename All Files: Unable to rename new Database file to primary file.**

**ACTION:** Contact your technical support group.

**DBMT048 Rename All Files: Unable to rename new Config. file to primary file.**

**ACTION:** Contact your technical support group.

**DBMT049 Get File Names: Unable to determine primary Database file name.**

**ACTION:** Contact your technical support group.

**DBMT050 Get File Names: Unable to determine secondary Database file name.**

**ACTION:** Contact your technical support group.

**DBMT051 Get File Names: Unable to determine holding Database file name.**

**ACTION:** Contact your technical support group.

**DBMT052 Get File Names: Unable to determine temporary Database file name.**

**ACTION:** Contact your technical support group.

**DBMT053 Get File Names: Unable to determine primary Config. file name.**

**ACTION:** Contact your technical support group.

**DBMT054 Get File Names: Unable to determine secondary Config. file name.**

**ACTION:** Contact your technical support group.

**DBMT055 Get File Names: Unable to determine holding Config. file name.**

**ACTION:** Contact your technical support group.

**DBMT056 Get File Names: Unable to determine temporary Config. file name.**

**ACTION:** Contact your technical support group.

**DBMT057 Restore Files: Unable to restore temporary Database file.**

**ACTION:** Contact your technical support group.

**DBMT058 Restore Files: Unable to restore primary Database file.**

**ACTION:** Contact your technical support group.

**DBMT059 Restore Files: Unable to restore secondary Database file.**

**ACTION:** Contact your technical support group.

**DBMT060 Restore Files: Unable to restore temporary Config. file.**

**ACTION:** Contact your technical support group.

**DBMT061 Restore Files: Unable to restore primary Config. file.**

**ACTION:** Contact your technical support group.

**DBMT062 Restore Files: Unable to restore secondary Config. file.**

**ACTION:** Contact your technical support group.

**DBMT063 Unable to initialize floppy driver to 2 Mb on side: x.**

**ACTION:** Contact your technical support group.

**DBMT064 Unable to initialize floppy driver to 4 Mb on side: x.**

**ACTION:** Contact your technical support group. 

## DCH — LD 96 D-Channel Diagnostic

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Northern Telecom Publications for details. 

### DCH messages

#### DCH4288

The overloaded DCH MSDL port needs to be disabled before it can be enabled.

**ACTION:** Action: Place the D Channel in the manually disabled mode with the command DIS DCH x.

# DCH

**442** LD 96 D-Channel Diagnostic Reports

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## DLO — Disk Layout

Disk Layout is a resident program. DLO does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by either xxx0008 or xxx008.

## DLO messages

**DLO001 Unable to find symbol.**

**ACTION:** Contact your technical-support group.

**DLO002 Unable to read from file, error x.**

**ACTION:** Contact your technical-support group.

**DLO003 Unknown error code <codename>.**

**ACTION:** Contact your technical-support group.

**DLO004 Unable to get active CMDU. Cannot look up symbol**

**ACTION:** Contact your technical-support group. 🐾



## DSET — Digital Set Download

### How the DSET works

Digital Set Download is a resident program. DSET does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

Digital telephone set downloading takes place during a system reload.

### DSET messages

#### DSET000 DOWNLOAD 1 2 3 4 5 6 7 8

Digital-telephone set downloading has taken place. This information appears once during the system reload. Eight additional fields are associated with this output

Output format is:

**1** = number of SSD messages sent

**2** = number of M3000 telephone sets downloaded

**3** = number of Digital telephone sets downloaded

**4** = number of Digital attendant consoles downloaded

**5** = number of M3000 telephone sets that failed the download

**6** = number of Digital telephone sets that failed the download

**7** = number of Digital attendant consoles that failed the download

**8** = current real time clock 

# DSET

**446** Digital Set Download

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## DTA — LD 60 Digital Trunks

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Northern Telecom Publications for details. 



## DTC — LD 60 Digital Trunk Clock

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Northern Telecom Publications for details. 

# DTC

**450**   LD 60 Digital Trunk Clock Controller

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## DTD — LD 34 Dial Tone Detector

Go to *TDS — LD 34 Checking tone and digit switches* chapter. 

# DTD

**452** LD 34 Dial Tone Detector

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## DTI — LD 60 Digital Trunk Interface

Refer to the *maintenance input/output guide* for messages and descriptions.

Refer to ISDN Northern Telecom Publications for details. 

### DTI messages

#### DTI0209

Device locked by the Russian Call Monitoring feature. The command was not executed.

**ACTION:** Action: Contact your technical support group.

#### DTI4135 DO NOT PRINT

The DTI loop cannot be enabled unless the TMDI card is operational.

**ACTION:** Action: Ensure that the card is plugged in and then enable the card in overlay 96.

#### DTI4136 DO NOT PRINT

An attempt to enable the T1E1 application or port has failed.

**ACTION:** Action: Try ENLL again or the RST TMDI command in overlay 96.

#### DTI4137 DO NOT PRINT

An attempt to enable a T1E1 port timed out.

**ACTION:** Action: Try ENLL again or the RST TMDI command in overlay 96.

#### DTI4138 DO NOT PRINT

SET\_MSRLMISP\_PTR failed during the enabling of T1E1 port. Data corruption can occur.

**ACTION:** Action: Check for data corruption. Try a system initialization, but if it fails contact your technical support group.

# DTI

**454** LD 60 Digital Trunk Interface

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## DTM — LD 75 Digital Trunk Maintenance

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Northern Telecom Publications for details. 



## DTRK — LD 36, 41 Digital Trunks

Refer to the *maintenance input/output guide* for messages and descriptions.

Refer to ISDN Northern Telecom Publications for details. 

# DTRK

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## EDD — Equipment Data Dump

### In this chapter

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| Low memory warning .....      | 461 |
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## How the EDD works

The LD 43 Equipment Data dump (EDD) is used to keep data on the system storage device up-to-date. When data dump is invoked, data in the read/write memory (including any that has been changed or added) is written to the storage device at the location reserved for it.

The overlay can be invoked daily as part of the daily routine or loaded manually. An incremental data dump occurs during the daily routines if database changes have been made. Problems with the data dump operation are indicated by EDD messages.

The same commands apply to Options 51C/61C/81 and all other machines. Because Options 61C and 81 utilize two CMDUs and disk redundancy, the LD 43 commands apply to both sides of the system. Refer to the specific commands for the differences between Options 51C/61C/81 and other systems.

Following a successful EDD on Options 51C/61C/81, the Hardware Infrastructure message, **HWIxxx**, is output.

## When the data dump fails

In the event of an unsuccessful initial data dump, the programmable data on the tape or disk is suspect. Another data dump should be attempted on the same tape or disk. If the data dump is successful, a transient error is indicated and normal procedures can be resumed. If this second attempt also fails, *do not* attempt another data dump until the fault is isolated and corrected.

If the storage medium is not proved faulty and the storage device appears serviceable, data dumping to an OLD tape or disk may help to pinpoint the problem.

Except during the troubleshooting phase, any storage medium which has failed to data dump successfully must not be left in the storage device. Should a SYSLOAD occur with such a storage medium, the load may terminate abnormally with unpredictable results.

## Low memory warning

Unprotected data-store equal in size to the length of the records being written (for example, 512 words) must be available to the data dump overlay.

A low memory warning message **SCH603** is issued when spare unprotected data store falls below a given threshold. Once this warning message has been issued, it is not possible to perform a data dump, as the Meridian SL-1 requires spare unprotected data-store equivalent to the size of a record on the storage medium (for example, 512K words).

Users should ensure that these amounts of spare unprotected data-store are available before attempting to perform a data dump.

# EDD

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| EDD commands           |                                                                                                                                                                                                                                                                                                         |          |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Command                | Description                                                                                                                                                                                                                                                                                             | Release  |
| <b>Copy</b>            |                                                                                                                                                                                                                                                                                                         |          |
| <b>BKO</b>             | Copy data from the primary to the backup device.<br><br>Copy data base from the primary device (hard disk) to the back-up device (floppy disk). Applicable to systems with hard disk storage only.<br><br>For the Options 51C/61C/81, this command creates backups to floppy disks for the active CMDU. | basic-19 |
| <b>Begin data dump</b> |                                                                                                                                                                                                                                                                                                         |          |
| <b>EDD</b>             | Begin data dump.<br><br>For the Options 51C/61C/81, this command creates backups to floppy disks for both CMDUs when redundancy is in effect and both CMDUs have floppy disks inserted.                                                                                                                 | basic-19 |
| <b>Clear data dump</b> |                                                                                                                                                                                                                                                                                                         |          |
| <b>EDD CLR</b>         | Clear data dump inhibit flag.<br><br>This flag is set because SYSLOAD or the conversion programs detect incomplete or inconsistent equipment data. Exercise caution since the use of this option may result in incorrect data being written to tape.                                                    | basic-19 |
| <b>Save</b>            |                                                                                                                                                                                                                                                                                                         |          |
| <b>EDD CN</b>          | Save CND names (use prior to data dump).<br><br>Saves the names associated with DNs for Caller's Name Display.<br><br><b>Note:</b> Use EDD CN prior to data dump.                                                                                                                                       | basic-1  |
| <b>EDD HM</b>          | Save AWU, RMS and MR data with the data dump.<br><br>Saves Automatic Wake Up (AWU), Room Status (RMS) and Message Registration (MR) data.<br><br><b>Note:</b> This should be performed prior to a sysload or software conversion.                                                                       | basic-1  |

| EDD commands (continued)                 |                                                                                                                                                                                                                                                                                              |          |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Command                                  | Description                                                                                                                                                                                                                                                                                  | Release  |
| <b>Inhibit</b>                           |                                                                                                                                                                                                                                                                                              |          |
| <b>EDD IWC</b>                           | <p>Inhibits write check.</p> <p><b>Caution:</b> For Emergency Use Only. Inhibits write check. This command is useful when the standard commands for data dump fail and end-of-file cannot be found. It writes an end-of-file on tape and allows other commands to be invoked.</p>            | basic-1  |
| <b>EDD NBK</b>                           | <p>Inhibit database backup.</p> <p>Indicates that a database backup should not be performed after a data dump. Applicable to hard disk storage with floppy disk backup.</p>                                                                                                                  | basic-1  |
| <b>EDD NS</b>                            | <p>Inhibit tape far end spool.</p> <p>Tape will not spool to the far end and will not perform write test. Default option is SP.</p> <p>Overlay cannot be aborted until writing has either been completed or has failed.</p> <p>This command applies to systems equipped with tape units.</p> | basic-1  |
| <b>Write</b>                             |                                                                                                                                                                                                                                                                                              |          |
| <b>EDD NX</b>                            | <p>Write tape data records.</p> <p>Writes tape data records consistent in size with predefined system values. Default option is NX.</p>                                                                                                                                                      | basic-1  |
| <b>Data dump without XPEC/XNET audit</b> |                                                                                                                                                                                                                                                                                              |          |
| <b>EDD SA</b>                            | <p>This command is used to complete the data dump and bypass the software audit of Peripheral Controller and superloop data.</p>                                                                                                                                                             | basic-20 |

# EDD

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### EDD commands (continued)

| Command                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Release           |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>Spool</b>               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |
| <b>EDD SP</b>              | Spool tape to far end.<br><br>Spools tape to the far end in order to even the tension on the tape. Also writes a test record after the end of existing data to check for any write problems. If errors occur during test, data should remain intact.<br><br>This command applies to systems equipped with tape units.                                                                                                                                          | basic-1           |
| <b>Print</b>               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |
| <b>DAT</b>                 | Print the creation date of the main, secondary, or backup database.                                                                                                                                                                                                                                                                                                                                                                                            | op81-18           |
| <b>Bit dump</b>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |
| <b>PBXC6<br/>(ALLOWED)</b> | Bit dumped with PBX data block.                                                                                                                                                                                                                                                                                                                                                                                                                                | basic-1           |
| <b>Copy</b>                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |
| <b>RES</b>                 | Copy entire contents of back-up to primary device.<br><br>Copy entire contents of back-up device (floppy diskettes) to primary device (hard disk). Applicable to systems with hard disk storage.<br><br>For Options 51C/61C/81, this command copies the contents of the floppy disks on the active CMDU to both hard disks providing redundancy is in effect. If redundancy is not in effect, this command copies the floppy disk contents to the active CMDU. | basic-19          |
| <b>Swap</b>                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |
| <b>SWP</b>                 | Exchange (swap) main and secondary database files.                                                                                                                                                                                                                                                                                                                                                                                                             | 51C/61C<br>/81-18 |

## EDD messages

**EDD000**

Ready for commands.

**ACTION:** The EDD program is loaded and ready for you to input the commands.

**EDD001**

Storage device unequipped.

**ACTION:** Check to make sure your data is correct.

**EDD002**

Storage device busy.

**ACTION:** Wait until the tape unit, the floppy disk unit, or the mass storage unit is idle.

**EDD003**

Storage device not ready.

**ACTION:** Check that the tape cartridge or diskettes are correctly seated.

**EDD004**

Storage medium is write protected.

**ACTION:** Use a coin to position the arrow on the tape cartridge away from the word SAFE.

**EDD005**

Tape unit has sensed an early warning mark while attempting to write a test record. The tape is probably full.

**ACTION:** Do not attempt to dump to remaining tapes. Contact your technical support group.

**EDD006**

Storage device read error.

**ACTION:** Attempt the data dump again.

**EDD007**

1. Storage device write error.

**ACTION:** Check the memory deallocation and attempt the data dump again. Contact your technical support group.

2. Received a TEMU011 message while backing up the database.

**ACTION:** Use TEST CMDU n and DATA CMDU n in LD 137 to check for a faulty CMDU. Replace the faulty components following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CIOD* chapter in this guide.

## EDD008

Storage device disabled.

**ACTION:** For MSI - Use ENL MSI x in LD 37 to enable the storage device. If the MSI does not enable and the fault does not clear, replace the MSI card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IOD* chapter in this guide.

For CMDU use DIS CMDU n and DIS IOP to disable both CMDUs and IOPs. Use ENL CMDU n and ENL IOP to re-enable the active CMDU and IOP. Try to data dump again. If you are successful, use the SYNC command to synchronize the CMDUs. If you need help with the commands or system responses refer to the *CIOD* chapter in this guide. If you are not successful, contact your technical support group.

## EDD009

1. A 90 minute time-out has occurred.

**ACTION:** An initialization is required to clear this fault condition. After the initialization, insert the patch.

2. Receiving time and date stamps on CORE x, and this message when using the SPCU command. All BUG/ERR/AUD messages buffered in CORE x are output.

**ACTION:** Check for a bad IOP card in CORE x. Check for any SCSI040, SCSI043 time-out messages while in CORE x. Contact your technical support group.

## EDD010

Invalid command or incorrect parameter.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.



**EDD011**

Successive records with identical record numbers track 1 (or 3).  
Refer to ERR014.

**ACTION:** Try again. If this message reappears contact your technical support group.

**EDD012**

1. Records out-of-order track 1 (or 3). See ERR014.

**ACTION:** Try again. If this message reappears contact your technical support group.

2. Receiving this message after upgrading to Release 18.

**ACTION:** Verify the tape identification of the system. Use LD 97 to check for modified ISM parameters. Refer to *Keywords* in the *administration input/output guide*.

**EDD013**

Successive records with identical record numbers track 2 (or 4).  
Refer to ERR014.

**ACTION:** Try again. If this message reappears contact your technical support group.

**EDD014**

Records out of order track 2 (or 4). Errors EDD11 to 14 have two parameters: the record number expected and the record number found. According to the pattern of errors, the storage medium may or may not be all right to load.

**ACTION:** Try again. If this message reappears contact your technical support group.

**EDD015**

Storage device has no existing data. Cannot dump.

**ACTION:** Check to make sure you have the proper disk in the storage device.

**EDD016**

Incorrect data. Dump is inhibited to prevent writing bad data to storage medium.

**ACTION:** Investigate and clear any SYSxxx messages which may appear concurrently with this message, then attempt to data dump onto a second or new copy of the storage medium. If the EDD016 is

printed again, enter the EDD CLR command. Reload the system from the new copy to check that the data is now valid. If this is done after a reload, the only further cause would be CED203.

On dual-memory systems, the indicated memory card should be retested and re-enabled. The data will be copied from the other memory. If this fails again or is a single memory system, use EDD CLR to dump data to a second copy of the storage medium. Reload and check any SYS or INI errors for data corruption.

## EDD017

Not enough unprotected data space available for the storage device buffer. The buffer requires the defined threshold number of words of unprotected data; for instance, the size of records to be written (the space is used only while the data dump is running).

**ACTION:** Use LD 29 to check the memory map. Contact your technical support group.

## EDD018

Error occurred during an attempt to write a test record. It may indicate storage medium or storage device problems.

**ACTION:** Refer to the *IOD* chapter and use the MSI diagnostics in LD 37 for more information. Use EDD SP to spool the tape and even the tension. The data on the tape should remain intact, as long as the SP option is used.

## EDD019

A faulty Map. The memory allocation map to be dumped is invalid.

**ACTION:** Use LD 29 to correct the dump map. The CLR option overwrites the error condition, but if used, the data will likely be lost at the next SYSLOAD.

## EDD020 c

EOF tape write fault; record count c (normally 9).

X08: Tape unit not idle.

**ACTION:** Attempt the data dump again using the EDD IWC command.

**EDD021**

Tape unit not idle.

**ACTION:** Use DIS TAPE in LD 37 to disable, and ENL TAPE in LD 37 to re-enable the tape interface and re-enter the command. If you need help with the commands or system responses refer to the *IOD* chapter in this guide.

**EDD022**

Data corrupted in tree block.

**ACTION:** Contact your technical support group.

**EDD023**

Double density loop has single density card in upper unit.

**ACTION:** Refer to the *administration input/output guide*. Use LD 10 or LD 11 to correct the database, and re-enter the command.

**EDD024**

Tape ID does not match system. An incorrect tape cartridge is being used.

**ACTION:** Contact your technical support group.

**EDD025 a b t**

The tape unit has sensed the early-warning mark but is unable to write an end-of-file mark. Two possible causes are: Record **a** does not match record **b**, or, record **b** is not a data record. For example, the record that was read was type **t** when a data record was expected.

**ACTION:** In either case, do not dump to the remaining tapes. Contact your technical support group.

**EDD026**

MSI is reading from the floppy backup instead of the hard disk primary device.

**ACTION:** Use MSI x in LD 37 to check for a faulty MSI. Replace the faulty MSI following the steps in the *Hardware replacement guide*. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IOD* chapter in this guide.

**EDD027**

End-of-data (EOD) sensed on the last disk in the set.

**ACTION:** Information only, no action required.

# EDD

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### EDD028

Floppy disk insertion timeout.

**ACTION:** You did not insert the next disk required by the system in time. Start the procedure again and watch the maintenance DTE for the prompt to insert the next disk.

### EDD029

Floppy disk is write protected.

**ACTION:** Remove write protect by positioning the disk slider to cover the square hole.

### EDD030

Floppy disk backup or restore function timeout.

**ACTION:** X08: Faulty map. The memory allocation map to be dumped is invalid. Use LD 29 to correct the dump map. The CLR option overwrites the error condition but the data will likely be lost at the next SYSLOAD.

### EDD031

Not all the floppy disks needed to complete the function are in the drives.

**ACTION:** Check to make sure you have all the floppy disks that are needed.

### EDD032

“Restore function done” was sensed before all floppy disks were restored.

**ACTION:** Try again. If this message reappears contact your technical support group.

### EDD033

Command not allowed for systems not equipped with a hard disk primary device.

**ACTION:** Ensure that this is the command you wanted to use.

**EDD034**

DIP switch 4 on the MSI (QPC584) card is set to the off position, and in the CFN data block, a hard disk has been redefined, causing this message when a data dump is performed. The floppies are being dumped to, and not the hard disk. Possible faulty MSI/EMSI/MDU if the switch settings are correct and a BKO receives the same response.

**ACTION:** Set 4 to on and enter BKO. If this message reappears, use MSI x to test for faults. Replace the faulty components following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IOD* chapter in this guide.

**EDD035**

Configured loops exceed system loop limit.

**ACTION:** Check for the correct machine type and refer to the *administration input/output guide* for loop limitations.

**EDD036**

Hard disk not ready.

**ACTION:** Use DIS MSI in LD 37 to disable and ENL MSI in LD 37 to re-enable the tape interface and re-enter the command. If the problem persists, replace either the disk interface or the hard drive. If you need help with the commands or system responses refer to the *IOD* chapter in this guide.

**EDD037**

Data error on the disk media.

**ACTION:** Replace the hard drive or the MDU card following the steps in the *Hardware replacement* guide. Verify that a data dump to the floppies can be performed. To do a data dump to the floppies, turn off switch 4 on the MSI card.

**EDD038**

The EDD HM command cannot be used because a Background Terminal is not equipped.

**ACTION:** Ensure that this is the command you wanted to use.

**EDD039**

An audit indicates Peripheral Controller and the superloop data do not agree. The datadump is aborted. During a data dump, Peripheral Controller and superloop data is audited to ensure that data matches and is otherwise correct. The data dump is aborted when a data discrepancy is found.

**ACTION:** To bypass the software audit and complete the data dump, enter the EDD SA command. To correct the data discrepancy, redefine the Peripheral Controller or superloop data using LD 97.

**EDD040 c**

It does not allocate storage either for ovflw\_ptr\_block or ovflw\_Index\_block.

**ACTION:** Remove all the existing authcodes for customer c, and create new authcodes.

**EDD041**

Corrupted Group Hunt (GPHT) data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 57 FFC to correct the Group Hunt data and LD 18 to correct the Group Hunt list(s). Perform an EDD to correct the primary storage medium.

**EDD047**

Insufficient UDATA for EDD GP.

**ACTION:** Initialize the system and retry the EDD GP command.

**EDD048**

No patches found on tape (for use with EDD GP option).

**ACTION:** Information only, no action required.

**EDD049**

Cannot do a GP option with a GP option.

**ACTION:** Information only, no action required.

**EDD050**

Attempt to dump card with wrong density.

**ACTION:** Refer to the *administration input/output guide*. Use LD 17 to correct the loop density and re-enter the command.

**EDD060**

Not able to allocate enough unprotected data-store (UDS) for authcode conversion. Auth data block and sorted table are not converted. The required number of words in UDS is displayed.

**ACTION:** Check the memory and add more if necessary.

**EDD074**

Conversion: number of leading digits to insert for digit manipulation table is greater than 20. The table is lost.

**ACTION:** Perform a system reload, or a parallel reload. Contact your technical support group for assistance.

**EDD075**

The digit manipulation table being converted is lost. Either 256 tables already exist or unprotected data store cannot be allocated.

**ACTION:** Refer to the *administration input/output guide*. Use LD 86 PRT DGT to check the table. If there are tables missing, it is due to data corruption. You need to perform a system reload, or a parallel reload. Contact your technical support group for assistance.

**EDD076**

The Classcode of the authcode being converted does not match any in the auth table. The authcode is discarded.

**ACTION:** Refer to the *administration input/output guide*. Use LD 88 PRT AUB to check the table. If there are tables missing, it is due to data corruption. You will need to perform a system reload, or a parallel reload. Contact your technical support group for assistance.

**EDD080**

GP option requires Supplementary Package (131).

**ACTION:** Have your technical support group contact Nortel Technical Assistance Service and order package 131.

**EDD081**

DP option requires Supplementary Package (131).

**ACTION:** Have your technical support group contact Nortel Technical Assistance Service and order package 131.

## **EDD082**

Numbers expected after EDD DP.

**ACTION:** Enter: EDD DP xx xx, where xx is the patch number.  
EDD DP only dumps data.

## **EDD083**

Patch number does not exist; is out-of-range; or is not tagged for saving. Occurs during an EDD DP operation.

**ACTION:** Contact your technical support group.

## **EDD100**

Corruption in FFC tree.

**ACTION:** Contact your technical support group.

## **EDD101**

This message is unique to Option 11. Your dynamic memory request has failed; there is not enough Unprotected data space available to buffer the Patch data. The Patch buffer requires 383 words; the Patches have not been saved.

**ACTION:** Increase your Unprotected memory size through Service Change and perform data dump.

## **EDD102**

There was a database conversion between the Source database and the Target Release issue. No backward data dump is allowed.

**ACTION:** Information only. Contact your technical support group if you need assistance.

## **EDD103**

Corruption has occurred in the FFC RPA tree.

**ACTION:** Contact your technical support group.

## **EDD104**

Corruption has occurred in the DN-PSA tree.

**ACTION:** Contact your technical support group.

## **EDD105**

Corruption has occurred in the System Parameter Blk.

**ACTION:** Contact your technical support group.



**EDD106**

The data of a set being moved by Automatic Set Relocation is not dumped because its originating TN is already occupied.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 SRDT to locate the set data not dumped. Use LD 10 or 11 to correct TN location.

**EDD107**

Flash ROM interface not idle. Option 11

**ACTION:** Perform a manual initialization and re-enter the command.

**EDD108**

Backup of data exceeded the time limit.

**ACTION:** Re-enter the command.

**EDD109**

Backup of data failed.

**ACTION:** Re-enter the command. If this message appears, contact your technical support group.

**EDD110**

Invalid flash ROM selection. Option 11

**ACTION:** Check for the correct hardware.

**EDD111**

Time limit exceeded for erasure of flash ROM. Option 11

**ACTION:** Re-enter the command.

**EDD112**

Security check failed. Invalid cartridge.

**ACTION:** Check the tape identification of the system. Check that the ISM parameters were modified in LD 97.

**EDD113**

Checksum of flash ROM failed. Option 11

**ACTION:** Contact your technical support group.

**EDD114**

Cannot find DSL data.

**ACTION:** Contact your technical support group.

## EDD115

Cannot find USID map.

**ACTION:** Contact your technical support group.

## EDD116

Cannot find protected Multipurpose ISDN Signaling Processor (MISP) loop block.

**ACTION:** Contact your technical support group.

## EDD117

TN of Agent key on ACD supervisor does not link to an ACD agent.

**ACTION:** Correct the database and re-attempt the command.

## EDD118

This message is unique to Option 11. The EDD DR1 command cannot be executed if a service change has been performed.

**ACTION:** Remove all the models and the ACD queues from the system, and re-enter the command. Contact your technical support group.

## EDD119

Corruption is detected in the data structure for TTY x.  
Data for TTY x is not dumped.

**ACTION:** Contact your technical support group.

## EDD127

Insufficient protected data space to buffer an MWNS dump table. The MWNS data dump has not been completed.

**ACTION:** Contact your technical support group. 

## EHM — Automatic Patch Retention

The EHM messages are related to the Automatic Patch Retention Tool. This tool is to be used only by qualified personnel.

EHM messages are normally beyond the capabilities of anyone except Northern Telecom, licensee software engineers, and code writers. Therefore EHM messages will only appear in the fault clearing guide binder used by technical support groups. 

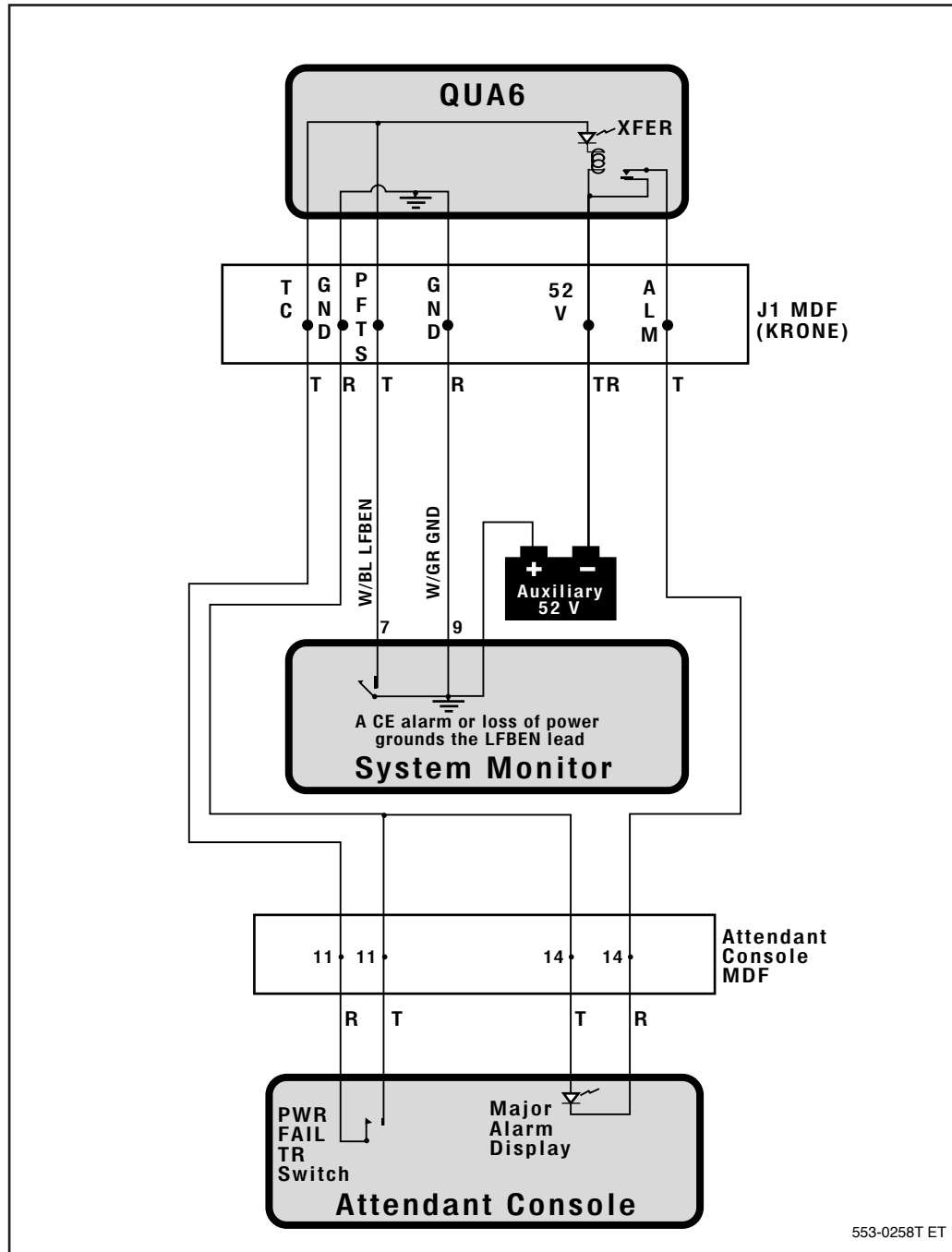


## Emergency Transfer (PFTU)

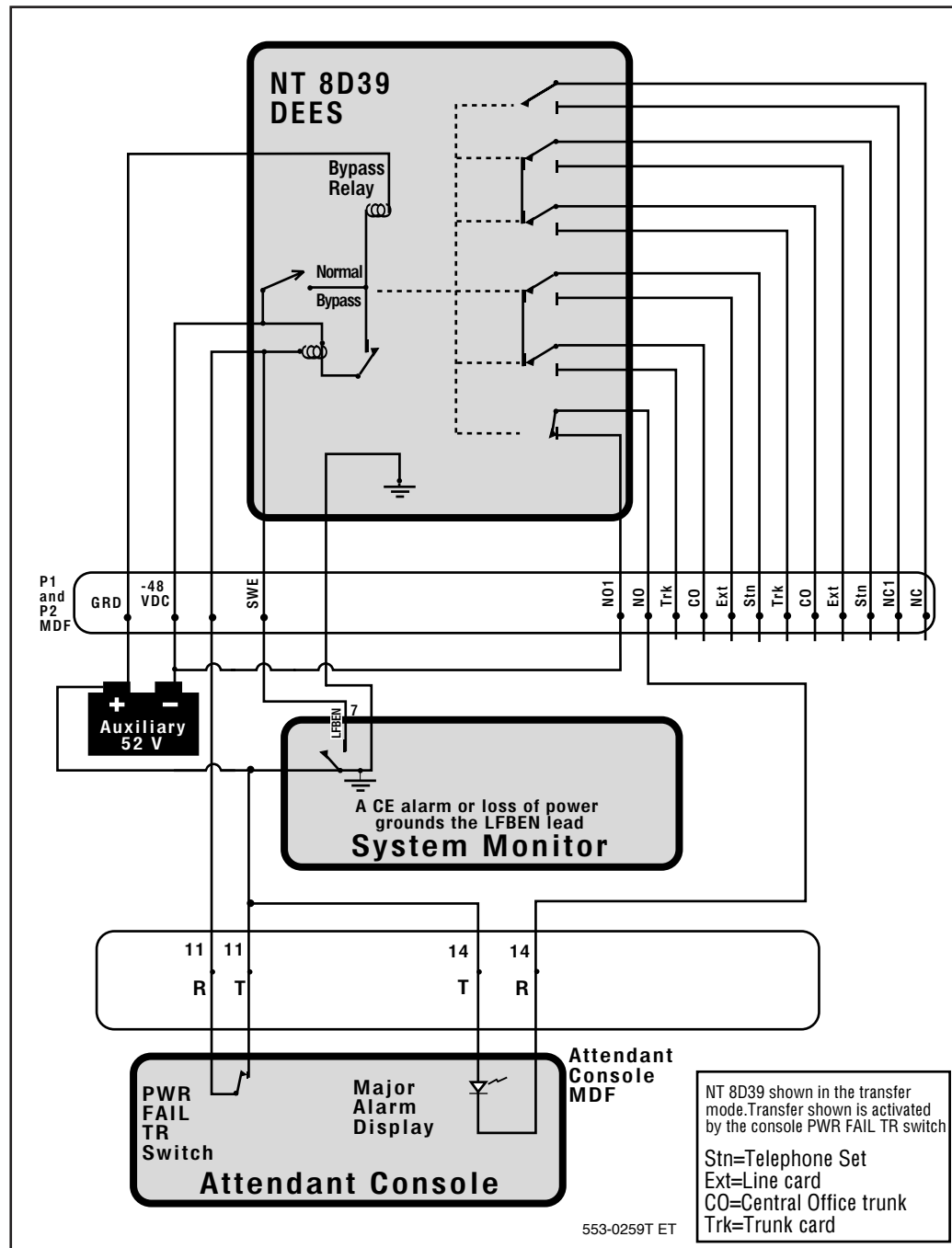
The following diagrams will assist you in finding faults with emergency transfer units.

The diagrams show the connections to the control circuits for the QUA6 and NT8D39 units. The trunk and line connections for these units are found in the Installation NTP.

## Option 21 to 81C using a QUA6 unit



## Option 21 to 81C using an NT8D39 unit







## EMR — Emergency Key (ACD)

### How the EMR works

In the event of an emergency situation, an ACD agent can press the Emergency (EMR) key to establish a No Hold Conference with a supervisor, and begin recording the call. When the key is pressed an EMR message appears on the TTY noting pertinent information.

### EMR messages

#### EMR100

This message is output to the TTY when an ACD Emergency key is pressed. The message appears in one or more of the following formats:

```
EMR100 RC L S C U RR MMM
EMR100 AG XXXX YYYY
EMR100 OR L S C U RR MM
```

Where:

**RC=** Recording trunk for the emergency recorder  
**L=** Loop for the recording trunk  
**S=** Shelf for the recording trunk  
**C=** Card for the recording trunk  
**U=** Unit for the recording trunk  
**RR=** Recording trunk Route number  
**MMM=** Recording trunk Member number  
**AG=** Agent that pressed the EMR key  
**XXXX=** ACD DN assigned to that agent  
**YYYY=** Agent Position ID (POS ID)  
**OR=** The Originator

Prior to X11 Release 14, ACD DN and Position ID digits are shown in reverse order. The character “A” indicates a “0,” and the character “0” indicates the end of the number. For example, output “01A4” identifies the ACD DN 401, while the Position ID 5412 would be output as 2145. X11 Release 14 and later output the ACD DN and Position ID as they really exist. ACD DN 301 appears as 301 on the printout. 

## ERR — Error Monitor

### How the ERR works

Error Monitor is a resident program. ERR does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

When the Error Monitor detects database programming errors or incorrectly formatted information, the system outputs ERR messages. Programming errors cause most ERR messages, however, certain hardware faults can also cause ERR messages.

#### ERR message makeup

The ERR messages fall into two categories:

- ◆ messages reporting the effect of the programmed database on call processing
- ◆ messages reporting the condition of Peripheral Equipment and Network equipment located in the network and Peripheral Equipment shelves

#### Using the ERR messages to clear faults

Depending on the fault, the actions in this chapter refer to different overlay loads located outside of this chapter. To solve database programming errors, the action refers you to overlay loads in the *administration input/output guide*. To solve hardware faults, the action refers you to diagnostic overlays found in this guide.

## ERR messages

### ERR0001

No MWI NSI table corresponds to the NSI string received.

**ACTION:** Check the MWI NSI table in OVL 15.

### ERR002

The NSI string received does not match the corresponding MWI NWI table.

**ACTION:** Compare the MWI NSI table in OVL 15 to the manufacturer's requirements.

### ERR003

A Syntax error in the MWI NSI string received.

**ACTION:** Compare the MWI NSI table in OVL 15 to the manufacturer's requirements.

### ERR010 loop

Input message from unequipped **loop**.

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** Check if the network card for the **loop** is inserted into the network shelf backplane.

**ACTION:** Unseat the network or superloop card from the backplane in the network shelf.

**2.** The data for the unequipped **loop** is incorrect.

**ACTION:** Refer to the *administration input/output guide* and use CFN in LD 22 or PRT in LD 97, to check the loop data. Use LD 17 or LD 97 (CFN) to correct the loop data.

**3.** If the **loop** identifier in the message is not present, the peripheral signaling (PS) card is suspect.

**ACTION:** Replace the PS card following the steps in the *Hardware replacement* guide.

**ERR020 I s c**

Input message received from an unequipped peripheral equipment card **I s c**. This card has no TNs programmed. The card is disabled to prevent further input.

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** If all the messages are from the same card or from the same PE shelf, suspect one of the following:

**a)** The PE card **I s c**, if the card is present.

**ACTION:** If the PE card is seated in the PE shelf backplane, unseat it.

**b)** The peripheral buffer on loop **I** shelf **s**.

**ACTION:** Replace the peripheral buffer following the steps in the *Hardware replacement* guide.

**c)** The network loop **s**.

**ACTION:** Replace the network card following the steps in the *Hardware replacement* guide.

**d)** The cables connecting the network and peripheral shelves.

**ACTION:** Replace the cables following the steps in the *Hardware replacement* guide.

**e)** Other PE cards on loop **I** shelf **s**.

**ACTION:** Replace the cards following the steps in the *Hardware replacement* guide.

**f)** The connectors.

**ACTION:** Check the PE shelf backplane connectors between the PE shelf and the crossconnect wiring.

**g)** The PE shelf backplane.

**ACTION:** Replace the PE shelf backplane following the steps in the *Hardware replacement* guide.

**2.** If all the messages are from various PE shelves connecting to loop **I**, suspect:

**a)** The network loop **I**.

**ACTION:** Replace the network card following the steps in the *Hardware replacement* guide.

**b)** The network loop **I** associated cables.

**ACTION:** Check the cable connectors, and if they are unseated, seat them. If the fault does not clear, replace the cables following the steps in the *Hardware replacement* guide.

**c)** Any peripheral buffer card on loop **I**.

**ACTION:** Replace each peripheral buffer following the steps in the *Hardware replacement* guide. After replacing each card, Refer to if this message reappears. If it does reappear replace another peripheral buffer card.

**3.** For SL-1 XN: Messages occur only when a specific System Clock Controller (SCC) is providing clock and loops in all groups are affected. Suspect:

**a)** SCC providing clock when messages occur.

**ACTION:** Replace the clock controller following the steps in the *Hardware replacement* guide.

**b)** Any QPC412 Intergroup Switch (IGS).

**ACTION:** Replace the IGS cards one at a time following the steps in the *Hardware replacement* guide. After replacing each card, Refer to if this message reappears. If it does reappear replace another IGS card.

**4.** Messages occur only when a specific SCC is providing clock and loops on both shelves of one group are affected. Suspect:

**a)** QPC412 IGS associated with the affected group when messages occur.

**ACTION:** Replace the IGS cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, Refer to if this message reappears. If it does reappear replace another IGS card.

**b)** Cable connecting the SCC and IGS cards through the Junctor.

**ACTION:** Replace the cables one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each cable, Refer to if this message reappears. If it does reappear replace another cable.

5. The messages are from loops on the same network shelf. Suspect:

a) Peripheral signaling card on the affected shelf.

**ACTION:** Replace the PS card following the steps in the *Hardware replacement* guide.

b) QPC412 IGS on affected shelf.

**ACTION:** Replace the IGS cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, Refer to if this message reappears. If it does reappear replace another IGS card.

c) Any network, conference or TDS card on this shelf.

**ACTION:** Replace the listed cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, Refer to if this message reappears. If it does reappear replace another card.

#### ERR027

Too large, invalid > 3 auxpm out-of-range.

**ACTION:** Contact your technical support group.

#### ERR030 x x tn rtclock

NE-500 output buffer overflow. x x represents reference numbers for the message. These numbers normally do not concern the technician.

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

1. The NE-500 buffer may not be large enough or is not being emptied.

**ACTION:** Refer to the *administration input/output guide*. Print out the CFN record using LD 22 CFN to check the 500 output buffer size. Run TFS004 using LD 2, to tell you if the buffer is overflowing or if the line card is faulty. Use LD 17 to resize the buffer. Contact your technical support group for more information.

2. If the error messages are from the same TN,

a) The telephone could be faulty.

**ACTION:** Replace the telephone. If this message reappears, re-install the original telephone.

*b)* The 500/2500 line card may be defective.

**ACTION:** Replace the card following the steps in the *Hardware replacement* guide. If this message reappears, reinsert the original card.

**3.** The message continues to appear.

**ACTION:** Contact your technical support group.

## **ERR031 x x**

Output buffer overflow (as ERR030). An RPE message is lost.

**x x** represents reference numbers for the message. These numbers do not concern the user.

**ACTION:** Take the same action as for ERR030.

## **ERR0032**

No response is received for an MCID request.

**ACTION:** Check if the local CO supports the treatment of such requests.

## **ERR0033**

A mCIDRequest return error component (See Appendix C), has been returned with the indication 'notSubscribed'.

**ACTION:** Check if you have subscribed to the service with the operator. If not, disallow MCID as a Remote Capability on the corresponding D-Channel.'

## **ERR0034**

An mCIDRequest return error component (see Appendix C) has been returned with the indication 'notAvailable'. This means that the network was not able to register any call information.

**ACTION:** Contact the network operator.

## **ERR040 x x tb rtclock**

SL-1 telephone output buffer overflow. **x x** represents reference numbers for the message. These numbers normally do not concern the technician.



Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

1. SL-1 telephone buffer may not be large enough or is not being emptied.

**ACTION:** Refer to the *administration input/output guide*. Print out the CFN record using LD 22 CFN to check the SL-1 output buffer size. Run TFS004 using LD 2. This will tell you if the buffer is overflowing or if the line card is faulty. Use LD 17 to resize the buffer. Contact your technical support group for more information.

2. If the error messages are from the same TN,

- a) The telephone may be faulty.

**ACTION:** Replace the telephone. If this message reappears, re-install the original telephone.

- b) The SL-1 or digital line card may be faulty.

**ACTION:** Replace the card following the steps in the *Hardware replacement* guide. If this message reappears, reinsert the original card.

3. The message continues to appear.

**ACTION:** Contact your technical support group.

#### ERR045 tn

Invalid DN stored against buzz key.

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

1. If the set is equipped with a buzz key, check that the DN stored against it is valid.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the buzz key TN. Use LD 11 to correct the data.

2. Otherwise, print all information for that Meridian 1 proprietary telephone.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the buzz key TN.

**ERR050 x x tn**

Meridian 1 proprietary telephone DN has too many appearances.  
x x represents reference numbers for the message. These numbers normally do not concern the user.

1. For each DN on the specified Meridian 1 proprietary telephone, check that the DN has at most 16 appearances.

Refer to the *administration input/output guide*. Use LD 20 or LD 22 DNB to check for DN appearances. Use LD 11 to correct the data.

2. The fault cannot be fixed.

**ACTION:** Contact your technical support group.

**ERR060 tn**

Invalid Digitone Receiver TN.

**ACTION:** Check that the Digitone Receiver with the given TN is defined in the data. Refer to the *administration input/output guide*. Use LD 20 TNB to check for invalid Digitone Receiver programming. Use LD 13 to correct the data.

**ERR070 tn**

Input from software-idled Digitone Receiver.

Where:

x = rtclock

y = start time when ttr idled

z = allowed wait time before printing msg

x, y, z in half millisecond increments.

**ACTION:** Use the STAT command in LD 34 to list all disabled Digitone Receivers. Replace the Digitone receiver card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS* chapter in this guide.

**ERR071**

Charge\_son never a main\_cr.

**ACTION:** Contact your technical support group.

**ERR076**

Music trunk has a bad Call Register in active Call Register (CR).

**ACTION:** Contact your technical support group.

**ERR077**

Music CR has a bad conference TN.

**ACTION:** Contact your technical support group.

**ERR078**

Music CR has a bad auxpm.

**ACTION:** Contact your technical support group.

**ERR079**

Music on hold has improper Call Register (CR).

**ACTION:** Contact your technical support group.

**ERR080 tn key**

Key input from software-unequipped add-on module.

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** Check Meridian 1 proprietary telephone data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the Meridian 1 proprietary telephone data. Use LD 11 to correct the data.

**2.** Ensure that the add-on module is defined and that the last key number is less than the last key.

**ACTION:** Check that the last key on the printout is less than last key of the add-on module. Use LD 11 to correct the data.

**ERR081**

The music source has an improper Call Register (CR).

**ACTION:** Contact your technical support group.

**ERR090 tn**

Answer supervision was received before all the digits were outputted by the far-end.

**ACTION:** Contact your technical support group for help in checking with the local public exchange office personnel for a bad trunk.

**ERR091 tn**

A call through the network trunk was camped on for 40 minutes. The call is disconnected.

**ACTION:** No action required. Someone may have forgotten that they activated Camp-On. You may want to let the telephone users know how to tell if they have a call Camped-On.

**ERR092 c r s**

A radio paging system has failed. All trunks on that route have been made maintenance busy. Output: **c** = customer, **r** = route, **s** = system.

**ACTION:** Follow the radio page vendor maintenance recommendations.

**ERR100 tn**

An invalid starting arrangement is specified for the trunk.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TIE to check the trunk data. Contact your technical support group for advice. Use LD 14 to modify the start arrangement as required.

**ERR110 tn**

Invalid protected trunk line data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the trunk data. Contact your technical support group for advice. Use LD 14 to correct the data.

**ERR115 tn**

The route block data indicated by the trunk data, cannot be located.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the trunk data, and LD 21 to check customer number and route number. Contact your technical support group for advice.

**ERR120 tn**

The trunk has not been released by the far-end.

**ACTION:** Contact your technical support group and have the trunk at the central office checked for release failure.

**ERR130 tn**

Invalid DN hunting data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 HNT to check that the hunt DN defined for the TN is correct. Use LD 10 or 11 to correct the data.

**ERR140 tn**

Invalid off-hook message.

**ACTION:** Contact your engineering or traffic group for more information. Refer to the *administration input/output guide*. Use LD 22 CFN to check the size of the input buffer and correct it if necessary. Use LD 2 to check the traffic statistics. If necessary, replace the card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

**ERR150 r/c**

Automatically Identified Outward Dialing (AIOD) route **r** or customer number **c** is nonexistent.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 LTM to check the route and customer number. Use LD 16 to correct ACNO or ARNO in the trunk route data blocks. Use LD 15 to correct the customer number.

**ERR160**

An invalid AIOD station identification. The station ID must be 4 digits.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 to check the APRF and AATT in the customer data block and ATTK in the route data blocks of the incoming Tie trunks.

**ERR170**

An undefined AIOD output message. An AIOD station or trunk identification is missing.

**ACTION:** Use LD 36 and set AIOD MSG to display the data. Refer to the *administration input/output guide*. Check the ADID in LD 14 trunk data blocks and AATT in LD 15 customer data block.

**ERR180 x x rtclock**

A trunk output buffer overflow. The trunk output buffer may not be large enough. **x x** represents reference numbers for the message. These numbers normally do not concern the user.

**ACTION:** Contact your technical support group for more information. Refer to the *administration input/output guide*. Use LD 22 CFN to check the size of the 500 output buffer and, correct it if necessary. Use LD 2 to check the traffic statistics. If necessary, replace the card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

## ERR182

The route type has been changed to ISA.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR183 dnis tn

The DINS calls cannot terminate because the IDC Translation is invalid, or the terminating station is not an ACD-DN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB to check that DNIS and IDC are set to YES. This error message outputs when a route has both IDC and DNIS set to YES and a call is made to a vacant number. Contact your technical support group.

## ERR184

A Global CREF number is needed for any service message.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR185

An invalid maintenance state in the service message.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR186

Change the status; an octet 3 error.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR187

Mini-CDR, used with the SL-1 M and MS, is not supported with DNX or CDRE.

**ACTION:** Information only, no action required.

## ERR190

An overload TN stack overflow.

**ACTION:** Contact your technical support group.

**ERR200 c tn**

Invalid customer **c** in unit block.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check the customer number and LD 14 to correct data for the specified TN.

**ERR201**

No customer ptr set.

**ACTION:** Contact your technical support group.

**ERR203**

Ulptr not set.

**ACTION:** Contact your technical support group.

**ERR205 c tn**

Invalid customer **c** in unit block.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check the customer number and LD 14 to correct the data for the specified TN.

**ERR206**

Let the group data audit get rid of all pointers.

**ACTION:** Information only, no action required.

**ERR210 r/c**

The route **r** or customer **c** is invalid.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check the customer number and LD 14 to correct the data for the specified TN.

**ERR215 r/c**

The Recorded Announcement (RAN) route **r** or customer **c** is nonexistent.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB to check the route and CDB to check the customer number. Correct the RAN route or customer number in LD 16 route data block or LD 15 customer data block.

**ERR220 r c**

There is no response (control pulse) return from all the trunks on route **r** for customer **c**.

**ACTION:** Check the RAN equipment is operating according to the vendors instructions. Use RAN in LD 36 to check the trunk and the RAN machine. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**ERR221 r c**

Procedure NWK/DIGPR. The intercept treatment is assigned as RAN. RAN route **r** for customer **c** does not exist.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB to check the route and CDB to check the customer number. Correct the RAN route or customer number in LD 16 route data block or LD 15 customer data block.

**ERR225 p c**

The Call Detail Recording (CDR) port **p** for customer **c** is not a CDR device.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB to check the data and LD 17 to correct the data so that the port is not a CDR device, or connect the correct CDR hardware.

**ERR226 tn**

A bit was set for trunk idle. Missed operation of Call Transfer.

**ACTION:** Contact your technical support group.

**ERR230**

Protected ARS pointers are incorrect. Print out and correct the ARS data.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

**ERR231**

The location access code for a VNET route has not been found.

**ACTION:** Contact your technical support group.

**ERR232**

No ARS ADB data was found for network calls.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.



**ERR235**

An invalid ARS route number. This occurs if an ARS schedule block contains a valid route that has no members. Print out and correct the ARS data.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

**ERR240**

Inserted digits for a route do not begin with the access code for that route. Print out and correct the ARS data.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

**ERR245 tn scl**

A nonexistent or invalid speed call list number SCL.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 SCL to check the Speed Call list number. Correct the speed call list number for the TN using LD 18, or provide the list number by service change using LD 10 or 11.

**ERR250 c r x**

AIOD route number is not an AIOD route **x**. Route data block for outgoing central office route contains invalid AIOD route number.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB to check the AIOD route. Correct the central office route data block using LD 16.

**ERR260**

Incomplete calling number information. Check ANI\_LDN, ANI\_TRK\_NO and ANI\_ATTEN\_NO to form a complete 7-digit number.

**ACTION:** Contact your technical support group for help in checking with the local public exchange office personnel for an ANI problem.

**ERR265 g**

DND key used to determine status of nonexistent group **g**.

**ACTION:** Refer to the *administration input/output guide*. Use LD 26 to print out and correct the data.

**ERR266 mg sg**

Secondary DND group **sg** was encountered during the processing of a main group **mg** that did not exist.

**ACTION:** Refer to the *administration input/output guide*. Use LD 26 to print out and correct the data.

**ERR267 mg sg g**

A secondary group **sg** contains another group number **g**.

**ACTION:** Refer to the *administration input/output guide*. Use LD 26 to print out and correct the data.

**ERR269 c tn**

Procedure FIND\_ARSQPTR failed. **tn** has suddenly disappeared during the processing of a call involving it. The **tn** may have been removed from service while someone was making or receiving a call on it.

**ACTION:** Refer to the *administration input/output guide*, and check to Refer to if someone was using LD 10 or 11 or 14 and removed this TN from the customer data base with the OUT command.

**ERR270**

Overflow of OVD\_TRK\_LIST. The trunk identified by the accompanying OVD003 message may not be automatically re-enabled.

**ACTION:** To correct the overload condition indicated by the OVD003 message, refer to the *OVD* chapter in this guide.

**ERR275 x**

ARS schedule block **x** not in data but is invoked by certain codes. Print out and correct ARS data.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

**ERR280 tn1 tn2**

Ring Again activated by **tn1** was unable to access trunk **tn2** due to trunk access restrictions.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check that all trunks in the route have the same class-of-service. Correct the class of service using LD 14.

**ERR285 tn**

Voice call to invalid DN from set.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check that the voice call key VCC is not programmed to call a Mixed, Multiple Appearance or Invalid DN. Correct Voice Call using LD 14.

**ERR290**

Invalid incoming DP precedence digit.

**ACTION:** Contact your technical support group and have the trunk at the central office checked for release failure.

**ERR291**

Invalid incoming MF precedence digit.

**ACTION:** Contact your technical support group and have the trunk at the central office checked for release failure.

**ERR300 tn**

Customer has no Dial Intercom Group (DIG) defined or DIG package does not exist.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DIG to check for a Dial Intercom Group. If the problem cannot be resolved, notify your technical support group.

**ERR301 tn**

DIG group does not exist for this **tn**.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the group number on the DIG key for this TN. Use LD 10 or 11 to correct the data.

**ERR302 tn**

DIG key group number problem.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the group number on the DIG key for this TN. Use LD 10 or 11 to correct the data.

**ERR303 tn**

Originating DIG group is not the same as the terminating group for this key and DN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the group number on the DIG key for this TN. Use LD 10 or 11 to correct the data.

**ERR304 tn**

Telephone does not belong to the same customer as the DIG.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the group number on the DIG key for this TN. Use LD 10 or 11 to correct the data.

**ERR305**

Invalid tstl linkage.

**ACTION:** Contact your technical support group.

**ERR306**

Customer translation failed.

**ACTION:** Contact your technical support group.

**ERR307**

TNS actv.cr does not point to Call Register (CR).

**ACTION:** Perform an AUDIT in LD 44. If this message reappears, perform a parallel reload. If you need help contact your technical support group.

**ERR319**

Bad LLC blocking value found.

**ACTION:** Contact your technical support group.

**ERR367**

Son Call Register is an orphan, idle it.

**ACTION:** Perform an AUDIT in LD 44. If this message reappears, perform a parallel reload. If you need help contact your technical support group.

**ERR400**

Customer data block (CDB) missing.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 CDB to check the CDB and LD 15 to program the CDB.

**ERR401**

NFCR pointers table missing.

**ACTION:** Contact your technical support group.

**ERR402**

CRCS table missing.

**ACTION:** Contact your technical support group.

**ERR403**

Tree pointers table missing.

**ACTION:** Contact your technical support group.

**ERR404**

No default tree exists.

**ACTION:** Check the IDC data base and re-enter the command.

**ERR405**

Tree was service-changed.

**ACTION:** Information only, no action required.

**ERR406**

NCOS not defined in procedure CODE\_RESTRICTION.

**ACTION:** Check the BARS/NARS database.

**ERR418**

MFC TN of active MFC S/R not.

**ACTION:** Contact your technical support group.

**ERR500 dn tn**

Message Waiting lamps for the set listed have been found faulty by the system.

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, contact your technical support group.

**1.** One unit is faulty, suspect the lamp of the telephone indicated by the TN.

**ACTION:** Use LD 61 to test the lamps. If the lamps are faulty, replace the telephone.

**2.** User may have inadvertently unplugged telephone.

**ACTION:** Plug in the telephone.

3. All units on one card are faulty, suspect the line card.

**ACTION:** Replace the line card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

4. All units on one more shelves are faulty. Suspect the power supply.

**ACTION:** Refer to the PWR chapter.

## **ERR547 c g dn**

Invalid **dn** or disallowed Tenant DN for group **g** call for customer.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 or 26 to check the data for group and LD 10 or 11 or 26 to correct through service change.

## **ERR548 c g**

Group **g** for customer **c** does not exist or is invalid.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 or 26 to check the data for the group and LD 10 or 11 or 26 to correct through service change.

## **ERR600**

Invalid supervisor TN in Automatic Call Distribution (ACD). Check ACD data for the TN.

**ACTION:** Refer to the *administration input/output guide*. Use the ACD overlays to correct the data.

## **ERR605**

Agent-ID table is full.

**ACTION:** Refer to the *administration input/output guide*. Use the ACD overlays to correct the data.

## **ERR606**

High-speed link is not defined.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 CFN to check the link and LD 17 to define the link.

## **ERR607**

High-speed link Serial Data Interface (SDI) is disabled.

**ACTION:** Refer to the *maintenance input/output guide*. Use LD 48 to enable the SDI card.

**ERR608**

High-speed link status is 'down'.

**ACTION:** Refer to the *maintenance input/output guide*. Use LD 48 to enable the link.

**ERR609**

Low-speed link is not defined.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 CFN to check the link and LD 17 to define the link.

**ERR623**

Customer pointer not valid or is missing. Between the time of origination and the time the error was generated, the pointer to the customer data block was corrupted. (SET CUST PTRS fails).

**ACTION:** Perform a parallel reload. If you need help contact your technical support group.

**ERR624**

ESN data block or NTCL data block pointer invalid or missing. A NARS/BARS/CDP DN has been dialed but the ESN or NTCL block has not been set up.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

**ERR625**

Pointer to NARS/BARS/CDP translation data is not valid, or missing. The pointer to the NARS/BARS/CDP translation data does not exist for the access code dialed (enter network data through service change).

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

**ERR626**

NARS/BARS is not available due to feature packaging but a NARS/BARS access code is in the system and was dialed.

**ACTION:** Information only, no action required.

**ERR627**

Translation data is corrupted; invalid translation type. NARS/BARS/CDP translation data specifies a call type not recognized by call processing software (corrupted protected data).

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

## ERR628

Route List data cannot be accessed. Route list specified by NARS/BARS/CDP is not in the system (add route list data through service change.)

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

## ERR629

Trunk route data cannot be accessed. Trunk route is specified by NARS/BARS/CDP data but the route data block is not available.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

## ERR630

Location route data is invalid. When attempting to perform conversion from an On-Net to an Off-Net number, it was determined that the location route data block has invalid data.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

## ERR631

Route list entry data is at fault. Occurs when route list data has been changed between the time a route list entry has been selected and when the route has been seized (pointer to route list entry cannot be found).

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

## ERR638

Invalid NXX code.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

## ERR639

Free Calling Area Screening (FCAS) data cannot be accessed.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.



**ERR700 tn**

MFC signaling error threshold exceeded.

**ACTION:** Refer to the *maintenance input/output guide*. Use LD 54 to test MFC channels.

**ERR1001**

An invalid primitive was received from the DCHI card. Check the DCHI card vintage to make sure it matches the X11 software release.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR2139**

DN assignment is not allowed for this key.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the DN, and LD 10 or 11 to correct the data.

**ERR3000 x**

APL message about I/O devices.

**ACTION:** Refer to the *Related System Messages* section in the *IOD* chapter of this guide.

**ERR3001 x**

APL link **x** is down due to transmission problems. The problem can be TTY hardware problem, transmission line problem or AUX processor problem.

**ACTION:** Refer to the *Related System Messages* section in the *IOD* chapter of this guide.

**ERR3002 x**

The number of NAK messages within last 30 minutes exceeded the system-defined limit of 10. APL link **x** may have transmission problem. This APL link has an occasional hit on the line.

**ACTION:** Contact your technical support group. Check the transmission facility for foreign noise introduced to this link.

**ERR3003**

Remove\_Apl\_OQ. Message CR is not in QU\_APL\_OP queue.

**ACTION:** Perform a parallel sysload, and contact your technical support.

**ERR3004 x**

The number of times the link has no acknowledge signal sent from the other side exceeds the system limit of 10. APL link **x** may have a transmission problem. This APL link has occasional hit on the line.

**ACTION:** Contact your technical support group. Check the transmission facility for foreign noise introduced to this link.

**ERR3007**

Special Common Carrier (SCC) data table is required and is not found.

**ACTION:** Contact your technical support group.

**ERR3010 dn**

The **dn** sent from the AUX, in Message 7 is invalid for Message Waiting Indication. The AUX DN may be invalid.

**ACTION:** Contact your technical support.

**ERR3011 ltn**

An invalid **ltn** was found. The LTN table may be wrong.

**ACTION:** Check the LTN database.

**ERR3012**

Bad APL range (0-15).

**ACTION:** Check the APL link in LD 17 and LD 48.

**ERR3013**

APL shared by another user.

**ACTION:** Information only, no action required.

**ERR3014**

APL not defined in customer data block

**ACTION:** Check and program the APL data in LD 15.

**ERR3015**

Warning: some UST user may have some problem.

**ACTION:** Contact your technical support group.

**ERR3016**

Bad telmsg timer range (2-15).

**ACTION:** Contact your technical support group.

**ERR3017**

No to mwc not allowed, IMS defined.

**ACTION:** Information only, no action required.

**ERR3018**

Change CMS from yes to no, or vice versa.

**ACTION:** Information only, no action required.

**ERR3030**

Member in DND group does not exist.

**ACTION:** Refer to the *administration input/output guide*. Use LD 26 to check and correct the DND data.

**ERR3032**

Transfer blocked due to unavailable matching timeslots.

**ACTION:** Information only, no action required.

**ERR3033 c p**

A Q-record is discarded because the target CTY port **p** for customer **c** is under maintenance testing.

**ACTION:** If you are not testing, contact your technical support group.

**ERR3035**

Test line type/index out-of-range.

**ACTION:** Contact your technical support group.

**ERR3036 r s j ts**

Continuity failure has occurred on assigning timeslots for speech paths. First attempt failed; tries to get new path. Parameters are:

**r** = receive loop **s** = send loop **j** = junctor used to transmit to the RRR loop ID

**ts** = timeslot used on transmit loop to send PCM data to the receive loop

ERR3036 and ERR3037 messages refer to one-way connections so that if both one-way connections fail, either message may print out twice.

**Note:** ERR3036 also occurs if a loop on the QPC414 Network card is not configured. This is not an error condition. To prevent ERR3036 occurring in this case, define the loop in LD 17.

**ACTION:** Refer to the *administration input/output guide*, use LD 22 CFN to check the unused loop on the network card, and LD 17 to program it if applicable.

**ERR3037 r s j ts**

Same as EDD3036 but failed on second attempt; path is assigned anyway.

**ACTION:** Refer to the *administration input/output guide*, use LD 22 CFN to check the unused loop on the network card, and LD 17 to program it if applicable.

**ERR3038 dn**

Invalid or non-existing intra-flow **dn**.

**ACTION:** Contact your technical support group.

**ERR3039**

Process IDs do not match in AUX\_KEYS. This could be due to the AUX equipment not having a Directory Number assigned at the time of an incoming call to that equipment.

**ACTION:** Contact your technical support group.

**ERR3040**

Process IDs do not match in operator revert.

**ACTION:** Contact your technical support group.

**ERR3041**

The output buffer to the DTI hardware has overflowed.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR3042**

No IETI.

**ACTION:** Contact your technical support group.

**ERR3043**

LOC NO SDI.

**ACTION:** Contact your technical support group.

**ERR3044**

Bad ITGE data.

**ACTION:** Contact your technical support group.

**ERR3045**

Incorrect key function defined for data TN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check the key function and LD 11 to program it.

**ERR3046**

Data TN is not defined.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check the Data TN and LD 11 to program it.

**ERR3047 c loop tn**

Failure for 500/2500 telephone set Six-Party Conference **c**.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check the conference programming, and LD 10 CLS to check for XFA and C6A.

**ERR3050**

MWD not allowed if MWK key is equipped.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check the MWA and LD 11 CLS to program the MWA if applicable.

**ERR3056 tn**

**tn** was force disconnected due to a LD 10, 11 or 14 service change.

**ACTION:** Check to Refer to if someone was using LD 10 or 11 or 14 on this TN. Tactfully inform the person programming that STAT l s c u in LD 32 or LD 10 or LD 11 can tell them if the unit is in use.

**ERR3067**

The output buffer to the tone detector has overflowed.

**ACTION:** Contact your technical support group.

**ERR3068 x**

Call Park ID **x** returned which is now invalid, usually the result of a service change or set relocation. The invalid ID is unavailable for use as a Park ID.

**ACTION:** Refer to the *administration input/output guide*. Use LD 11 to correct the ID.

**ERR3069**

Call is to HOT set/key but not to package.

**ACTION:** Information only, no action required.

**ERR3070**

Set/key is EHOT but data is defined.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check EHOT and LD 10 or 11 to program it.

**ERR3071**

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

1. The list number for Hot key termination is invalid.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 HTL to check the list and LD 18 to correct it.

2. The entry number for Hot key termination is invalid.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check the key termination and LD 11 to correct it.

**ERR3072**

Failure to establish SLP conference.

**ACTION:** Contact your technical support group.

**ERR3073**

Failure to add tone to SLP conference.

**ACTION:** Contact your technical support group.

**ERR4010 tn key f**

Predefined secondary DN key with function **f** on a data service ACD agent set is not MNC, MCR, SNC, or SCR.

**ACTION:** Refer to the *administration input/output guide*. Use the ACD overlays to correct the data.

**ERR4011 tn ici**

Wrong **ici** key removed.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 ATT to check ICI key and LD 15 to correct the data.

**ERR4012 in cr tn msg key**

Message Reference ID (MRID) mismatch between the MRID contained in the input CSL message and the MRID stored in the Call Register. This message indicates the CSL message is delayed. When this message repeats, the most likely problem is CPU overload.

Where:

**in** = MRID contained in the incoming CSL message (in hex).

**cr** = MRID stored in the Call Register associated with the TN of the incoming CSL message (in hex).

**tn** = The TN of the incoming CSL message, in packed format.

**msg** = The message type of the incoming CSL message.

**key** = The function of the key message. This appears when the message type is KEY message.

**ACTION:** Contact your technical support group.

**ERR4013 n t**

There have been **n** mismatches in Message Reference ID (MRID) between the active CR and AML message CR within **t** \* 2 seconds.

**ACTION:** The CPU may be very busy. Contact your technical support group for help in checking the total number of Call Registers, provision of Meridian Mail ports, Meridian Mail use, and system I/O.

**ERR4016**

CSL indirect connect failed.

**ACTION:** Contact your technical support group.

**ERR4017**

CSL indirect disconnect failed.

**ACTION:** Contact your technical support group.

**ERR4018 dn c**

The ACD-DN for customer **c** is not defined for data services.

**ACTION:** Refer to the *administration input/output guide*. Use the ACD overlays to correct the data.

**ERR4019 dn**

1. Invalid **dn** was sent from VAS when requesting MWI update. Digits output following the code show the DN affected.
2. Receiving this message and cannot light the message waiting lamp.

**ACTION:** Refer to the *Meridian Mail guide* in the *System Administration* section to check that the customer number is correct.

**ERR4020 dn c xxx**

Data Service **dn** leaf block does not contain a valid ACD DN.  
**c** = customer; **xxx** = block contents.

**ACTION:** Refer to the *administration input/output guide*. Use the ACD overlays to correct the data.

**ERR4021**

Meridian Mail MP alarm.

**ACTION:** Contact your technical support group.

**ERR4022 mt mst vas c dn acc**

An incoming CSL DATA add data service DN message has been received, but not enough protected memory exists to allocate a DSDN\_LIST for the customer.

Output in hex:

**mt** = message type

**mst** = message subtype

**vas** = VAS ID

**c** = customer number

**dn** = data service DN

**acc** = access code.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card following the steps in the *Hardware replacement* guide. If you need help with the commands or system responses refer to the *CED* chapter in this guide.



**ERR4023**

An incoming CSL DATA add or validate data service DN message has been received, but the data services customer option is not set. No data services DNs will be accepted. Refer to ERR4022 for output data.

**ACTION:** Contact your technical support group.

**ERR4024**

CSL Co-administration error.

**ACTION:** Contact your technical support group.

**ERR4025**

An incoming CSL DATA add or delete data service DN message has been received, but the DN could not be added or removed because not enough unprotected memory exists to allocate a WORKAREA. Refer to ERR4022 for output data.

**ACTION:** Check and reallocate memory or add more memory.

**ERR4026**

An incoming CSL DATA delete data service DN message has been received, but the DN does not exist for this customer. Refer to ERR4022 for output data.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card following the steps in the *Hardware replacement* guide. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**ERR4027**

An incoming CSL DATA add data service DN message has been received, but the DN could not be added because the maximum had been reached. Refer to ERR4022 for output data.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card following the steps in the *Hardware replacement* guide. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**ERR4028**

An incoming CSL DATA delete data service DN message has been received, but the DN was not removed because it was not a data DN. Refer to ERR4022 for output data.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card following the steps in the *Hardware replacement* guide. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**ERR4029**

An incoming CSL DATA add or delete data service DN message has been received, but the DN was rejected because the access code was invalid (the DN does not exist). Refer to ERR4022 for output data.

**ACTION:** Check the database and then re-enter the commands.

**ERR4030**

An incoming CSL DATA add or delete data service DN message has been received, but the DN was rejected because the access code was invalid (the DN was not an ACD DN). Refer to ERR4022 for output data.

**ACTION:** Information only, no action required.

**ERR4031**

An incoming CSL DATA add or delete data service DN message has been received, but the DN was rejected because the access code was invalid (the ACD DN is not defined as a primary data service access code). Refer to ERR4022 for output data.

**ACTION:** Check the ACD DN in OVL 23.

**ERR4032**

An incoming CSL DATA add or delete data service DN message has been received, but the DN was rejected because the access code was invalid (the DN is defined for a different VAS Server). Refer to ERR4022 for output data.

**ACTION:** Check the database for VAS in LD 17.

**ERR4033**

An incoming CSL DATA add or delete data service DN message has been received, but the DN was rejected because the access code was invalid (the DN conflicts with an existing longer or shorter DN). Refer to ERR4022 for output data.

**ACTION:** Contact your technical support group.

**ERR4034**

An incoming CSL DATA add or delete data service DN message has been received, but the DN was rejected because the access code was invalid (the DN already exists). Refer to ERR4022 for output data.

**ACTION:** Contact your technical support group.

**ERR4035**

Wrong IE for Notify Message.

**ACTION:** Contact your technical support group.

**ERR4036**

Wrong extension bit for notification indicator IE.

**ACTION:** Contact your technical support group.

**ERR4037**

Wrong extension bit for original called number IE.

**ACTION:** Contact your technical support group.

**ERR4038**

Wrong IE length for original called number IE.

**ACTION:** Contact your technical support group.

**ERR4040**

NTP states no default tree exists.

**ACTION:** Refer to the *administration input/output guide*. Use LD 49 NFCR to check for valid data. Use LD 15 to check if NFCR is allowed. If NFCR is to be denied, NFCR should be NO.

**ERR4048 c r idc**

Conflict in data base for DRC key on SL-1 set. Check the specified customer, route, for IDC setting.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the DRC key, LD 15 and LD 11 to correct the data.

## ERR4049

Mandatory Notification description invalid.

**ACTION:** Information only, no action required.

## ERR4050 data

Intercept treatment DN not found. Define intercept treatment DN in the FGD data block (LD 19). The data output is:

**TRK tn MFR tn ID j ddd ADR j ddd**

Where,

**TRK tn** = TN of the FGDT trunk (l s c u, loop ch)

**MFR tn** = TN of the MF receiver (l s c u, or loop ch)

**ID j ddd** = ID field, **j** = number of digits, **ddd** = digits

**ADR j ddd** = Address field, **j** = number of digits, **ddd** = digits

**Note:** If the address was not received or was empty, it is not printed.

**ACTION:** Refer to the *administration input/output guide*. Use LD 19 to check and correct the intercept treatment DN.

## ERR4051 data

Invalid NPA in ID field. If the error repeats with the same MFR, test the MFR card; otherwise suspect a fault on far-end outpulsing mechanism. Refer to ERR4050 for a description of output data.

**ACTION:** If the MFR card is faulty replace it following the *Hardware replacement* guide. If the MFR card is not faulty, contact your technical support group for assistance from the far-end.

## ERR4052 data

Incorrect address; cannot determine the category. If the error repeats with the same MFR, test the MFR card; otherwise suspect a fault on far-end outpulsing mechanism. Refer to ERR4050 for a description of output data.

**ACTION:** If the MFR card is faulty replace it following the *Hardware replacement* guide. If the MFR card is not faulty, contact your technical support group for assistance from the far-end.

## ERR4053 c h a

More than 20 Attendant console Graphic Modules being updated in one time slice.

**c** = customer number

**h** = hundreds group involved

**a** = attendant not updated

**ACTION:** Information only, no action required.

#### ERR4054

Access to the trunk was disconnected due to Timed Forced Disconnect (TFD) time-out.

**ACTION:** Information only, no action required.

#### ERR4055 data

This message may indicate that a caller dialed an invalid authorization code. It can also refer to MF inter-digital or inter-field time-out. Refer to ERR4050 for a description of output data.

**ACTION:** Refer to the *administration input/output guide*. Use LD xx to check the ID and ADR fields to Refer to if the digits are for a phone number or an authorization code. If it is an incomplete phone number, increase the DGTO or IFTO parameters in the FGD block in LD 19.

#### ERR4056 data

FGD or M911 trunk received TTR input before end of start-dial wink.  
Output: trktn mfrtn trunkpm input\_message

**ACTION:** Refer to the *administration input/output guide*. Use LD xx to test the FGDT trunk and MFR card.

#### ERR4057

CFNA cannot terminate on the Forward DN (FDN) because;

1. The FDN is an ACD-DN which is not a Message Center,

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the FDN and use LD 10 or LD 11 to correct.

2. The set on which the FDN is defined does not have Message Waiting Allowed (MWA) Class of Service (COS).

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the FDN and use LD 10 or LD 11 to correct it.

## ERR4058

Undefined or invalid Attendant Alternative Answering (AAA) DN type was found at AAA time-out. Valid types are Set DN and ACD-DN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 ATT to check the AADN and LD 12 to correct it.

## ERR4059 dn

Tenant to Tenant Access denied between the caller and the specified Attendant Alternative Answering (AAA) **dn** at AAA time-out.

**ACTION:** Information only, no action required.

## ERR4060 SUPL loop HW c

Parameter downloading failed. Unable to send messages through Network card message interface.

**c** = NT8D01 Controller card

**ACTION:** Try using ENXP in LD 32 to download the appropriate enable command to the card. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

## ERR4061

CPG\_DATA\_PTR or CPG\_BLK\_PTR pointer is nil (DUMP module).

**ACTION:** Perform a parallel reload. Contact your technical support group for assistance.

## ERR4062

Digitone Receiver (NT8D16) failed self test.

**ACTION:** Use DTR l s c in LD 34 to perform Digitone receiver diagnostics. If you need help with the commands or system responses refer to the *TDS* chapter in this guide.

## ERR4064 x y z

Feature is not allowed for this interface.

**x** = DCH Interface ID

**y** = D-channel number

**z** = Mnemonic for the feature

**ACTION:** Information only, no action required.

**ERR4067 c x**

No unprotected CPG data block for CPG **x** of customer **c**.

**ACTION:** Perform a parallel reload. Contact your technical support group for assistance.

**ERR4068 c**

No unprotected CPG data block for CPG 0 of customer **c**.

**ACTION:** Perform a parallel reload. Contact your technical support group for assistance.

**ERR4069 c**

No protected CPG data block for CPG 0 of customer **c**.

**ACTION:** Perform a parallel reload. Contact your technical support group for assistance.

**ERR4070 c x**

Customer **c** data block exists, but there is no CPG\_PTR\_BLK for CPG number **x**.

**ACTION:** Perform a parallel reload. Contact your technical support group for assistance.

**ERR4071 tn**

The type of trunk (COT, DID, Tie, etc.) specified during the audit did not match the trunk type stored within IPE trunk card. The trunk type stored within the card has been set to the trunk type specified in the audit message. (The audit process obtains trunk type from the TN block contained within the database.)

Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

1. If this message persists, do a parameter download.

**ACTION:** Use DISC l s c and ENLC l s c in LD 32 to disable and enable the unit causing a download.

2. If the problem persists, suspect a faulty card.

**ACTION:** Replace the IPE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**ERR4072 tn**

Impedance setting conflict found on an IPE trunk during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the impedance setting and LD 14 to correct the data.

**ERR4073 tn**

Dialing speed setting conflict found on an IPE trunk during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check the dialing speed setting and LD 14 to correct the data.

**ERR4074 tn**

Carrier pad setting conflict found on an IPE trunk during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check the Carrier pad setting and LD 14 to correct the data.

**ERR4075 tn**

A-Law or Mu-Law companding setting conflict found on an IPE trunk during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check the A-Law or Mu-Law companding setting and LD 14 to correct the data.

**ERR4076 tn**

10pps1 conflict found on IPE trunk during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK Class of Service to check the 10pps1 setting and LD 14 to correct the data.

**ERR4077 tn**

10pps2 conflict found on the IPE trunk during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK Class of Service to check the 10pps2 setting and LD 14 to correct the data.



**ERR4078 tn**

20pps conflict found on the IPE trunk during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TRK to check the 20pps setting and LD 14 to correct the data.

**ERR4079 tn**

The hardware ID for type of unit (COT, DID, etc.) and signaling (LOP,GRD, EAM, etc.) is not supported by the XUT, XEM, or any other IPE trunk card. The software configuration no longer matches the hardware configuration for the unit. Unit is disabled.

**ACTION:** Check that the correct card for the desired trunks is in the configured slot. Check the configuration of the unit. Refer to the *administration input/output guide*. Use LD 20 TNB to check the impedance setting and LD 14 to correct the data.

**ERR4080**

D-channel was not found for sending a facility Message. Output appears as follows (with X11 Release 16 and later software):

**NTFERR a b c**

**DIGPR a b c**

**INVDN p a b c**

Where:

**a** = originating digits

**b** = destination digits

**c** = customer number

**p** = TCAP package type

X11 Release 15 messages appear as follows:

FAIL ORIG: xxx DEST: xxx CUST: xx

**ACTION:** Refer to the *ISDN Primary Rate Interface NTP*. Set up messaging in LD 96.

**ERR4081**

A Facility Reject message was received. Destination digits cannot be translated. Output with message:

**PKG: xxx NOXLAN**

**ORIG: xxx DEST: xxx CUST: xx**

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlay LD 86 to verify that the NCDP prompt is set to the same length in all systems within the network.

**ERR4082**

TCAP Package type is not recognized by Network Message Center (NMC) feature. Output with message:

**PKG: xxx**

**ORIG: xxx DEST: xxx CUST: xx**

**ACTION:** Check the networking data database.

**ERR4082**

ICP does not support more than 4 digit DNs. Procedure ICP\_ESTABLISH and ICP\_FIND\_DN

**ACTION:** Information only, no action required.

**ERR4083**

TCAP Component is not recognized by Network Message Center (NMC) feature. Output with message:

**PKG: xxx COMP: xxx**

**ORIG: xxx DEST: xxx CUST: xx**

**ACTION:** Check the networking data database.

**ERR4084**

TCAP Operation is not recognized by Network Message Center (NMC) feature. Output with message:

**PKG: xxx COMP: xxx OPER: xxx**

**ORIG: xxx DEST: xxx CUST: xx**

**ACTION:** Check the networking data database.

**ERR4085**

TCAP parameter is not recognized by Network Message Center (NMC) feature.

Output with message:

**PKG: xxx COMP: xxx OPER: xxx PARM: xxx**

**ORIG: xxx DEST: xxx CUST: xx**

**ACTION:** Check the networking data database.

**ERR4100**

Tenant TDATAPTR or route ACCESS\_ARRAY block does not exist.

**ACTION:** Contact your technical support group.

**ERR4101**

PBX output buffer overflow for Digital set.

**ACTION:** Refer to the *administration input/output guide*. Print out the CFN record using LD 22 CFN to check the 500 output buffer size. Run TFS004 using LD 2. This will tell you if the buffer is overflowing or if the line card is faulty. Use LD 17 to resize the buffer. Contact your technical support group for more information.

**ERR4102**

Set requested to disable the unit. LAMPAUDIT disables it.

**ACTION:** Contact your technical support group.

**ERR4103**

Meridian 3000 Touch Telephone watchdog overflow.

**ACTION:** In LD 32 use DISU l s c u to disable and ENLU l s c u to enable the telephone. If the message reappears, replace the Meridian 3000 Touch Telephone or the line card following the steps in the *Hardware replacement* guide. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**ERR4104**

TSET data TN not equipped.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 DNB to check if the data TN is equipped and LD 11 to correct it.

**ERR4105**

An appearance of Multiple Appearance DN cannot answer a call. It resides on a telephone with CLS that cannot receive external calls, or, it resides on a telephone with a tenant that differs from the tenant of other telephones that can answer the call. All the appearances of the DN should reside on sets that belong to the same tenant.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the Multiple Appearance DN and LD 11 or 10 to correct the data.

**ERR4106**

TSET downloading buffer overflow.

**ACTION:** Contact your technical support group.

**ERR4108 tn**

Possible tip and ring reversal at central office or CO trunk card problem.

**ACTION:** Check the polarity at the cross connect with meter for reversal. Contact your technical support group for help in checking with the local public exchange office personnel for reverse polarity.

**ERR4109**

VASID out-of-range.

**ACTION:** Check the database in LD 17. Contact your technical support group.

**ERR4111**

Incorrect key function defined for data TN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the data and LD 11 or 10 to correct the data.

**ERR4112**

Data TN not defined. An M2317 telephone cannot have Single Call Ringing (SCR) on key 10.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the data and LD 11 or 10 to correct the data.

**ERR4113**

Digital set has sent handsfree activated message, but does not have Handsfree Class of Service (HFA).

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check data and LD 11 or 10 to correct data.

**ERR4114**

Data DN of M2317 or M3000 Touch telephone does not have two appearances.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check data and LD 11 or 10 to correct the data.

**ERR4115**

The M2317 or M3000 telephone has requested a restart.

1. If telephone has not been manually reversed down and up and these messages consistently appear then, start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

a) The telephone may be faulty.

**ACTION:** Replace the telephone following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

b) The line card channel may be faulty.

**ACTION:** Replace the line card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

c) The telephone power supply may be faulty.

**ACTION:** Replace the power supply card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared. Replace the power supply.

2. ORIG & TER TN will show if active in a call.

**ACTION:** To check if a call on this telephone is active, use TRAC l s c u in LD 80. If you need help with the commands or system responses refer to the *TRA* chapter in this guide.

**ERR4116**

The M2317 set has received a message when the headset was unplugged, but no message was sent when the headset was plugged in. Ignore this message during sysload as all headsets should be unplugged.

**ACTION:** Replace the telephone following the steps in the *Hardware replacement* guide.

**ERR4117**

Incorrect tree class.

**ACTION:** Contact your technical support group.

**ERR4118**

Tree is corrupted.

**ACTION:** Contact your technical support group.

**ERR4119**

IDC pointer is corrupted.

**ACTION:** Contact your technical support group.

**ERR4120**

Invalid digit received by IDC.

**ACTION:** Contact your technical support group.

**ERR4124**

Add the NSF IE to the SETUP message

**ACTION:** Contact your technical support group.

**ERR4125**

Message CRI is not in idle queue.

**ACTION:** Perform a system initialization, and if the problem continues contact your technical support group.

**ERR4126**

Output queue is not allocated.

**ACTION:** Contact your technical support group.

**ERR4127**

Message CR is not in QU\_CSL\_OP.

**ACTION:** Perform a system initialization, and if the problem continues contact your technical support group.

**ERR4128**

Output message has length zero.

**ACTION:** Contact your technical support group.

**ERR4129 dn c t1 t2**

The duration time set for the call in the Abandoned Call Waiting in the Source queue is invalid. Output: **dn** = ACD-DN, **c** = customer, **t1** = time of day, **t2** = time call arrived.

**ACTION:** Refer to the *Automatic Call Distribution guide*.

**ERR4130**

Wrong call reference flag. Incompatible Protocol between the interface. If the error continues, file a problem report.

**ACTION:** Contact your technical support group.

**ERR4131**

The message received has global CREF. Incompatible protocol between the interface. If the error continues, file a problem report.

**ACTION:** Contact your technical support group.

**ERR4132**

Received a SERVICE, SERVICE ACK, RESTART, RESTART ACK with a non-global CREF. Incompatible protocol between the interface.

**ACTION:** Contact your technical support group.

**ERR4133**

For ISDN ESS #4 received a SERVICE, SERVICE ACK, RESTART, RESTART ACK with the wrong call reference flag. Incompatible protocol between the interface. If the error continues, file a problem report.

**ACTION:** Contact your technical support group.

**ERR4134 data**

First digit is not KP. If the error repeats with the same MFR, test the MFR card; otherwise suspect a fault on far-end outpulsing mechanism, or noisy trunk. The data output is:

**TRK tn MFR tn ID j ddd ADR j ddd**

Where:

**TRK tn** = TN of the FGDT trunk (l s c u, loop ch)

**MFR tn** = TN of the MF receiver (l s c u, or loop ch)

**ID j ddd** = ID field, **j** = number of digits, **ddd** = digits

**ADR j ddd** = Address field, **j** = number of digits, **ddd** = digits

**Note:** If the address was not received or was empty, it is not printed.

**ACTION:** Replace the MFR card, following the steps in the *Hardware replacement* guide. If this message reappears, contact your technical support group for assistance from the far-end.

## **ERR4135 data**

Illegal size of a field. If the error repeats with the same MFR, test the MFR card. Refer to ERR4134 for a description of output data.

**ACTION:** Replace the MFR card, following the steps in the *Hardware replacement* guide. If this message reappears, contact your technical support group for assistance from the far-end.

## **ERR4136 data**

Illegal MF combination. If the error repeats with the same MFR, test the MFR card; otherwise suspect a fault on far-end outpulsing mechanism, or noisy trunk. Refer to ERR4050 for a description of output data.

**ACTION:** Replace the MFR card, following the steps in the *Hardware replacement* guide. If this message reappears, contact your technical support group for assistance from the far-end.

## **ERR4137 data**

Unexpected digit (ST', ST'', ST'''), or KP in the middle of a field. If the error repeats with the same MFR, test the MFR card; otherwise suspect a fault on far-end outpulsing mechanism, or noisy trunk. Refer to ERR4050 for a description of output data.

**ACTION:** Replace the MFR card, following the steps in the *Hardware replacement* guide. If this message reappears, contact your technical support group for assistance from the far-end.

## **ERR4138 data**

Call category denied. Refer to ERR4134 for a description of output data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 CRB to check if the CCAN definitions are consistent with the far-end LEC arrangement. Contact your technical support group for assistance from the far-end. Use LD 19 to correct the fault.

## **ERR4139 data**

ANI field empty when should be present. Refer to ERR4134 for a description of output data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 CRB to check if the CCAN definitions are consistent with the far-end LEC arrangement. Contact your technical support group for assistance from far-end. Use LD 19 to correct the fault.



**ERR4140 data**

ANI field present when should be empty. Refer to ERR4134 for a description of output data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 CRB to check if the CCAN definitions are consistent with the far-end LEC arrangement. Contact your technical support group for assistance from far-end. Use LD 19 to correct the fault.

**ERR4141 data**

Undefined information digit (I I) number received. This is an attempt by an unauthorized user. The output data is: **CUST c Trm hh:mm:ss dd/mm/yyyy II-NPANXXXXX zzzzz**

Where:

**c** = customer number

**Trm** = FGD route and member number

**II-NPANXXXXX** = FGD ID field information

**zzzzz** = FGD field address digits

**ACTION:** Contact your technical support group for help in checking with the local public exchange office personnel.

**ERR4142 data**

Undefined ANI number received. This is an attempt by an unauthorized user. Refer to ERR4141 for description of the output data.

**ACTION:** Contact your technical support group for help in checking with the local public exchange office personnel.

**ERR4143 data**

Cannot access NARS database. Refer to ERR4134 for a description of output data.

**ACTION:** Refer to the *administration input/output guide*. Use the ESN overlays to correct the data.

**ERR4144 data**

Cannot access FGD block. Refer to ERR4134 for a description of output data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB and check the value of the FGDB in the route and the definition of the related FGD block.

**ERR4145 data**

100 line test DN not defined. Refer to ERR4134 for a description of output data.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 CDB to check and define the 100 test line in LD 15.

**ERR4147 data**

An invalid message while waiting for MF digits. Output data is mfrtn input\_message.

**ACTION:** Test the MFR card.

**ERR4148**

An invalid message while waiting for DTR digits. Output data is mfrtn input\_message.

**ACTION:** Test the MFR card.

**ERR4149**

The output buffer to PRI2 card overflowed.

**ACTION:** Test or replace the PRI card.

**ERR4161**

Call Reference length is greater than 2.

**ACTION:** Contact your technical support group for assistance from the far-end.

**ERR4162 x**

The length **x** of the call reference of an incoming ISDN message was incorrect. The length allowed in North America is 1 or 2. For some other interfaces, only a length of 2 is allowed. There may be a compatibility problem with the far-end.

**ACTION:** Contact your technical support group for assistance from the far-end.

**ERR4200**

Speed Call list check failed.

**ACTION:** Perform a system reload, and if the problem continues contact your technical support group.

**ERR4201**

Speed Call list CR setup failed.

**ACTION:** Perform a system reload, and if the problem continues contact your technical support group.

**ERR4202**

Speed Call indexing failed.

**ACTION:** Perform a system reload, and if the problem continues contact your technical support group.

**ERR4203**

Speed Call entry pointer nil.

**ACTION:** Perform a system reload, and if the problem continues contact your technical support group.

**ERR4204**

Speed Call digits to CR failed.

**ACTION:** Perform a system reload, and if the problem continues contact your technical support group.

**ERR4205**

Pretranslation table being removed.

**ACTION:** Information only, no action required.

**ERR4220**

1. Secondary Control register on MSI card (QPC584) failed R/W test.

2. Receiving this message during upgrade to new software.

**ACTION:** Check the MSI card to verify that the correct target data cartridge is used to receive the datadump. Check the associated cabling.

**ERR4221**

MSI Refer to the *administration input/output guide*. Use the reading from backup device when it should be reading from primary device.

**ACTION:** Check for proper switch settings on the MSI card.

**ERR4222**

Auto-terminating DN defined in the trunk block for this ACD DNIS call is not an ACD DN.

**ACTION:** Refer to the *administration input/output guide*. Use the ACD overlays to correct the data.

**ERR4225**

500/2500 Set DN cannot be defined until CPND feature is configured for that set. DATA: 500/2500 set DN and packed TN

**ACTION:** Refer to the *administration input/output guide*. Use the LD 95 PRT CPND command to check and to configure any name first. Use LD 10 to configure the CPND feature.

**ERR4226 xx**

Insufficient storage for CPND Name.

**ACTION:** Add memory or relocate CPND Logic page. **xx** = DN or DIG group and member numbers. Refer to the *administration input/output guide*. Use the LD 95 PRT CPND command to check and to configure any name first. Use LD 10 to configure the CPND feature.

**ERR4227 xx**

Insufficient storage for DIG name table.

**ACTION:** Add memory or relocate CPND Logic page. **xx** = DN or DIG group and member numbers. Refer to the *administration input/output guide*. Use LD 95 PRT CPND to check and to configure any name first. Use LD 10 to configure CPND feature.

**ERR4228**

Wrong I.E. for message type.

**ACTION:** Contact your technical support group.

**ERR4229**

Wrong I.E. for STATUS message.

**ACTION:** Contact your technical support group.

**ERR4230**

Wrong I.E. for RELease message.

**ACTION:** Contact your technical support group.

**ERR4231**

Wrong I.E. for REStart message.

**ACTION:** Contact your technical support group.

**ERR4232**

Wrong I.E. for CONNect message.

**ACTION:** Contact your technical support group.

**ERR4233**

Wrong I.E. for SETUP message.

**ACTION:** Contact your technical support group.

**ERR4234**

Wrong I.E. for PROGress message.

**ACTION:** Contact your technical support group.

**ERR4235**

Wrong I.E. for CALL PROCeeding message.

**ACTION:** Contact your technical support group.

**ERR4236**

Wrong I.E. for ALERTing message.

**ACTION:** Contact your technical support group.

**ERR4237**

Wrong message type.

**ACTION:** Contact your technical support group.

**ERR4238**

Wrong coding standard.

**ACTION:** Contact your technical support group.

**ERR4239**

BC - extension bit not right.

**ACTION:** Contact your technical support group.

**ERR4240**

BC - information transfer not supported.

**ACTION:** Information only, no action required.

**ERR4241**

BC - information transfer rate/mode not supported.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4242**

BC - layer1 protocol id not correct.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4243**

BC - rate is not correct.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4244**

General location not supported.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4245**

Cause value not supported.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4246**

Channel id octet3 error.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4247**

Channel id octet5 error.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4248**

Channel number not exist.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4249**

Extension bit wrong in cause.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4250**

Extension bit wrong in connected number.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4251**

Extension bit wrong in redirecting number.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4252**

Extension bit wrong in redirection number.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4253**

Extension bit wrong in channel number.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4254**

Extension bit wrong in progress indicator.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4255**

Extension bit wrong in NSF.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4256**

Extension bit wrong in calling party number.

**ACTION:** Contact your technical support group.

**ERR4257**

Extension bit wrong in called party number.

**ACTION:** Contact your technical support group.

**ERR4258**

Extension bit wrong in restart.

**ACTION:** Contact your technical support group.

**ERR4259**

Reference length error.

**ACTION:** Contact your technical support group.

**ERR4260**

CREF flag in SETUP is incorrect.

**ACTION:** Contact your technical support group.

**ERR4261**

State message error, protocol violation.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4262**

NTWK ID not correct in TNS.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4263**

No REStart ACK message received.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4264**

Message received in NULL state.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4265**

Mandatory Channel ID missing in ALERTing.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4266**

Mandatory Channel ID missing in CONNect.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.



**ERR4267**

Service in NSF doesn't match service route.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4268**

PROGRESS INDICATOR not supported.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4269**

ZERO length for mandatory IE.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4270**

ZERO length for option IE.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4271**

TNS, BAD NTWK ID, TYPE/PLAN.

**ACTION:** Contact your technical support group.

**ERR4272**

BC - layer id not correct.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4273**

Incorrect TNS Network ID.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4274**

Message Length exceeds buffer size (261).

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4275

Protocol discriminator is not compatible with a Message length of > 2.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4276

The maintenance message is only allowed in specific DCH interface.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4277 c dn ifdn

Invalid Interflow destination. Where:

**c** = customer, **dn** = ACD-DN, **ifdn** = Interflow DN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the database.

## ERR4278 c dn ifdn

Invalid Night Call Forward destination specified. Where:

**c** = customer, **dn** = ACD-DN, **ifdn** = Interflow DN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the database.

## ERR4279

No Service Ack message received.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4280

Use LD 92 to diagnose the ADM TN.

**ACTION:** Refer to the action for ERR4279.

## ERR4281

Message input received from a 64 k data module has no Call Register available.

**ACTION:** Information only, no action required.

## ERR4282 d b

No response from far-end to this PRA call.

Where:

**d** = DCHI number, **b** = B-channel number.

**ACTION:** Refer to the *ISDN Primary Rate Interface*, and check the D-channel link on the near and far-end switches. Contact your technical support group.

**ERR4283**

Both DCHs have been released. Establish the DCH.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4285**

ACNT key defined but no ADS block defined.

**ACTION:** Take out the ACNT key or the defined ADS block.

**ERR4286**

Message count on the loop exceeds the threshold value.

**ACTION:** Refer to any OVD messages previously printed, and check the hardware for defects that generate an overload condition.

Rearrange the TNs to another location or they may be disabled. If you need help with the commands or system responses refer to the *OVD* chapter in this guide.

**ERR4287**

Customer number greater than 31 while CDRE is not packaged.

**ACTION:** Information only, no action required.

**ERR4288**

Route number is greater than 127 while CDRE is not packaged.

**ACTION:** Information only, no action required.

**ERR4289**

Route number for Music Route is not a Music Route.

**ACTION:** Refer to the *administration input/output guide*. Check all routes in LD 15, LD 23 and LD 50 for MUS.

**ERR4291**

Music Route is undefined.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 to check the Music Route and LD 16 to correct it.

## ERR4293

Both DCHs are out-of-service.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Release and establish both DCHs.

## ERR4300 c dn n i

Invalid DN in the Speed Call List. Prints an error message and skips to the next DN.

Where:

**c** = customer, **dn** = Pilot DN, **n** = LSNO, **i** = INDEX value.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the database.

## ERR4301 c dn n i

Pilot DN not allowed as Trunk/Tenant Night DN. Call is diverted to customer night DN during Night Service.

Where:

**c** = customer, **dn** = Pilot DN, **n** = LSNO, **i** = INDEX value.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the database.

## ERR4302 c dn n i

Pilot DN is not allowed Speed Call list.

Where:

**c** = customer, **dn** = Pilot DN, **n** = LSNO, **i** = INDEX value.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the database.

## ERR4302 c dn tn

Pilot DN not allowed as Hunt/CFW/MNDN when used to access a Speed Call. Where:

**c** = customer, **dn** = Pilot DN, **tn** = TN.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the database.

## ERR4304

Display DN too large to be output in CDR record.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the database.

**ERR4500**

GPT Integrated Digital Access ERR: <x x x x x>

The format of the message is **ERR4500 xxxx**, where **xxxx** is as follows:

**300 d** = A message has been received from DTSL/DDSL **d** that is either unequipped or disabled.

**311 d** = Message length of zero read from DTSL **d** — suspect faulty card.

**312 d** = Message length exceeding 63 bytes read from DTSL **d**.

**313 d** = DTSL **d** is not responding.

**314 d** = Status register of DTSL **d** is not accessible.

**315 d** = Data register of DTSL **d** is not accessible.

**330 d** = Message output to DTSL/DDSL **d** has failed.

**333 d** = Invalid interrupt.

**401 d** = Message length of less than 3 bytes has been received from DTSL/DDSL **d**.

**402 d l c** = Message received on unconfigured channel **c**, loop **l**, and DTSL/DDSL **d**.

**403 d tn** = Flow control encountered on DTSL/DDSL **d**. **tn** gives packed TN of the channel.

**ACTION:** Refer to the *ISDN Primary Rate Interface guide*.

**ERR4501**

Received a PRA message with an unsupported service identifier.

**ACTION:** Refer to the *ISDN Primary Rate Interface guide*. Contact your technical support group.

**ERR4502**

Service discriminator is not supported by ISDN.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR4503**

Message is bouncing back and forth between two nodes.

**ACTION:** Call your technical support group for a software patch.

## ERR4506

Facility reject received. Data: Orig PNI, Orig #, Dest PNI, Dest #, Reason. The values for "Reason" are:

- 0 = no transmission address of such nature
- 1 = no transmission address for this specific address
- 2 = application congestion
- 3 = application failure
- 4 = unequipped application
- 5 = network failure
- 6 = network congestion

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4507 c s

Missing PNI number in the customer data block.

Where:

c = customer, s = service ID.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4508

Received bad facility I.E.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4509 s

1. PNI missing in RDB, s = Service ID.

2. Receiving this message and the PNI is missing type error when calling across an ISDN network with NMS service. All sites involved with NMS type service in a network, must have package 148.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## ERR4510

ROSE component sent is being rejected.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5000**

Target ID is not an ACD-DN or NARS DN. Procedure: Successful

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5001**

Target ID did not access the ISL/PRA Trunk. Procedure:  
SEND\_CALLSETUP

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5002**

The QPC720C PRI is required for 1.5 Mb/s GPRI, otherwise the MU/A law conversion and loss level adjustments will not function properly.

**ACTION:** Use QPC720C, or newer, hardware.

**ERR5003 x**

An incoming message, shorter than 5 octets, is ignored. The message should have a minimum of 5 octets if <n> is equal to 2.

Where, **x** = the length of call reference in hex.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5010**

ISDN: Receive a Status messages with CAUSE = 30. This was in response to Status Enquiry but SL-1 did not send out a Status Enquiry message.

Output format:

**DCH = x IFC = y**

**x** = D-channel number

**y** = Interface Type

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5011 x**

Received IE is in the wrong codeset; **x** = IE index.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5012 x**

Received IE is wrong in the High Layer Compatibility; **x** = wrong IE information.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5015 x y z**

D-channel is interfacing with a software issue not supported by the application.

Output:

**x** = D-channel number;

**y** = the last digit of the release ID (for example: if LD 17 prompt RLS = 16, then **y** = 6);

**z** = application ID.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group. Be sure the software release at the far-end is correctly defined by prompt RLS in LD 17.

**ERR5016**

Wrong extension bit for information request IE.

**ACTION:** Contact your technical support group.

**ERR5017 c**

Customer **c** should have a common printer defined. Procedure ICP\_GET\_PRINTER.

**ACTION:** Contact your technical support group.

**ERR5018 t**

Tenant **t** should have a common printer defined. Procedure ICP\_GET\_PRINTER.

**ACTION:** Information only, no action required.

**ERR5019**

This TN should have a printer configured. Procedure ICP\_ESTABLISH and ICP\_GET\_ATTEN\_PTR.

**ACTION:** Information only, no action required.



**ERR5020**

That information request type is not supported.  
ICP\_STORECFW and ICP\_ACT\_ALLOWED.  
**ACTION:** Information only, no action required.

**ERR5021**

Wrong length for information request IE.  
**ACTION:** Contact your technical support group.

**ERR5022**

The specific information requested is not supported.  
**ACTION:** Information only, no action required.

**ERR5024**

The Auto-Terminating number for this In-Band ANI route is not an ACD-DN.  
**ACTION:** Refer to the *administration input/output guide*. Use the ACD overlays to correct the data.

**ERR5025 x**

A call originating or being tandem switched though on this switch is trying to insert more than 8 digits in the calling party number for an AXE-10 interface. Only eight (8) digits can be included in the calling party number, or the digits are truncated to the right. **x** = DCH Interface number for the SETUP message.  
**ACTION:** Use PFX1 and PFX2 in LD 15 to modify the calling party number so that PFX1+PFX2+DN is less than 8 digits.

**ERR5026**

Multi-Tenant alone or with CPG level services is enabled. The caller is denied access to the CPG Night DN. This is an illegal configuration. Tenants sharing the same CPG should be allowed access to each other.  
**ACTION:** Refer to the *administration input/output guide*. Use LD 93 to check the Multi-Tenant data and correct it.

**ERR5027**

Stepping action is aborted. Stepping to an ISA route is not allowed.  
**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB to check the stepping route number and LD 16 to correct it.

## ERR5028

Stepping action is aborted. Stepping to an ISA SERVICE route is not allowed.

**ACTION:** Refer to the *administration input/output guide*. Use LD 21 RDB to check the stepping route number and LD 16 to correct it.

## ERR5029

Reverse call charging is not allowed.

**ACTION:** Information only. Disregard the call charging information received from the network.

## ERR5030

Information in the TYPE field of the Information Element is invalid.

**ACTION:** Information only, no action required.

## ERR5031

The network will disregard the ISDN call charging information received, because the call was never properly established.

**ACTION:** Information only, no action required.

## ERR5032

The HM\_STRUCT for a set is missing in the procedure WUK\_LAMP\_FLASH, or the HM\_STRUCT for a set is missing or the set does not have CCSA Class of Service procedure WUK\_DARK\_OR\_LIT.

Data corruption.

**ACTION:** Perform a system reload, and contact your technical support.

## ERR5033

An invalid lamp state has occurred in the procedure WUK\_DARK\_OR\_LIT. Either there is a request and the Wake Up key (WUK) lamp is not lit or there is no request and the WUK lamp is lit.

**ACTION:** Information only, no action required.

## ERR5034

aux\_custptr [] = NIL in procedure store\_awu. Data corruption.

**ACTION:** Perform a system reload, and contact your technical support.

**ERR5035**

Unable to find a primary appearance DN to store the Wake Up call. Procedure wuk\_get\_tn or ffc\_find\_awu\_tn. Cannot proceed.

**ACTION:** Perform a system reload, and contact your technical support.

**ERR5037**

A restart message has been sent twice, but the far-end has not responded with the proper RESTART ACK message. The PRA B-channels are left in a maintenance busy state. The ISL trunks are not marked as maintenance busy if they revert back to a conventional trunk (option enabled).

**ACTION:** Check the D-channel status for both ends in LD 96. Try to disable and re-enable the D-channels.

**ERR5039 d**

The Virtual Network Service (VNS) message received is discarded because the VNS package is not equipped. **d** = D-channel number.

**ACTION:** Contact your technical support group.

**ERR5040**

No idle channel is available for a VNS customer.

**ACTION:** Contact your technical support group.

**ERR5041**

VNS mismatch due to timing. Depending on frequency, this may or may not be a problem.

**ACTION:** Information only. If the error continues contact your technical support group.

**ERR5043**

Invalid date information element for PRA messaging.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5044**

No posttransl blk defined in pd. Pretranslation.

**ACTION:** Contact your technical support group.

**ERR5045**

No RPA FFC PARM blk defined for the RPS.

**ACTION:** Contact your technical support group.

**ERR5046**

DN does not exist in the RPA-DN tree (table).

**ACTION:** Information only, no action required.

**ERR5047**

RPA does not support diversion to manual RPS.

**ACTION:** Information only, no action required.

**ERR5048**

RPA traffic block pointer in RPA SYS PARM blk is nil.

**ACTION:** Information only, no action required.

**ERR5049**

Rising edge of Call Accepted signal is either too short or too long from trailing All Digits Revd signal.

**ACTION:** Contact your technical support group for assistance from the far-end.

**ERR5050**

Rising edge of Start Talk signal is either too short or too long from trailing Call Accepted signal. Speech path will not be provided; call can be answered in normal manner.

**ACTION:** Contact your technical support group for assistance from the far-end.

**ERR5051**

NO RPCD data defined.

**ACTION:** Contact your technical support group.

**ERR5054**

The ISDN call charging information exceeds the limit of 9 digits.

Please disregard the charging information message from the network.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5055**

Unable to generate End-to-End Signaling tone due to one or more of the following:

- no available conference slots
- no available TDS slots
- no available junctor slots
- no available time slots to establish speech paths among all involved conference parties
- this can be a traffic problem

**ACTION:** Contact your technical support or engineering group to help you check that the system is properly balanced. Ensure that the system has enough DTRs to support the load. Verify that Music On-Hold is used on the DTI trunks. Check your traffic reports for the specific hour to help isolate the problem. If necessary, add applicable cards following the *Installation NTP*.

**ERR5056 l s c u**

An invalid EES lamp state exists on the Attendant console. The TN **l s c u** is output.

**ACTION:** Disable and re-enable the Attendant console in LD 32.

**ERR5057 a d o t**

The D-channel interface for routing Network Message Service (NMS) facility messages is not an SL-1 interface.

**a** = operation code for TCAP protocol

**d** = the D-channel sending FACILITY message

**o** = Originating digits

**t** = Terminating digits

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

**ERR5058 a o t**

Please check the system registers resources. Cannot obtain Call Register to simulate the configuration request for sender feature originated at remote switch.

**a** = operation code for TCAP protocol

**o** = Originating digits

**t** = Terminating digits

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## **ERR5059**

No DNP message is sent to the Meridian Mail server.

The DNP message for ISDN/AP is not retrieved for a Conference call to the Meridian Mail server when activated from a remote switch.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Contact your technical support group.

## **ERR5060 tn**

This unit has an LSPK key, but the DN defined does not match with any loudspeaker.

**ACTION:** Contact your technical support group.

## **ERR5061**

You cannot synchronize a local clock, it must be set manually.

**ACTION:** Information only, no action required.

## **ERR5062**

That TCAP package type is not recognized by the TSYNC feature.

**ACTION:** Contact your technical support group.

## **ERR5063**

That TCAP parameter is not recognized by the TSYNC feature.

**ACTION:** Contact your technical support group.

## **ERR5064**

The local clock can not be synchronized, the local clock must be set.

**ACTION:** Information only, no action required.

## **ERR5065**

The TCAP package type is not recognized by the TSYNC feature.

**ACTION:** Contact your technical support group.

## **ERR5066**

That TCAP parameter is not recognized by the TSYNC feature.

**ACTION:** Contact your technical support group.

**ERR5067**

Previous Hospitality block is found to be missing. The new entry is used to recreate the lost block.

**ACTION:** Refer to the *administration input/output guide*. Use LD 49 PRT to check and correct the Hospitality block.

**ERR5068**

Corrupted NFCR structures. TREE\_EXIST of Hospitality.

**ACTION:** Contact your technical support group.

**ERR5069**

Corrupted Hospitality tree. Hospitality procedure.

**ACTION:** Refer to the *administration input/output guide*. Use LD 43 EDD correct the Hospitality tree.

**ERR5070**

Prime DN key must be SCR or SCN for a Hospitality set.  
HSP\_FORCEDISC of Hospitality.

**ACTION:** Check the database in LD 11 or LD 10.

**ERR5071**

Hospitality tree does not exist. TREE\_EXIST of Hospitality.

**ACTION:** Contact your technical support group.

**ERR5072**

Accessed tree is not a Hospitality tree. HSP\_GETLEAF\_PTR of Hospitality.

**ACTION:** Contact your technical support group.

**ERR5073**

Corrupted value of TREE\_DIGIT\_CODE in Hospitality tree.  
HSP\_GETLEAF\_PTR of Hospitality.

**ACTION:** Contact your technical support group.

**ERR5075 x**

The NT8D19 Memory/Peripheral Signaling card had **x** memory parity errors in the last 30 minutes. Ignore occasional occurrences as these errors are self-correcting.

**ACTION:** If this error persists or is accompanied by unexplained system reloads, replace the Memory/Peripheral Signaling card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**ERR5087 x**

Invalid value for the interface identifier field of channel id information element from an incoming message. Where, **x** = the message type in hex.

**ACTION:** Contact your technical support group.

**ERR5088**

Invalid value for the class field of restart indicator information element from an incoming message. Where, **x** = the message type in hex.

**ACTION:** Contact your technical support group.

**ERR5090 data**

Could not send an activation/deactivation message to an MFR.

**ACTION:** Contact your technical support group.

**ERR5091**

Speaker dn, unit dn - loudspeaker cannot enter CONF; number of loudspeakers in conference is at maximum value.

**ACTION:** Contact your technical support group.

**ERR5092**

**Warning:** LDNO must be defined for the customer for ISDN DID calls in order to determine the number of digits expected for successful call termination.

**ACTION:** Contact your technical support group.

**ERR5094**

Not the same dial tone frequency range defined on the route and on the dial tone detector.

**ACTION:** Contact your technical support group.

**ERR5095**

Timer value conflict found on Universal Trunk or E & M Dictation card (NT8D14/NT8D15) during audit parameter download.

**ACTION:** Contact your technical support group.



**ERR5096**

A TNTRANS was successful when the AWU call was linked to the attendant queue, but is now unsuccessful when the actual VIP call was attempted.

**ACTION:** Contact your technical support group.

**ERR5097**

Received an invalid call reference from the far-end switch.

**ACTION:** Contact your technical support group.

**ERR5098**

Invalid Cardlan Message. Received a data message before receiving an address type message.

**ACTION:** Contact your technical support group.

**ERR5099**

Invalid Cardlan Message. Received a retransmit message without sending a message.

**ACTION:** Contact your technical support group.

**ERR5100**

Invalid Cardlan message. Received an unrecognizable message.

**ACTION:** Contact your technical support group.

**ERR5101**

Cardlan received a message out of sequence.

**ACTION:** Contact your technical support group.

**ERR5102**

A write to 64180 Interrupt control register failed

**ACTION:** Contact your technical support group.

**ERR5103**

A write to 64180 Data control register failed.

**ACTION:** Contact your technical support group.

**ERR5104**

Invalid Cardlan Message.

**ACTION:** Contact your technical support group.

**ERR5105**

Received a retransmit message from an XPE pack.

**ACTION:** Information only, no action required.

**ERR5106**

Cardlan audit has detected a stuck cardlan state. Problem has been reset.

**ACTION:** Information only, no action required.

**ERR5107**

An invalid 64180 message has been received.

**ACTION:** Contact your technical support group.

**ERR5108**

Hardware type error message received from cardlan.

**ACTION:** Contact your technical support group.

**ERR5109**

Input IVD message has been discarded.

**ACTION:** Information only, no action required.

**ERR5110**

Output SSD message is discarded.

**ACTION:** Contact your technical support group.

**ERR5111**

Invalid sequence type has been detected in a transmit XI type message.

**ACTION:** Contact your technical support group.

**ERR5112**

Overload condition has been detected on an XPE line card. Signaling to the card has been disabled.

**ACTION:** Refer to the OVD chapter in this guide. Follow steps 1 through 15 in the section called *How to use manual print LD 77*.

**ERR5113**

Three consecutive overload conditions have occurred for this card. The card will be disabled and will not be re-enabled. You must replace the card.

**ACTION:** Replace the card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared. If you need help refer to the *OVD* chapter.

**ERR5114**

A signaling channel has been disabled. The channel will be enabled automatically.

**ACTION:** Information only, no action required.

**ERR5115**

An overload card has been enabled again. Card must be operational.

**ACTION:** Contact your technical support group.

**ERR5120**

The 1.5 Mb/s International ISDN Gateway feature does not support the QPC472 DTI hardware for the MU/A law conversion and loss level adjustments.

**ACTION:** Refer to the *ISDN Primary Rate Interface*. Use the QPC720C PRI hardware for 1.5 Mbps DTI trunk connectivities.

**ERR5132 data**

For a tandem CDP DSC call, the incoming route and outgoing route belong to the same Route List Index (RLI). The output data is: customer number, incoming route, outgoing route, outgoing route list index, outpulsed digits.

**ACTION:** To avoid potential looping problems, the CDP DSC database may need to be modified. Contact your technical support group.

**ERR5133**

Invalid content of optional information element.

**ACTION:** Contact your technical support group.

**ERR5134**

Invalid information element for the message type.

**ACTION:** Contact your technical support group.

**ERR5135**

Mandatory Cause Information Element missing in Release or Release Complete message. Procedure I\_RELEASE.

**ACTION:** Contact your technical support group.

**ERR5136**

Invalid octet 3A in Calling Party Number Information Element. Procedure CALLING\_PTY\_#.

**ACTION:** Contact your technical support group.

**ERR5137**

Protocol error. Procedure DEC\_STATUS.

**ACTION:** Contact your technical support group.

**ERR5138**

Global Call Reference not supported. Procedure GLOBAL\_CREF.

**ACTION:** Contact your technical support group.

**ERR5139 a b c d e f**

A data corruption in the ISA\_ACTIVE\_CALL variable for the ISA service route has been detected and fixed. The data output is:

**a** = customer number

**b** = ISA master route number

**c** = ISA service route number

**d** = number of trunks configured for the master route

**e** = audited active call count

**f** = active call count in data-store

**ACTION:** Contact your technical support group.

**ERR5140 a b c d e**

A data corruption in the ISA\_B\_RESERVED variable for the ISA service route has been detected and fixed. The data output is:

**a** = customer number

**b** = ISA master route number

**c** = ISA service route number

**d** = number of B-channels reserved in data-store

**e** = audited number of B-channels reserved

**ACTION:** Contact your technical support group.

**ERR5141 a b c d e f g h**

A data corruption in the ISA\_BCH\_AVAIL variable for the ISA service route has been detected and fixed. The data output is:

**a** = customer number

**b** = ISA master route number

**c** = ISA service route number

**d** = audited number of channels available

**e** = number of trunks configured for the master route

**f** = audited number of busy channels

**g** = number of channels available in data-store

**h** = number of channels reserved in data-store

**ACTION:** Contact your technical support group.

**ERR5144**

Invalid length of information element.

**ACTION:** Contact your technical support group.

**ERR5145**

Extension bit or IE length error in Party Category IE.

**ACTION:** Contact your technical support group.

**ERR5146**

Extension bit or IE length error in Transit Counter IE.

**ACTION:** Contact your technical support group.

**ERR5147**

Invalid numbering type, numbering plan combination.

**ACTION:** Contact your technical support group.

**ERR5148**

Invalid restart class.

**ACTION:** Contact your technical support group.

**ERR5149**

Receipt of a Status reporting a Cause different than response to STATUS ENQ.

**ACTION:** Contact your technical support group.

**ERR5150**

T308 timed out twice in U19 channel. Put in maint-busy state followed by INT (MSG\_CR), D-channel number, UTN, State, Call Reference.

**ACTION:** Contact your technical support group.

**ERR5151**

Undesirable Interface Indicator present in Channel ID IE.

**ACTION:** Contact your technical support group.

**ERR5155**

OHAS treatment not given because it is not a legal OHAS DN.

**ACTION:** Information only, no action required.

**ERR5156**

The input buffer for the CDR TTY is still loaded. There is not enough space for the number of characters to be output. The last character of the field may be lost.

**ACTION:** Information only, no action required.

**ERR5157**

BRI call in wrong state, call is cleared.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5158**

Invalid BRI call reference.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5159**

BRI B-channel status out of sync between Meridian 1 and the MISP; call attempt is aborted.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5160**

BRI calls exceeded the limit for the DSL.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5161**

BRI call cannot be connected because of incompatibility of the call type with the B-channel.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5162**

BRI call cannot be connected because a call register cannot be allocated.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5163**

BRI call processing message has timed out.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5164**

The BRI B-channel is in a maintenance busy state.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5165**

Message received from invalid loop.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5166**

Message received from wrong line card type.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5167**

Invalid message received from BRI line card.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

**ERR5168**

No output buffer available to send SSD message.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

## ERR5169

Message problem report from BRI line card.

**ACTION:** Refer to the *ISDN Basic Rate Interface*. Contact your technical support group.

## ERR5231

No outgoing ESDI packet allowed when the ESDI card is disabled.

Output: **AML: <aml number in decimal>**.

**ACTION:** Contact your technical support group.

## ERR5232

No incoming ESDI packet allowed when the ESDI card is disabled.

Output: **AML: <aml number in decimal>**.

**ACTION:** Information only, no action required.

## ERR5233

The MSDL AML port is disabled. Therefore the incoming AML message is disregarded. Output: **AML: <aml number in decimal>**.

**ACTION:** Re-enable the MSDL AML port in LD 48.

## ERR5234

The given AML (i.e., CLS) priority is disregarded.

Output

**AML: <aml number in decimal>**

**CODE: <msg\_priority in decimal>**

Receiving this message and Meridian Mail is not answering calls properly.

**ACTION:** Check for an I/O conflict with the ESDI/AML card setting and an existing I/O device. Check for a paddleboard sitting on the rear of the module, causing a hardware conflict. Contact your technical support group.

## ERR5235

The MSDLMISP\_HDLR handler failed the outgoing XDU MSDL AML request. Output:

**AML: <aml number in decimal> CODE: <msdlmisp\_hdlr failure code in decimal>**

**ACTION:** Contact your technical support group.



**ERR5236**

The MSDLMISP\_HDLR handler failed the outgoing DU MSDL AML request. Output:

**AML:** <aml number in decimal>

**CODE:** <msdlmisp\_hdlr failure code in decimal>

**ACTION:** Contact your technical support group.

**ERR5237**

The GET\_O\_BUF procedure failed to find a free outgoing buffer to send an outgoing AML MSDL packet. Output: AML: <aml number in decimal>.

**ACTION:** Contact your technical support group.

**ERR5241**

NIL pointer passed in as a parameter. Unable to update the TN block with the wake up information. Cannot proceed. Procedure WRT\_AWU\_TN.

**ACTION:** Contact your technical support group.

**ERR5242**

NIL pointer to the HM\_STRUCT which contains the wake up information. Cannot update and cannot proceed. Procedure WRT\_AWU\_TN.

**ACTION:** Contact your technical support group.

**ERR5243 tn**

Digit collect message received from RAN trunk unit.

**ACTION:** Check that the RAN equipment is operating according to the vendor's instructions. Use RAN in LD 36 to check the trunk and the RAN machine. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**ERR5244 type tn**

An invalid problem type has been received in a problem report message.

**ACTION:** Contact your technical support group.

## **ERR5245 type tn**

1. An invalid message type has been received from a card or unit.

**ACTION:** Check or replace the card following the steps in the *Hardware replacement* guide.

2. Receiving this message, without type tn, and INI000 8000 message on an Option 21E system running release 19.32 software.

**ACTION:** Verify that there is no I/O address mismatch with this card and other I/O cards. Check the fault page and address in the INI message and if they are hardware related, check for and replace a faulty MSPS (NTDD02) card following the steps in the *Hardware replacement* guide.

## **ERR5252**

The SDI I/F Handler could not retrieve a free buffer to send an outgoing message.

**ACTION:** Contact your technical support group.

## **ERR5254**

The SDI I/F Handler encountered a problem transmitting an expedited message.

**ACTION:** Contact your technical support group.

## **ERR5255**

The SDI I/F Handler encountered a problem transmitting a standard ring message.

**ACTION:** Contact your technical support group.

## **ERR5256**

The SDI I/F Handler received a data.indication primitive with a length of zero.

**ACTION:** Contact your technical support group.

## **ERR5257**

The SDI I/F Handler received a data indication primitive but could not store incoming characters because the TTY input buffer is full. Incoming characters were discarded.

**ACTION:** Contact your technical support group.

**ERR5258**

The SDI I/F Handler received a data indication primitive but could not store all incoming characters because the TTY input buffer became full. Some incoming characters were discarded.

**ACTION:** Contact your technical support group.

**ERR5259**

The SDI I/F Handler received an incoming message that had an unsupported primitive ID.

**ACTION:** Contact your technical support group.

**ERR5260**

The SDI I/F Handler received an incoming message that was not in the correct MSDL ring or expedited buffer.

**ACTION:** Contact your technical support group.

**ERR5261**

The SDI Port was disabled because the number of response timeouts on a output primitive has been exceeded.

**ACTION:** Contact your technical support group.

**ERR5262**

The SDI I/F Handler received a message from a port that is not enabled.

**ACTION:** Contact your technical support group.

**ERR5263**

The SDI I/F Handler received an incoming message that could not be processed in the current SDI state.

**ACTION:** Contact your technical support group.

**ERR5264**

The SDI I/F Handler received a data.indication message that had more characters than the maximum size of the TTY input buffer. The message is discarded.

**ACTION:** Information only, no action required.

**ERR5266**

The SDI I/F Handler received a maintenance primitive message with an invalid data length. The primitive message is discarded.

**ACTION:** Information only, no action required.

**ERR5267**

The SDI I/F Handler encountered a problem when trying to resynchronize flow-control variables with the MSDL I/F Handler.

**ACTION:** Contact your technical support group.

**ERR5272 tn**

An invalid maintenance message has been received from a card.

**ACTION:** Information only, no action required.

**ERR5275**

The DCH timed out while waiting for a test mode state change.

**ACTION:** Information only, no action required.

**ERR5276**

An SSD message to process the MSDL DCH output request queue is found to be lost.

**ACTION:** Information only, no action required.

**ERR5277**

An invalid DCH link state was found and corrected.

**ACTION:** Information only, no action required.

**ERR5278**

The DCH state was found to be disabled, while the DCH port was disabled.

**ACTION:** Re-enable the DCH card.

**ERR5279**

DCH application state was disabled, while the port on the MSDL card was enabled.

**ACTION:** Information only, no action required.

**ERR5279**

Wrong mandatory Information Element length.

**ACTION:** Information only, no action required.

**ERR5280**

Wrong Optional Information Element Length.

**ACTION:** Information only, no action required.

**ERR5281**

Pointer BG\_TFC\_TODAY\_PTR or BG\_TFC\_YESDY\_PTR is NIL because of the low memory problem or the memory corruption.

**ACTION:** Manually INIT the system to rebuild memory blocks. If the manual INIT command does not work, you must add more memory cards or remove data from the system.

**ERR5282 c dn r**

**Warning:** Undefined RAN route for night RAN.

Where,

**c** = customer number, **dn** = ACD DN, **r** = route number.

**ACTION:** Manually INIT the system to rebuild memory blocks. If the manual INIT command does not work, you must add more memory cards or remove data from the system.

**ERR5283**

No message sent to the ICP computer. Update the computer database manually.

**ACTION:** Manually INIT the system to rebuild memory blocks. If the manual INIT command does not work, you must add more memory cards or remove data from the system.

**ERR5285 c dn r**

**Warning:** Undefined RAN route for first RAN. Where, **c** = customer number, **dn** = ACD DN, **r** = route number.

**ACTION:** Define the RAN route and trunk in LD 16 and LD 14. Enter the route number at the FRRT prompt and the connection timer at the FRT prompt in LD 23 for the ACD DN.

**ERR5286 c dn r**

**Warning:** Undefined RAN route for second RAN.

Where,

**c** = customer number, **dn** = ACD DN, **r** = route number.

**ACTION:** Define the RAN route and trunk in LD 16 and LD 14. Enter the route number at the SRRT prompt and the connection timer at the SRT prompt in LD 23 for the ACD DN.

**ERR5287**

Invalid routing data encountered for Network Call Pickup/TAFAS. Digits do not indicate a valid DSC/TSC/AC1/AC2 route access code to route the Call Pickup request.

**ACTION:** Information only, no action required.

## **ERR5300**

DPNSS Route Optimization, invalid message received in Route Optimization supplementary service state. The message is ignored.

**ACTION:** Information only, no action required.

## **ERR5301**

The ATDN is not a CDN, but the call was routed to the ATDN anyway. Output data: TRK trktn ANI ani\_count ani\_digits

**ACTION:** Information only, no action required.

## **ERR5302**

M911 does not support test calls for the pilot release. (This does not apply to Release 19.) Output data: TRK trktn ANI ani\_count ani\_digits.

**ACTION:** Information only, no action required.

## **ERR5303**

ANI must be either one or eight digits in length. Call routed to default ACD DN as ANI failure. Output data: TRK trktn ANI ani\_count ani\_digits

**ACTION:** Contact your technical support group for assistance from the far-end.

## **ERR5304**

ANI digit is must be 1-10, where 10 is the digit 0. Call routed to default ACD DN as ANI failure. Output data: TRK trktn ANI ani\_count ani\_digits

**ACTION:** Contact your technical support group for assistance from the far-end.

## **ERR5305**

ANI was not received within 4 seconds. Call routed to default ACD DN as ANI failure. Output data: TRK trktn ANI ani\_count ani\_digits

**ACTION:** Contact your technical support group for assistance from the far-end.

## **ERR5306**

Digit dialed exceed maximum allowed. More than 10 digits received.

**ACTION:** Contact your technical support group for assistance from the far-end.

**ERR5307**

MFR holding timeout. Call routed to default ACD DN as ANI failure.  
Output data: TRK trktn ANI ani\_count ani\_digits

**ACTION:** Contact your technical support group for assistance from the far-end.

**ERR5308**

Could not allocate the M911 auxiliary call register. Call routed to default ACD DN as ANI failure. Output data: TRK trk tn ANI ani\_count ani\_digits

**ACTION:** Contact your technical support group.

**ERR5309 x y**

No music route for telephones defined for customer **x** using the FTC table **y** with XTT = YES.

**ACTION:** Information only, no action required.

**ERR5310 l s c u x**

No music route defined for the trunk at TN **l s c u** using the FTC table **x** with XTT = YES.

**ACTION:** Information only, no action required.

**ERR5313**

CP to CP Cable Loss. The CP to CP cable is either disconnected or faulty.

**ACTION:** Check the cables on the core module backplane at 14A and 14C for bent pins or improper connections. Replace the cables if necessary following the steps in the *Hardware replacement* guide.

**ERR5314**

The remote CMB has lost power.

**ACTION:** Contact your technical support group.

**ERR5315**

Cannot turn on memory protection. Input address is invalid.

**ACTION:** Contact your technical support group.

**ERR5316**

Cannot turn off memory protection. Input address is invalid.

**ACTION:** Contact your technical support group.

**ERR5317**

IPB parity threshold exceeded.

**ACTION:** Contact your technical support group.

**ERR5318**

IPB IRQ threshold exceeded. Interrupt has been disabled.

**ACTION:** Contact your technical support group.

**ERR5319**

IPB IRQ interrupt has been re-enabled.

**ACTION:** Contact your technical support group.

**ERR5320**

Error occurred initializing CP.

**ACTION:** Contact your technical support group.

**ERR5321**

Failure occurred opening IPB database.

**ACTION:** Contact your technical support group.

**ERR5322**

CP database I/O error.

**ACTION:** Contact your technical support group.

**ERR5323**

IPB database I/O error.

**ACTION:** Contact your technical support group.

**ERR5324 l s c u**

The message received (Barring, Busy Tone, Line Break, Polarity Change, Seize Acknowledge) is not supported by the class of service defined on the trunk unit. Trunk disabled. Mismatch between hardware and software data base. (Feature is XFCOT/XDID.)

**ACTION:** Use ENLU l s c u in LD 32 to re-enable the trunk, forcing a software download.

**ERR5325 l s c**

Undefined PPM ID on card l s c; PPM ID unchanged on card: hardware and software configurations no longer match. If PPM ID was invalid or undefined before, PPM has been disabled by card for all units on card.



**ACTION:** Refer to the *administration input/output guide*. Use LD 14 to reconfigure the PPM ID for the card.

#### ERR5326 I s c

Undefined Busy Tone Id on Card **I s c** ; Busy Tone ID unchanged on card: hardware and software configurations no longer match. If Busy Tone ID was invalid or undefined before, Tone supervision is not guaranteed to work for any unit on the card.

**ACTION:** Refer to the *administration input/output guide*. Use LD xx to reconfigure the Busy Tone ID for the card.

#### ERR5327 I s c u xxx xxx...xxx

Configuration Not Supported on trunk **I s c u**. Trunk is disabled. Configurations not supported are **xxx (xxx ... xxx)** where **xxx** is one of: **BUF PPM BTD BAR BAT DGC ATG**.

**ATG** = Autoguard (defined on unit: SEIZ)

**BAR** = Barring/Line Break Alarm (defined on unit Class of Service)

**BAT** = Battery Supervision (ARF BAT LBS) (defined on unit Class of Service).

**BTS** = Busy Tone Supervised: (defined on unit Class of Service)

**BUF** = PPM Buffered/Unbuffered: (defined on route)

**DGC** = DID Digit Collection Type (DIP/DTN/MFC) (defined on unit Class of Service and route)

**PPM** = PPM Enabled/Disabled: (defined on route)

**ACTION:** Examine the Route and Trunk Unit configuration and change the offending configuration.

#### ERR5328 I s c u

Dialing Speed downloaded is not supported on the unit. Dialing speed for the unit is not changed on the card. Hardware and software databases no longer match.

**ACTION:** Refer to the *administration input/output guide*. Use LD xx to change the dialing speed of the unit.

## **ERR5329 l s c**

Companding law downloaded is not supported on the card.  
Companding law on the card is not changed. Hardware and software databases no longer match. Do either of the following:

1. Change the companding law of the system.

**ACTION:** Refer to the *administration input/output guide*. Use LD xx to change the companding law of the system.

2. Change the card.

**ACTION:** Replace the card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **ERR5330 l s c u**

Configuration conflict was detected on trunk unit during an audit. The configuration as specified for the unit has been stored on the card.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 to check the trunk TN, or LD or 17 to check the trunk loop density.

## **ERR5331**

Seize failure on trunk to Conventional Main. CBQCM or RVQCM process was canceled.

**ACTION:** Contact your technical support group for assistance from the far-end.

## **ERR5332 msgtype tn**

Unknown content in message type received from superloop unit.

**ACTION:** Check the superloop card, and if the error continues replace the superloop card following the steps in the *Hardware replacement* guide.

## **ERR5333 content msgtype tn**

Unknown content in message type received from superloop unit.

**ACTION:** Check the superloop card, and if the error continues replace the superloop card following the steps in the *Hardware replacement* guide.

**ERR5334**

The SACP package is not equipped. Idle Extension Notification (IEN) or Attendant Blocking of DN (ABDN) request received from another location.

**ACTION:** Equip the SACP packages in all nodes. Contact your technical support group.

**ERR5335 x y**

Route **x** has a non-existent XTDT table defined **y** and therefore no XTD could be found.

**ACTION:** Refer to the *administration input/output guide*. Use LD 97 to print out the tables on the system. Use LD 20 to print out the information on the XTD cards. Use LD xx to reconfigure the route with the existing XTDT table.

**ERR5336**

GPT DTSL or NT5K75AA card configured in GPT mode. Status register not accessible. Writeio failed. Pd. DTS\_CLEAR\_LINT

**ACTION:** Replace the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

**ERR5337**

GPT DTSL or NT5K75AA card configured in GPT mode. Status register not accessible. Writeio failed. Pd. DTS\_READY

**ACTION:** Replace the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

**ERR5338**

GPT DTSL, NT5K75AA card. Data register not accessible. Write I/O failed. Pd. DTS\_SEND

**ACTION:** Replace the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

## ERR5339

GPT DTSL or NT5K75AA card configured in GPT mode. Status register not accessible. Write I/O failed. Pd. DTS\_END\_OF\_WRITE

**ACTION:** Replace the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

## ERR5340

GPT DTSL or NT5K75AA card configured in GPT mode. The timer has expired and the I bit is still raised in the status register.

Pd. DTS\_END\_OF\_WRITE

**ACTION:** Replace the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

## ERR5341

GPT DTSL, NT5K35AA card or NT5K75AA card. The software wanted to send a message to the card. The transmit FIFO on the card was busy and there was no more output buffer available. The value entered to DTOB in the ovl17 may be too small. This may also be a hardware fault. Pd. DTOB\_Q\_MSG

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 to check the DTOB prompt and LD 17 to increase the value. If this message reappears, replace the NT5K35AA card or the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

## ERR5342

NT5K35AA card or NT5K75AA in NT mode. DTS\_SEND failed in pd. SEND\_DPNSS\_MSG.

**ACTION:** Replace the NT5K35AA card or the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

## ERR5343

GPT DTSL or NT5K75AA card in GPT mode. DTS\_SEND failed in pd. DASS\_INPUT.

**ACTION:** Replace the NT5K75AA card, following the steps in the *Hardware replacement* guide. If the fault persists, contact your technical support group.

**ERR5344**

WRITE I/O failed. Pd. LED\_OFF.

**ACTION:** Contact your technical support group.

**ERR5345**

WRITE I/O failed. Pd. LED\_ON.

**ACTION:** Contact your technical support group.

**ERR5346**

Msg received from L2 but DTIB is full. The value entered to DTIB in the Ov117 may be too small. This may also be a hardware fault. Pd. DTS\_LONG\_MSG.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 to check the DTIB prompt and LD 17 to increase the value. If this message reappears, contact your technical support group.

**ERR5347**

DTS\_SEND failed in pd. WRITE\_SIG\_LINK.

**ACTION:** Contact your technical support group.

**ERR5348**

Some msg were still waiting in the DTOB when the DISABLE msg is sent to the card. DTOB has been cleared. Pd. DDSL\_DIS\_MSG

**ACTION:** Information only, no action required.

**ERR5349**

Some msg were still waiting in the DTOB when the ENABLE msg is sent to the card. DTOB has been cleared. Pd. REQ\_ENABLE.

**ACTION:** Information only, no action required.

**ERR5350**

The required FR is missing in the display IE received from SwissNet CO. The charging information is ignored.

**ACTION:** Information only, no action required.

**ERR5351**

A FACILITY message other than the expected campon activation message was received at the MCDN/DPNSS call offer Gateway.

**ACTION:** Information only, no action required.

## **ERR5352**

Could not allocate memory for Call ID table. No Call ID can be allocated. More memory may be required.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card following the steps in the *Hardware replacement* guide. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

## **ERR5355**

Request to get an expedited buffer by the MSDL DCH application failed.

**ACTION:** Contact your technical support group.

## **ERR5356**

Request to send a message through the MSDL expedited interface failed.

**ACTION:** Contact your technical support group.

## **ERR5357**

A flow control timer was found to be active for MSDL D channel. It has been reset.

**ACTION:** Information only, no action required.

## **ERR5358**

There must be an active flow control timer for the MSDL D channel. The flow control state has been reset.

**ACTION:** Information only, no action required.

## **ERR5359**

Under/Overflow condition in converting ICCL Tandem Count to/from IDA Loop Avoidance Count.

**ACTION:** Contact your technical support group.

## **ERR5360 tn**

Loss Plan conflict found on an IPE trunk during audit parameter download. The Loss Plan stored in the IPE trunk firmware for the unit has been reset to the Loss Plan specified in the audit message.

**ACTION:** Contact your technical support group.

**ERR5361**

Unable to allocate NPID table block in memory.

**ACTION:** Contact your technical support group.

**ERR5362**

Invalid format of the dialed (ADR) digits received over 911E trunk.

**ACTION:** Contact your technical support group.

**ERR5363**

Dialed (ADR) digits not received within specified time. 911 call treated as ANI failure.

**ACTION:** Information only, no action required.

**ERR5364**

NPID table does not exist for the 911 route.

**ACTION:** Refer to the *administration input/output guide*.

Use LD 21 RDB to check the table and use LD 16 RDB to check for the 911 route.

**ERR5365**

M911\_NPID\_MHPTR is Nil.

**ACTION:** Information only, no action required.

**ERR5367**

Wrong configuration for NAS Routing when the attendant is in Night Service. The following may indicate the problem:

1. NAS table is empty.

**ACTION:** Contact your technical support group.

2. Night DN cannot be defined as DSC.

**ACTION:** Contact your technical support group.

3. Night DN is not allowed to have any forward of any type (CFWAC, FBA, HTA, EHTA, HBTA)

**ACTION:** Contact your technical support group.

**ERR5368 n**

Italian CO special services: route associated to the ITXX FFC code is not configured anymore. **n** = is the route originally configured for ITXX.

**ACTION:** Contact your technical support group.

**ERR5369 l s c u i**

Invalid database configuration. Assigned authcode entered is not a valid authcode in OVL88.

**l** = loop

**s** = shelf

**c** = card

**u** = unit

**i** = index of the assigned authcode

**ACTION:** Check the database in LD 10 or LD 11.

**ERR5370 tn**

USCR being accessed, but customer SCPL is not defined.

**ACTION:** Information only, no action required.

**ERR5371 tn**

Set has CLS USRA but FFC package is not equipped.

**ACTION:** Information only, no action required.

**ERR5384**

The total number of messages in queue exceeds the predefined number defined in LD 17. The oldest message will be discarded in order to make room for more. The deleted messages will be displayed following this error message.

**ACTION:** Information only, no action required.

**ERR5385**

The message has been retransmitted for the specified number of times. This message will be discarded. This deleted message will be displayed following the error message.

**ACTION:** Contact your technical support group

**ERR5386**

Failed to allocate a CR for PMSI outgoing message.

**ACTION:** Contact your technical support group

**ERR5387 a b c d**

The PMSI outgoing message is exceed the maximum length.

The character will be ignored, where:

**a** = address of the CR contains the message



**b** = AUXPM, MAINPM

**c** = NAK counter, Timeout counter, retransmission flag

**d** = message length

**ACTION:** Contact your technical support group.

**ERR5388**

A digit other than 1 or 0 was entered for message monitoring option from a maintenance telephone.

**ACTION:** Information only, no action required.

**ERR5389**

A non-polling Call Register was found when auditing the PMSI Call Registers.

**ACTION:** Contact your technical support group.

**ERR5390**

Failed to allocate polling Call Register during initialization.

**ACTION:** Contact your technical support group.

**ERR5391**

The primary port is not configured. Therefore, the message monitoring commands cannot be executed from LD 37, or from a maintenance telephone.

**ACTION:** Contact your technical support group.

**ERR5396**

Call is dropped due to TSP database change.

**ACTION:** Contact your technical support group.

**ERR5397**

Service operation violated.

**ACTION:** Contact your technical support group.

**ERR5398**

One of the following has occurred.

The specified RAN route is not configured.

The specified route is not configured as a RAN route.

The RAN route is configured but no RAN member exists.

**ACTION:** Information only, no action required.

## **ERR5399**

Attendant Blocking of DN (ABDN) feature is not enabled.

**ACTION:** Information only, no action required.

## **ERR5400 x y x**

The PNI in the Route Data Block (LD 16), as noted by the dialed digits, is the same PNI number as currently programmed in the CDB (LD 15),

where:

**x** = customer number

**y** = customer PNI number

**z** = digits dialed (first 8 digits)

**ACTION:** Information only, no action required.

## **ERR5408**

NACD logical call request received that contained more than the supported number of DNIS digits. The DNIS information has been truncated to the supported length.

**ACTION:** Information only, no action required.

## **ERR5409 tn**

The OHOL unit assigned to the conference loop is not valid. The spare dealer conference loop was used.

**ACTION:** Information only, no action required.

## **ERR5410 tn**

The OHOL unit assigned to the conference loop is not available. The spare dealer conference loop was either non existing or not available.

**ACTION:** Information only, no action required.

## **ERR5411 tn**

The M2616 telephone with CLS DELA, but is not an OHOL unit has initiated a conference.

**ACTION:** Information only, no action required.

## **ERR5412**

Invalid Status Register state in Low Speed Link to Option 11 Mail.

**ACTION:** Contact your technical support group.

**ERR5413 tn**

No charging information available from CO for an outgoing call.

**ACTION:** Information only, no action required.

**ERR5414**

NIL AOC pointers found in protected trunk block.

**ACTION:** A possible solution is to switch the MR prompt in LD 16 to NO and then to switch it back to the current value (the TN of the trunk to follow).

**ERR5415 c**

For customer **c**, either the Authcode-last Retry RAN is defined with an invalid RAN route, or the route has no trunk member.

**ACTION:** Use LD 21 RDB to check the route information.  
Use LD 16 to correct the route information.

**ERR5416 c dn**

For customer **c**, DISA DN **dn**, an incoming call has been waiting too long (>RTMR) for DISA RAN. As a result, the caller is removed from the RAN queue and the call proceeds to the next processing step.

**ACTION:** Check the RAN hardware to see if the RAN trunks are capable of handling the traffic. An alternative to decreasing the frequency of message appearance is increasing the time defined for the RAN timer.

**ERR5417**

Message received from analog line card contains invalid message type. The message is ignored. Format:

**ERR5417 tttt mmmm**

Where:

**tttt** = the TN the message was sent to in internat format.

**mmmm** = the message contents

**ACTION:** This message can be ignored if test messages are being sent to the line card firmware. Otherwise contact your technical support group.

## ERR5418

Reverse Charging billing ID received in an AOC-D or AOC-E message from CO for an outgoing call.

This charging information is not taken into account. (TN of the trunk to follow).

**ACTION:** Information only, no action required.

## ERR5419

The currency information received from CO in AOC-D or AOC-E message overflows the storing area limit (4 294 967 295).

This charging information will no be taken into account.  
(TN of the trunk to follow)

**ACTION:** Information only, no action required.

## ERR5420

Overflow during computing of AOC information received from CO.

This charging information is not to be taken into account.  
(TN of the trunk to follow).

**ACTION:** Information only, no action required.

## ERR5421

Null time stamp found in AOC-S structure. Processing of the charging information not possible. (TN of the trunk to follow).

**ACTION:** Information only, no action required.

## ERR5422

The AOC-D or AOC-E charging information received from CO is smaller than the previous one. This information is discarded. (TN of the trunk to follow).

**ACTION:** Information only, no action required.

## ERR5423

No 500 set TN found to send Message Waiting Indication from.

**ACTION:** Refer to the *administration input/output guide*. Use LD 10 to define a pseudo-TN block with SMSA Class of Service, where y is the customer number.

**ERR5424**

Procedure DO\_XALC\_SETS/DO\_ANALOG\_SETS module LIN5  
Input received from Standalone Mail Message server. These sets  
should not exist outside of the configuration.

**ACTION:** Contact your technical support group.

**ERR5425**

Buffer to the PRI (QPC720) hardware has overflowed.

**ACTION:** If necessary, replace the PRI card following the steps in  
the *Hardware replacement* guide.

**ERR5427**

Failure on a D-ch used by VNS.

**ACTION:** Contact your technical support group.

**ERR5428**

Failure on a bearer trunk used by VNS.

**ACTION:** Contact your technical support group.

**ERR5429**

Unexpected event for the VNS state handler.

<WHATS\_HAPPENED><VNS\_STATEPN:UVNS\_DNPTR> and  
if VNS state not 0:<CUST><INDEX>.

**ACTION:** Contact your technical support group.

**ERR5430**

Unexpected message received on a D-ch used by VNS  
<message type>.

**ACTION:** Contact your technical support group.

**ERR5431**

Invalid message to send an a D-ch used by VNS <message type>

**ACTION:** Contact your technical support group.

**ERR5433**

FLH timer conflict found on the EXUT, XCOT cards during audit  
parameter download. The FLH timer stored on the card is different  
form that which is stored in the route for the unit. TN of the unit  
is given.

Force disconnect timer conflict found on the CIS incoming XDID card during audit parameter download. Unproductive timer conflict found on the CIS outgoing XDID card during audit parameter download.

**ACTION:** Refer to the *administration input/output guide*. Use LD 16 FLH to change the timer. Use DISC l s c and ENLC l s c to disable and then re-enable the card.

**ERR5434 tn**

A recall message is reported by the XFEM card to the software for an AC15 tie trunk but it is ignored because either the ACRL package is restricted or the TRRL feature is not configured properly. **tn** is the TN of the faulty trunk.

If the ACRL package is restricted

**ACTION:** Contact your technical support group to enable the ACRL package. Reload the system if necessary.

If the TRRL feature is supposed to be configured, make sure the data configuration is correct.

**ACTION:** Refer to the *administration input/output guide*. Use LD xx to check the TRRL feature Use LD xx to correct.

If the TRRL feature is not to be configured, check why the system at the far-end sends a recall signal.

**ACTION:** Contact your technical support group for assistance from the far-end.

**ERR5435 tn**

A recall message is reported by the XFEM card to the software for an AC15 tie trunk but it is ignored because the trunk is not in the "answered" state. **tn** is the TN of the faulty trunk.

**ACTION:** Contact your technical support group and with their help, check to find out why the system at the far-end is sending a recall signal when the trunk is in this state.

**ERR5436**

Number of Call Registers is too low to process DASS/DPNSS calls. This can be changed in the configuration record (Overlay 17, prompt NCR).

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 CFN to check the Call Registers. Use LD 17 NCR to increase the NCR.

**ERR5437**

Set is configured with DIG Member Number matching the SPRE first digit and one single DIG digit is expected. This should never happen unless wrong configuration manipulation. For instance, going from a two-digit table to a single-digit table without removing the single DIG Member Number matching the first SPRE code digit.

**ACTION:** Refer to the *administration input/output guide*. Use LD 20 TNB to check the DIG and LD 21 CDB to check the SPRE. Use LD 10, and LD 11 to correct the DIG, or LD 15 to correct the SPRE.

**ERR5439**

CPND/CLID message not sent to card from output buffer. Output buffer overflow on MCMO card. MCMO set buffer may not be large enough or is not being emptied. Impact: User will not Refer to all or part of CPND/CLID information.

**ACTION:** If the error messages are from the same TN, check the station or the MCMO card for defects.

Output Data: **ERRyy xx tn**, where:

**yy** = the error number.

**xx** = reference numbers for the message.

**tn** = terminal number (tn is in all decimals (1 s c u)).

**ERR5440 mm nn**

Auto Set Inst. default Model No. in LD 97 mismatches with model set defined in the data base, where:

**mm** = the default model type

**nn** = the default number.

**ACTION:** Information only, no action required.

**ERR5441**

Facility message error. Incorrect Facility message is sent to the user.

**ACTION:** Contact your technical support group.

## **ERR5442**

The Set Based Administration initialization routine could not allocate enough memory for the restriction control blocks. Login limits are set to zero.

**ACTION:** Contact your technical support group.

## **ERR5443 y**

BTd table associated with this trunk y has been removed using Overlay 97. Table 0 is used.

**ACTION:** Either recreate BTd table number as configured in trunk block or remove all trunks associated with this card and reconfigure them with BTDT to match an existing table.

## **ERR5444 l s c**

A mismatch between previously downloaded Busy Tone Phase 1 cadence value and audit message has occurred.

**ACTION:** Values on card are changed to reflect audit message. If problem continues, contact your technical support group.

## **ERR5445 l s c**

A mismatch between previously downloaded Busy Tone Phase 2 cadence value and audit message has occurred.

**ACTION:** Values on card are changed to reflect audit message. If problem continues, contact your technical support group.

## **ERR5446 l s c**

A mismatch between previously downloaded BTd call direction support value and audit message has occurred.

**ACTION:** Values on card are changed to reflect audit message. If problem continues, contact your technical support group.

## **ERR5447 l s c**

A mismatch between previously downloaded Busy Tone Detect Level value and audit message has occurred.

**ACTION:** Contact your technical support group.

## **ERR5448**

The EI Originating party has received a CCM for the connection of the EI conference, but this CCM does not contain any EI-I.

**ACTION:** Still accept the message.



**ERR5449**

The Wanted party has become free while involved in an EI process (waiting for the Unwanted's IPL or involved in an established EI conference), but it could not be re-rung for lack of resources or bad configuration.

**ACTION:** Send CRM (Congestion) on the Originating channel.

**ERR5468**

NFCR tree being used for Outgoing Call Barring does not exist. No calls are barred.

**ACTION:** Turn off OCB on the set indicated, or configure the required tree.

**ERR5469**

The number of digits used for LEC and ANI DN is more or less than 7 when trying to transmit ANI information to a CIS analogue/DTI trunk. The least significant digits of the ANI DN will be omitted or missing digits will be completed with ADDG.

**ACTION:** Check LEC prompt in LD 16 and ANI DN used.

**ERR5491**

Bad CPNW configuration. The Speed Call list specified in the CPNW data block of Overlay 18 is invalid.

**ACTION:** Contact your technical support group.

**ERR5492**

The PINX DN cannot be reached. Start at the first cause and follow that action. If this message reappears, go down the list one item at a time until the fault is cleared. If the fault does not clear, call your technical support group.

1. Either the configuration is invalid, or

**ACTION:** Program a valid configuration.

2. the D-channel is disabled, or

**ACTION:** Enable the D-channel.

3. The local PINX DN is not defined.

**ACTION:** Define the local PINX DN.

**ERR5493**

TCAP or ROSE protocol error for CPNW feature.

**ACTION:** Contact your technical support group.

## **ERR5511**

BTD Table 0 is not defined.

**ACTION:** Use Overlay 97 to create Busy Tone Detection Table 0.

## **ERR5512 n ERR020 blocking on**

More than 10 ERR020 messages received from loop **n** within 20 seconds. ERR020 messages for loop **n** has been automatically turned OFF. ERR020 will be automatically turned back ON in 20 seconds.

**ACTION:** Information only, no action required.

## **ERR5513 n ERR020 blocking off**

ERR020 messages for loop **n** has been automatically turned ON.

**ACTION:** If accompanied by an FWH 003 message, refer to the FHW chapter.

## **ERR5514**

Multiple appearances of a DN that is associated with a DTM key or with key 00 of a TN which has a DTM key is not permitted.

Output data: TN location DN for which an illegal multiple appearance has been found.

**ACTION:** Craftsperson must either deleted the multiple appearance, use another DN, or delete the DTM key.

## **ERR5515**

Applicable when MULT = YES

Configuration error. Regarding the value of the multiplier received from the CO, the value of RURC is not correct. the RURC value should not be great than the multiplier.

**ACTION:** Change RURC exponent value.

## **ERR5516**

The IDs configured on the NAS routing table must lead to a full DPNSS route, or full MCDN routes to routes including a single MCDN to DPNSS gateway.

**ACTION:** Reconfigure the NAS routing table.

## **ERR5517**

The IDs configured in the NAS routing tables must be UDP or CDP DNs.

**ACTION:** Reconfigure the NAS routing table.

**ERR5523**

Parsing of name informations received from QSIG failed.

**ACTION:** Inconsistent name information has been received. Contact your technical support group.

**ERR5524**

A network call park operation is tried from one node to another for which the Call Park Networkwide feature is not defined.

**ACTION:** Contact your system administrator if the Call Park Networkwide operation is not defined.

**ERR5526**

Illegal multiple appearance of a DN assigned to a designated data mode key.

**ACTION:** Contact your technical support group.

**ERR5532**

DNIS has more than 30 digits in the PCI message which is not supported by the MMail.

**ACTION:** Contact your technical support group.

**ERR5533**

SETUP message has been received on an Australian UIPE interface with the request for a permanent connection to be established. The ISPC Reference Number included in the message does not allow the link to be established for the following reason:

The format of the message is: ERR5533 -x -y where:

y - D-channel number

x - Detail of the problem

1. Unknown ISPC Reference Number. there is no TN on any Phantom DT12 loops configured with this ISPC Reference Number.

2. The ISPC Call Reference number is not delimited by a star '\*' character in Calling number field of the received SETUP message.

3. The ISPC Call Reference number is empty.

4. The ISPC Call Reference number is made of information other than the digits in the IA5 format.

5. The ISPC Call Reference number is longer than seven digits.

6. The TN for which the ISPC Reference number is configured is on a Phantom DT12 loop not on the same group as the PRI2 trunk on which the request was received.

**ACTION:** Check the system configuration. If the configuration is correct, contact the Administrative Entity of the Public Network.

**ERR5534**

The ISPC Call Reference number is empty in the Calling number field of the received SETUP message. This message is displayed when a SETUP message has been received on request for a permanent connection to be established.

**ACTION:** Contact the Administrative Entity of the Public Network.

**ERR5535 TN <cause>**

An improper configuration has been detected when an ISPC link is used to convey D-channel signaling.

The format of the message is ERR5535 TN <cause> where:

TN - ISPC D-channel slave trunk <cause> - represents the error cause:

- 0: SET\_DTI22\_PTRS failed with DT12 phantom trunk.
- 2: The trunk must be a TIE trunk.
- 3: The trunk must be configured with the DTN class of service.
- 4: Data corruption with the route pointer.
- 5: The route is not an ISL trunk.
- 6: The trunk is not a DID trunk.
- 7: The route is not configured with DSEL = DTA.
- 8: The route must not be an ISL route.
- 9: The route is not configured with DLTN = YES.
- 10: The route is not configured.
- 11: The route is not configured with PRDL = BSY.
- 12: The route is not configured with DTD = YES.
- 13: The route is not configured as outgoing.
- 14: The route is not configured with NEDC = ETH.
- 15: The route is not configured with FEDC = ETH.
- 16: The route is not configured with CPDC = NO.
- 17: DDD\_PACKAGE is restricted.

**ACTION:** Check the system configuration and use overlay 96 to restart the process if required.

**ERR5536**

The ISPC Call Reference number length is longer than 7 digits. This message is displayed when a SETUP message has been received on an Australian UIPE interface with the request for a permanent connection to be established.

**ACTION:** Contact the Administrative Entity of the Public Network.

**ERR5537 TN DN**

The maximum number of calls to be performed on a data interface for D-channel signalling to use an ISPD link has been reached. This manual process has been stopped. The format of the message is:

ERR5537 TN DN, where:

TN - ISPC D-channel slave trunk

DN - represents the digits received by the Meridian 1. If no digits have been received, nothing is printed. If some digits have been received, but the DN is incomplete or invalid, the digits will be printed.

**ACTION:** Check the system configuration and use overlay 96 to restart the process if required. Also, check the system configuration of the far end Meridian 1.

**ACTION:**

**ERR5538**

A SETUP message has been received on an Australian UIPE interface with the request for a permanent connection to be established. As the ISPC package (#313) is not enabled, the request has been requested.

**ACTION:** Enable Package ISPD (#313) and reload the PBX if an ISPC link is required.

**ERR5539 <type of error> <event/state> <parm1> <parm2> <parm3>**

Call Completion (CC) Supplementary Service. Protocol error detected by CC QSIG protocol handler.

**ACTION:** Contact your technical support group.

**ERR8985**

Invalid Group Hunt number encountered, Group Hunting terminated.

**ACTION:** Contact your technical support group.

## **ERR8986**

This TN should have CFW AC configured. Procedure icp\_storecfw and icp\_act\_allowed.

**ACTION:** Contact your technical support group.

## **ERR8987**

FFC cannot be used without SPRE defined.

**ACTION:** Refer to the *administration input/output guide*. Use LD 15 to define SPRE.

## **ERR8988**

Flexible Dial Tone Detection (FDTD) table not configured.

**ACTION:** Contact your technical support group.

## **ERR8999 x**

Attempt to use a nonexistent ART x. Default for route type is used.

**ACTION:** Contact your technical support group

## **ERR9000 C T A**

NAS routing is incorrectly configured. The routing tables should contain DNs to reach remote attendants on the network. the configuration error was noticed by the software while processing.

CUST c customer number

TEN t tenant number

ALT a alternative

The previous alternative route is probably badly defined, for example as a local DN.

**ACTION:** Redefine the previous alternative route.

## **ERR9006**

Invalid ESRT configuration. ACCD intercept treatment has been given to the set.

**ACTION:** Correct the database.

## **ERR9007**

Invalid OSDN configuration, caller information is not linked.

**ACTION:** Correct the database

**ERR9008**

Station set specified by OSDN is not configured with an OSN key.  
Caller information is not linked.

**ACTION:** Correct the database.

**ERR9009**

Undefined CLID entry is configured for the originating DN of an ESA call. Calling number is set to customer's DFCL.

**ACTION:** Correct the database.

**ERR9012**

ESA CLID configuration error detected. Calling number for ESA call is set to customer's DFCL.

**ACTION:** Correct the database.

**ERR9013 TN N data**

Parsing of QSIG Diversion Informations received failed, or QSIG Diversion informations sent have been answered unexpectedly.  
Incorrect QSIG Diversion informations are dropped.

Output parameters:

TN = TN from which information is received.

N = error number

data = dependant on error number (N)

**ACTION:** Report the problem along with the output parameters.

**ERR9016**

x NON PROVISION SERVICE y An incoming SETUP with NSF IE message is received from the NI-2 CBC master route and the service specified in the facility coding field cannot be found in service route associating with the master route. The call was terminated as public call.

Where:

x = Master route number y = NSF IE in Hex format

**ACTION:** Configure a service route.

**ERR9021**

Type 5A PAD messages were specified for an unknown trunk card type. The TN is printed.

**ACTION:** Contact your technical support group.

## ERR9022

Type 5B PAD messages were specified for an unknown trunk card type. The TN is printed.

**ACTION:** Contact your technical support group.

## ERR9023

Incorrect database configuration encountered. CNUS class of service conflicts with CNAA class of service.

**ACTION:** Correct the database configuration in LD10.

## ERR9027xxx DCH TN STATEPM

WARNING: Cannot use the B-channel or the ISL trunk because the STATEPM of the trunk is not idle. The B-channel or ISL trunk is put in a maintenance busy state.

**ACTION:** Manually restart the given B-channel or the ISL trunk. 

## ERR9034 x y z

Cannot send an ISRM containing a Message Waiting NSI string. There is no NORTEL message waiting NSI string configured in Overlay 15 (for Notification (NOTI) or Cancellation (CNC)).

**ACTION:** FORMAT\_MWI\_NSI. Module DIO.

## ERR9036 DO NOT PRINT

The TMDI output buffer is not allocated.

**ACTION:** Ensure that some unprotected memory is available, then use LD 17 and CHG CEQU (no real changes required, to rebuild the output buffer.)

## ERR9044

The ANI data should be retrieved from an ANI Entry but the specified Entry does not exist in the Customer Data Block.

**ACTION:** Action: Configure the ANI Entry that is needed (Overlay 15).

## ERR9048

AUDIT turned on Analog CLI.

**ACTION:** Contact your technical support group.



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## ERR — Error Monitor

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**ERR9049**

AUDIT turned off on Analog CLI.

**ACTION:** Contact your technical support group.

**ERR9050**

RAN/MIRAN channel is not available.

**ACTION:** Contact your technical support group.

**ERR9051**

The CAC conversion data must be retrieved from a CAC conversion entry but the specified entry does not exist in the Customer Data Block. The default table is used instead.

**ACTION:** Action: Configure the CAC conversion entry that is needed (Overlay 15).

**ERR9052**

VNS does not support Backup D-channel signalling.

**ACTION:** VNS call made using BDCH.

**ERR9056**

The XCT card is the only card supported by TWR1. The MFS card is not supported. The call cannot be completed

**ACTION:** Action: Contact your technical support group.

**ERR9057**

The length of FLEN in LD 86 and LD 90 is not configured. The call cannot be completed.

**ACTION:** Action: Contact your technical support group. The FLEN must be configured.

**ERR9058**

The supervision is not of the expected type.

**ACTION:** Contact your technical support group.

**ERR9059**

The data received for INS-J is more than 128 bytes.

**ACTION:** Contact your technical support group.

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## ERR — Error Monitor

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### ERR9060

An invalid parameter type has been received.

**ACTION:** Contact your technical support group.

### ERR9061

INS-J data was not expected.

**ACTION:** Contact your technical support group.

### ERR9062

No DID digits were received in the INS-J data.

**ACTION:** Contact your technical support group.

### ERR9063

An ACLI SSD message was unexpectedly received.

**ACTION:** Contact your technical support group.

### ERR9064

The father CR is nil for the ACLI son call register.

**ACTION:** Contact your technical support group.

### ERR9065

Parsing of QSIG Transfer information received failed.

**ACTION:** Action: Report the problem.

## ESDA — LD 48 Enhanced Serial Data

For messages and descriptions refer to the *maintenance input/output guide*. 

# ESDA

**598** LD 48 Enhanced Serial Data Interface

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## ESDI — LD 48 Enhanced Serial Data

For messages and descriptions refer to the *maintenance input/output guide*. 

# ESDI

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## ESN — Electronic Switched Network

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ESN Northern Telecom Publications for details. 

# ESN

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## FHW — Faulty Hardware

Faulty Hardware is a resident program. FHW does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

The M1 Initialization Prevention and Recovery feature prevents initializations from network loop, SDI device or Expanded SDI device faults. An FHW00x message on all maintenance TTYs indicates a loop or device fault. The faulty network loop, SDI or Expanded SDI remain enabled until one of the following occur:

- ◆ the faulty hardware is disabled by your maintenance commands
- ◆ the faulty hardware is disabled by background routines
- ◆ the faulty hardware is disabled by the FHWR function
- ◆ an initialization
- ◆ a sysload

### FHW messages

#### **FHW000 n loop response timeout**

Loop **n** is faulty as detected by the LRIP function. An INI000 8000 is prevented.

**ACTION:** Do the following immediately:

1. Load the appropriate maintenance overlay according to the data base configuration of loop **n**. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to check the loop type of **n**:

- ◆ Use LD 32 when the loop type is a Terminal loop, a Super Loop, a Remote Loop [*without* RPE2 package 165 equipped], or a Multipurpose ISDN Signal Processor Loop. Refer to the *Administration Guide*. Use LD 22 PRT, PKG to check for RPE2 package 165.
  - ◆ Use LD 34 when the loop type is a Tone/Digit Sender Loop.
  - ◆ Use LD 38 when the loop type is a Conference Loop.
  - ◆ Use LD 46 when the loop type is a Multifrequency Sender Loop.
  - ◆ Use LD 53 when the loop type is a Remote Loop *with* RPE2 package 165 equipped. Refer to the *Administration Guide*. Use LD 22 PRT, PKG to check for RPE2 package 165.
  - ◆ Use LD 60 when the loop type is a Digital Loop.
  - ◆ Use LD 75 when the loop type is either an Integrated Digital Access Loop or a Primary Rate Interface Loop.
2. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to print the status of loop **n** to ensure that it is marked faulty. Skip the remaining steps if loop **n** is not marked “faulty”.
  3. Enter the disable command for loop **n**.
  4. Enter the disable command for all other loops that are on the same hardware card as the faulty loop.
  5. Replace the hardware card, by following the steps in the *Hardware replacement* guide.
  6. Enter the enable command for all the loops that are on the newly installed hardware card.
  7. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to print the status of loop **n** to ensure that it is no longer marked faulty.
- If you are unable to perform steps 1 to 3, the FHW function will disable the faulty loop as a low priority task.

### **FHW001 n SDI device response timeout**

SDI device **n**, which is not defined as an Expanded D-channel, is faulty as detected by the SRIP function. An INI 8000 is prevented.

**ACTION:** Do the following immediately:

1. Load the appropriate maintenance overlay according to the data base configuration of SDI device **n**:

- ◆ Use LD 37 when the SDI device is either a Terminal Port or a Printer Port on a non-MSDL card.
  - ◆ Use LD 48 when the SDI device is an Application Module Link on a non-MSDL card.
  - ◆ Use LD 96 when the SDI device is on an MSDL card, or when either a Backup D-channel or a D-channel is on a non-MSDL card.
2. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to print the status of the SDI device **n** to ensure that it is marked faulty. Skip the remaining steps if the SDI device **n** is not marked faulty.
  3. Enter the disable command for the faulty SDI device.
  4. Enter the disable command for all other SDI devices that are on the same hardware card as the faulty SDI device.
  5. Replace the hardware card, by following the steps in the *Hardware replacement* guide.
  6. Enter the enable command for all the SDI devices that are on the newly installed hardware card.
  7. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to print the status of the SDI device **n** to ensure that it is no longer marked as faulty.

If you are unable to perform steps 1 to 3, the FHWR function will disable the faulty SDI device as a low priority task.

#### **FHW002 nexpaned SDI device responce timeout**

SDI device **n**, which is defined as an Expanded D-channel, is faulty as detected by the SRIP function. an INI 8000 is prevented.

**ACTION:** Do the following immediately:

1. Load LD 75.
2. Print the status of the SDI device **n** to ensure that it is marked faulty and has been disabled. Skip the remaining steps if the SDI device **n** is not marked faulty.
3. Enter the disable command for the faulty SDI device.
4. Enter the disable command for all other SDI devices that are on the same hardware card as the faulty SDI device.
5. Replace the hardware card, by following the steps in the *Hardware replacement* guide.
6. Enter the enable command for all the SDI devices that are on the newly installed hardware card.

7. Print the status of the SDI device **n** to ensure that it is no longer marked as faulty.

If you are unable to perform steps 1 to 3, the FHWR function will disable the faulty Expanded SDI device as a low priority task.

## **FHW003 n loop overload**

Loop **n** has been detected as faulty by LOIP function. INI000 0006 has been averted.

**ACTION:** Do the following immediately:

1. Load the appropriate maintenance Overlay according to the data base configuration of loop **n**. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to check the loop type of **n**:
2. Use LD 32 when the loop type is a Terminal loop, Super Loop, or a Remote Loop [without RPE2 package 165 equipped]. Refer to the *Administration Guide*. Use LD 22 PRT, PKG to check for RPE2 package 165.
3. Use LD 53 when the loop type is Remote Loop [with RPE2 package 165 equipped]. Refer to the *Administration Guide*. Use LD 22 PRT, PKG to check for RPE2 package 165.
4. Use LD 60 when the loop type is Digital Loop.
5. Use LD 75 when the loop type is either an Integrated Digital Access Loop or a Primary Rate Interface Loop
6. Print the status of loop **n** to ensure that it is marked “faulty”. Skip remaining steps if loop **n** is not marked “faulty”.
7. Enter the disable command for loop **n**.
8. Enter the disable command for all other loops that are on the same hardware card as the faulty loop
9. Replace the hardware card, following the steps in the *Hardware replacement* guide.
10. Enter the enable command for all the loops that are on the newly installed hardware card.
11. Print the status of loop **n** to ensure that it is no longer marked as faulty.

If you are unable to perform steps 1 to 3, the FHWR function will disable the faulty loop as a low priority task.

**FHW004 n network loop has been automatically disabled**

Loop **n** has been automatically disabled by the FHWR function.

**ACTION:** Do the following immediately:

1. Load the appropriate maintenance Overlay according to the data base configuration of loop **n**. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to check the loop type of **n**:

- ◆ Use LD 32 when the loop type is a Terminal loop, Super Loop, Remote Loop [*without* RPE2 package 165 equipped], or a Multipurpose ISDN Signal Processor Loop. Refer to the *Administration Guide*. Use LD 22 PRT, PKG to check for RPE2 package 165.
- ◆ Use LD 34 when the loop type is a Tone/Digit Sender Loop
- ◆ Use LD 38 when the loop type is a Conference Loop
- ◆ Use LD 46 when the loop type is a Multifrequency Sender Loop
- ◆ Use LD 53 when the loop type is a Remote Loop [*with* RPE2 package 165 equipped]. Refer to the *Administration Guide*. Use LD 22 PRT, PKG to check for RPE2 package 165.
- ◆ Use LD 60 when the loop type is a Digital Loop.
- ◆ Use LD 75 when the loop type is either an Integrated Digital Access Loop or a Primary Rate Interface Loop.

2. Enter the status command for loop **n** to ensure that it is marked “faulty” and has been disabled. Skip the remaining steps if loop **n** is not marked “faulty”.

3. Enter the disable command for all other loops that are on the same hardware card as the faulty loop.

4. Replace the hardware card, by following the steps in the *Hardware replacement* guide.

5. Enter the enable command for all the loops that are on the newly installed hardware card.

6. Print the status of loop **n** to ensure that it is no longer marked as faulty.

**FHW005 n SDI device has been automatically disabled**

SDI device **n**, which is not an Expanded D-channel, has been automatically disabled by the FHWR function.

**ACTION:** Do the following immediately:

1. Load the appropriate maintenance Overlay according to the data base configuration of SDI device **n**:
  - ◆ Use LD 37 when the SDI device is either a Terminal Port or a Printer Port, on a non-MSDL card.
  - ◆ Use LD 96 when the SDI device is on an MSDL card, or when either a Backup D-channel or a D-channel is on a non-MSDL card.
2. Enter the Status command for SDI device **n** to ensure that it is marked “faulty” and has been disabled. Skip the remaining steps if SDI device **n** is not marked “faulty”.
3. Enter the disable command for all other SDI devices that are on the same hardware card as the faulty SDI device.
4. Replace the hardware card, by following the steps in the *Hardware replacement* guide.
5. Enter the enable command for all the SDI devices that are on the newly installed hardware card.
6. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to print the status of SDI device **n** to ensure that it is no longer marked as faulty.

## **FHW006 n expanded SDI device has been automatically disabled**

SDI device **n**, which is an expanded D-channel, has been automatically disabled by the FHWR function.

**ACTION:** Do the following immediately:

1. Load LD 75.
2. Enter the status command for SDI device **n** to ensure that it is marked “faulty” and has been disabled. Skip the remaining steps if the SDI device **n** is not marked “faulty”.
3. Enter the disable command for all other SDI devices that are on the same hardware card as the faulty SDI device.
4. Replace the hardware card, by following the steps in the *Hardware replacement* guide.
5. Enter the enable command for all SDI devices that are on the newly installed hardware card.
6. Refer to the *Administration Guide*. Use LD 22 PRT, CFN to print the status of SDI device **n** to ensure that it is no longer marked as faulty. 

## HEX — Hexadecimal Display Codes

Hexadecimal displays on card faceplates indicate normal operation or faults.

A description and an action for the hexadecimal display codes follow the description of each card.

### How to find the hex codes

If you see a hexadecimal display code you want to investigate, do the following:

1. Note the card name.
2. Locate the card name in this guide's *Index of cards*.
3. Go to the page where the card is listed.
4. Locate the hex code in the *XXX faceplate hex codes* list that follows the Purpose, Function and Feature description of the card.
5. Read the hex code description and follow the action. 

# HEX

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## HWI – Hardware Infrastructure

### How the HWI works

Hardware Infrastructure Maintenance is a resident program. HWI does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

These messages indicate errors within the Hardware Infrastructure. These maintenance messages relate to:

- ◆ Changeover and Memory Block (CMB). CMB provides DRAM control and separate updating of memory or shadowing
- ◆ Switchover (SWO)
- ◆ Network Control Bus (NCB)
- ◆ Connectors (CON)

### HWI messages

#### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

#### **HWI001 HI Init: Cold Start to begin on side x.**

**ACTION:** Information only. If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**HWI002 HI Init: Warm Start to begin on side x.**

**ACTION:** Information only. If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**HWI003 HI: Graceful Switchover to start on side x.**

**ACTION:** Information only, no action required.

**HWI004 HI Init: Phase x (y) to start.**

**ACTION:** Information only, no action required.

**HWI005 HI Init: Cold Start to complete on side x, section y.**

**ACTION:** Information only, no action required.

**HWI006 HI Init: Warm Start to complete at side x in y seconds.**

**ACTION:** Information only, no action required.

**HWI007 HI Init: Switchover Start to complete at side x in y seconds.**

**ACTION:** Information only, no action required.

**HWI008 HI Init: created a data directory x.**

**ACTION:** Information only, no action required.

**HWI009 HI Init: saving data to directory x.**

**ACTION:** Information only, no action required.

**HWI010 HI Init: Forced Switchover to start on side x.**

**ACTION:** Information only, no action required. Core was forced into the maintenance mode.

**HWI101 CON x y: Connected to a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI102 CON x y: Disconnected from a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI103 CON x y: Connector device is unknown.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI104 CON x y: Disconnected device is unknown.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI105 CON x y: Connect event. Identification starts.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI106 CON x y: Connect event. Creating a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI107 CON x y: State transition from: a (input=b) to: c.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI108 CON x y: Created a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI109 CON x y: Simulating Disconnect-Connect for a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI110 CON x y: Deleted.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI111 CON x y: Connect event. Notifying a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI112 CON x y: Disconnect event. Notifying a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI113 CON x y: Specification of new device a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI114 CON x y: x destroyed. Affected objects: a, b.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI115 CON x y: x destroyed.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI116 CON x y: Successful probe of a.**

**ACTION:** Information only, no action required.

**HWI117 CON x y: Failed to probe a.**

**ACTION:** Check cables in the core module backplane for bent pins or improper connections. If this problem persists, contact your technical support group.

**HWI118 CON x y: Unconfigured %s connected to a.**

**ACTION:** Verify that the above hardware is in the database.

**HWI119 CON x y: Unknown device connected to a.**

**ACTION:** Check the ID for the device on the core shelf and check the 3PE switch settings.

**HWI201 NCB x y: Enabling 3PE to support: a.**

**ACTION:** Information only, no action required.

**HWI202 NCB x y: Failed to enable 3PE on group a.**

**ACTION:** Check that 3PE has correct DIP switch setting. Check both connector ends of CNI-3PE cable (if applicable). Check that 3PE enable/disable switch is enable (up).

**HWI203 NCBNCB x y: Disabling 3PE on Group a.**

**ACTION:** Information only, no action required.

**HWI204 NCB x y: Failed to disable 3PE on group a.**

**ACTION:** Check that the 3PE has the correct DIP switch setting. Check both connector ends of the CNI-3PE cable (if applicable). Check that the 3PE enable/disable switch is in the enable (up) position.

**HWI205 NCB x y: OOS testing 3PE.**

**ACTION:** Check both connector ends of the CNI-3PE cable for bent pins or improper connections. Use TEST CNI c s p in LD 135 to test the CNI. If you need help with the commands or system responses refer to the *CCED* chapter in this guide.

**HWI206 NCB x y: No response from 3PE on Group a.**

**ACTION:** Check that the CP Norm/Maint SW is in Maint (Down) for Single Mode. Check the CNI-3PE cable (if applicable). Check 3PE ENB/DIS switch is ENB (up) or check the 3PE DIP switch setting.

**HWI207 NCB x y: Unable to control 3PE state.**

**ACTION:** Check both connector ends of CNI-3PE cable for bent pins or improper connections. Use TEST CNI c s p in LD 135 to test the CNI. If you need help with the commands or system responses refer to the *CCED* chapter in this guide.

**HWI208 NCB x y: Failed OOS test.**

**ACTION:** Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to locate the faulty components. If you need help with the commands or system responses refer to the *CCED* chapter in this guide. Replace the faulty components by following the steps in the Hardware replacement guide. After replacing the component verify that the fault is cleared.

**HWI209 NCB x y: Cannot read 3PE state.**

**ACTION:** Check the cable connection between the 3PE and the CNI. Check that the 3PE faceplate switch is in the Enb position. Use DIS EXT x to disable the 3PE card, unseat and reseat the 3PE card,

use ENL EXT x to re-enable the 3PE. If you need help with the commands or system responses refer to the *CED* chapter in this guide. Use DSPS x to disable the PS card, unseat and reseal the PS card, use ENPS x to re-enable the PS card. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

**HWI210 NCB x y: Failed to service interrupt a. Number of ISR serviced: b.**

**ACTION:** Check the cable connection between the 3PE and the CNI. Check that the 3PE faceplate switch is in the Enb position. Use DIS EXT x to disable the 3PE card. Unseat and reseal the 3PE card. Use ENL EXT x to re-enable the 3PE. If you need help with the commands or system responses refer to the *CED* chapter. Use DSPS x to disable the PS card. Unseat and reseal the PS card. Use ENPS x to re-enable the PS card. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

**HWI211 NCB x y: Resuming service of interrupt a. Number of ISR Service Failures: b.**

**ACTION:** Check the cable connection between the 3PE and the CNI. Check that the 3PE faceplate switch is in the Enb position. Use DIS EXT x to disable the 3PE card, unseat and reseal the 3PE card, use ENL EXT x to re-enable the 3PE. If you need help with the commands or system responses refer to the *CED* chapter. Use DSPS x to disable the PS card, unseat and reseal the PS card, use ENPS x to re-enable the PS card. If you need help with the commands or system responses refer to the *IGS* or *NPR* chapter in this guide.

**HWI212 NCB x y: Masking interrupt a. Failed to detect source of this interrupt b times.**

**ACTION:** Use STAT CNI c s p in LD 135 to get an OOS to determine why the CNI is disabled. Refer to the CCED chapter in this guide to interpret the OOS messages and follow the OOS action to clear the fault. When you are finished, verify that the fault is cleared.

**HWI213 NCB x y: Unmasking interrupt a.**

**ACTION:** Information only, no action required.

**HWI214 NCB x y: Unmasking all interrupts.**

**ACTION:** Information only, no action required.

**HWI215 NCB x y: Failed to unmask interrupt a, (line b).**

**ACTION:** Contact your technical support group.

**HWI216 NCB x y: I/O interrupts from group x disabled.**

**ACTION:** Remove all unconfigured I/O cards from the above group. Reseat or replace the I/O cards, by following the steps in the Hardware replacement guide. Reseat or replace the corresponding CNI card, by following the steps in the Hardware replacement guide. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI217 NCB x y: a interrupts from group b disabled.**

**ACTION:** Reseat or replace the card(s) for the above group, by following the steps in the Hardware replacement guide. If you need help with the commands or system responses refer to the NPR or IGS chapter in this guide. Verify that the fault is cleared. If the fault is not cleared, reseat or replace the corresponding CNI card, following the steps in the Hardware replacement guide. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI218 NCB x y: CNI to 3PE connection mismatch.**

Expected: a to 3PE b c.

Detected: d to 3PE e f .

**ACTION:** Check that the 3PE has the correct DIP switch setting. Check both connector ends of the CNI-3PE cable (if applicable). Check that the 3PE enable/disable switch is in the enable (up) position.

**HWI219 NCB x y: Masking interrupt a failed to detect source of this interrupt b times.**

**ACTION:** Contact your technical support group.

**HWI301 CMB: CMB Cable (top cable) Faulty or Removed.**

**ACTION:** Check both connector ends of the CP cable, A14 and C14.

**HWI302 CMB: CMB remote power failed.**

**ACTION:** Check the CEPS on the other core shelf. Check both connector ends of the CP cable, A14 and C14.

**HWI303 CMB: CMB remote power restored.**

**ACTION:** Information only, no action required.

**HWI304 CMB: CMB Cable (top cable) installed.**

**ACTION:** Information only, no action required.

**HWI305 SIMM: Actual SIMM(s) found is less than configured in database.**

**ACTION:** Reseat the SIMMs on the CP card.

**HWI306 SIMM x y: Memory fault will impact real time capacity. (MTR : a)**

**ACTION:** Replace the CP card, by following the steps in the Hardware replacement guide. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI320 SIMM x y: From side a this SIMM appears without Base Address.**

**ACTION:** Suspect a faulty SIMM. Replace the CP card, by following the steps in the Hardware replacement guide. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI321 SIMM x y: From side a this SIMM appears without size attribute.**

**ACTION:** Suspect a faulty SIMM. Replace the CP card, by following the steps in the Hardware replacement guide. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI322 SIMM x y: From side a this SIMM appears with unknown size: b.**

**ACTION:** Suspect a faulty SIMM. Replace the CP card, by following the steps in the Hardware replacement guide. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI323 SIMM x: Total DRAM on side 0: a megabytes, side 1: b megabytes.**

Memory mismatch may affect switchover decision.

**ACTION:** Check the SIMMs on side c of the CP card.

**HWI324 SIMM x: Total equipped DRAM on CP a: b megabytes. Specified amount of DRAM: c megabytes**

**ACTION:** Check the SIMMs on side x. of the CP card.



**HWI325 SIMM x: SIMMs on CP side y: - a - a - a - a - a - a.**

**a = SIMM size.**

**ACTION:** Information only, no action required.

**HWI326 SIMM x: SIMMs on CP side a: not accessible.**

**ACTION:** Check both connector ends of the CP cable, A14 and C14. Check that both CP Norm/Maint switches are in the Norm Mode (Up).

**HWI401 SWO % x: Switchover denied, system is in maintenance mode.**

**ACTION:** Check that both CP Norm/Maint switches are in the Norm Mode (Up).

**HWI402 SWO x: Switchover denied, redundancy not available.**

**ACTION:** Check both connector ends of the CP cable, A14 and C14.

**HWI403 SWO x: Switchover attempt unsuccessful.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI404 SWO x: Switchover denied. Other side deemed not better.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI405 SWO x: Switchover denied, critical resource is locked.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI406 SWO x: Failure occurred attempting to suspend SL-1 task.**

**ACTION:** Contact your technical support group.

**HWI407 SWO x: Failure occurred attempting to resume SL-1 task.**

**ACTION:** Contact your technical support group.

**HWI408 SWO x: Attempted to switchover when memory not synchronized.**

**ACTION:** Perform MEM synchronization in LD 137 (SYNC).

**HWI409 SWO: Switch back to side x fail: Will un-suspend SL-1 on side y.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI0412**

SWO %s: Switchover requested, other side deemed better. (%d will be replaced with Core Shelf number).

**ACTION:** No action to be taken by craftsperson.

**HWI500 CMB: Remote ready de-asserted.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI501 CMB: Remote ready asserted.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI502 CMB: Remote power bit de-asserted.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI503 CMB: Secondary CMB not accessible.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI504 CMB: Cable time out.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI505 CMB: Pri par err: AD=a DA=b PSC=c LMTR=d RMTR=e.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI506 CMB: Sec par err: AD=a DA=b PSC=c LMTR=d RMTR=e.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI507 CMB: Write without unlock.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI525 CMB: Spurious interrupt.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI526 CMB: RSC = x (TASK LEVEL).**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. If errors continue and the cabling is not at fault, replace the CP card, by following the steps in the Hardware replacement guide.

**HWI527 CMB: RSC = x (INTERRUPT LEVEL).**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. If errors continue and the cabling is not at fault, replace the CP card, by following the steps in the Hardware replacement guide.

**HWI528 CMB: Standby CP asserts READY. Begin shadowing.**

**ACTION:** Information only, no action required.

**HWI529 CMB: Primary CP cannot access secondary CP.**

**ACTION:** Check both 14 A and 14C connector ends of the CP cables for bent pins or improper connections. Use TEST CNI c s p, TEST CPU and STAT MEM c in LD 135 to check the CNI and CP. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI530 CMB: System split via maint/norm switches.**

**ACTION:** Information only. Manual intervention.

**HWI531 CMB: MAINT/MAINT to MAINT/NORM does not shadow.**

**ACTION:** Use TEST CPU in LD 135 to check the CP. Replace the CP card, if applicable, by following the steps in the Hardware replacement guide. After replacing the card verify that the fault is cleared. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI532 CMB: Synchronization of memories failed.**

**ACTION:** Use TEST CPU in LD 135 to check the CP. Replace the CP card, if applicable, by following the steps in the Hardware replacement guide. After replacing the card verify that the fault is cleared. If you need help with the commands or system responses refer to the CCED chapter in this guide.

**HWI533 CMB: Synchronization of memories completed.**

**ACTION:** Information only, no action required.

**HWI534 CMB: Synchronization of memories begun: CP x master.**

**ACTION:** Information only. Be sure HWI533 is seen after this message before further system diagnostics is done.

**HWI535 CMB: Fatal error occurred on CP x. Processing will continue on CP y.**

**ACTION:** Use TEST CPU in LD 135 to check the CP. Replace the CP card, if applicable, by following the steps in the Hardware replacement guide. After replacing the card verify that the fault is cleared. If you need help with the commands or system responses refer to the CCED chapter in this guide. 



# ICU — LD 51 Intercept Computer Update

## How the ICU works

The following messages indicate command errors related to the ICU feature in LD 51.

| LD 51 commands |                                                                                                |         |
|----------------|------------------------------------------------------------------------------------------------|---------|
| Command        | Description                                                                                    | Release |
| Update         |                                                                                                |         |
| CUST ALL       | Update all customers.                                                                          | icp-5   |
| CUST c...c     | Update 1 to 5 customers (0-99). Repeat the command if more than 5 customers are to be updated. | icp-5   |
| END            | Terminate the program.                                                                         | icp-5   |
| UPD            | Update the transfer information.                                                               | icp-5   |

## ICU Messages

### ICU001

Invalid command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ICU002

Too many characters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ICU003

Invalid number of parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ICU004

Customer number does not exist.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ICU005

ICP, APL, ACD\_BAS, MW, SUPP, FTC, or FFC package missing.

**ACTION:** Contact your technical support group.

### ICU006

Invalid input.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ICU007

ICP does not exist for this customer.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ICU008

No customer to update.

**ACTION:** Information only, no action required. 



## IGS — LD 39 Intergroup Switch and

### In this chapter

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Before changing circuit cards, be aware of the procedures to follow as outlined in the section *Do this when replacing circuit cards*, in the *Hardware maintenance tools* chapter of this guide.

## How the IGS works

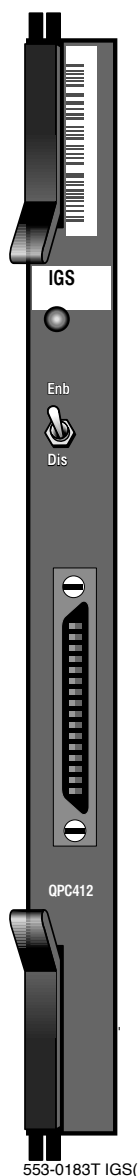
The Intergroup Switch (IGS) and System Clock Generator (SCG) or Clock Controller (CC) diagnostic is used to perform the following:

- ◆ determine the status of any Peripheral Signaling (PS), IGS, SCG, CC card
- ◆ disable and enable any PS, IGS, SCG or CC card
- ◆ switch the system clock from one SCG or CC to another
- ◆ clear minor alarm indications and the maintenance display on the active CPU

All SCG commands can be used for Clock Controllers, although LD 60 is normally used when DTI, CPI or PRI features are installed.

| Common commands          |                                                                    |         |
|--------------------------|--------------------------------------------------------------------|---------|
| Command                  | Description                                                        | Release |
| Clear alarms and display |                                                                    |         |
| CDSP                     | Clear the maintenance display on the active CPU.                   | basic-1 |
| CMIN ALL                 | Clear minor alarm indication on all attendant consoles.            | basic-1 |
| CMIN c                   | Clear minor alarm indication on attendant consoles for customer c. | basic-1 |

## IGS — Intergroup Switch



553-0183T IGS(

Intergroup Switch cards are used in multigroup systems such as Meridian SL-1 XT, Options 71, 81 and 81C.

### Purpose

There are four IGS cards associated with each group, composed of two cards, on each network shelf. Therefore the loss of one IGS card would only reduce intergroup traffic to that group by 25 percent.

All IGS cards are interconnected with one another through a Junctor Board.

### Function

The Intergroup Switch acts as a space switch, passing PCM from one group to another.

The master System Clock Generator distributes timing signals through the IGS to its network shelf peripheral signalling card.

### Features

The faceplate of the IGS card includes the following features:

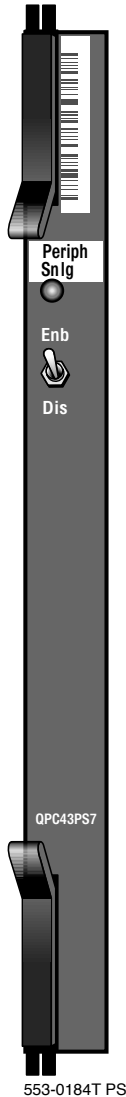
- ◆ an LED, when lit indicates a disabled card
- ◆ an ENB, DIS switch to hardware enable or disable the card
- ◆ a connector used to interconnect the IGS and Junctor Board

## How to locate Intergroup Switch cards

| Group | Shelf or module | Card slot | IGS card |
|-------|-----------------|-----------|----------|
| 0     | 0               | 12        | 0        |
| 0     | 0               | 13        | 2        |
| 0     | 1               | 2         | 3        |
| 0     | 1               | 3         | 1        |
| 1     | 0               | 12        | 4        |
| 1     | 0               | 13        | 6        |
| 1     | 1               | 2         | 7        |
| 1     | 1               | 3         | 5        |
| 2     | 0               | 12        | 8        |
| 2     | 0               | 13        | 10       |
| 2     | 1               | 2         | 11       |
| 2     | 1               | 3         | 9        |
| 3     | 0               | 12        | 12       |
| 3     | 0               | 13        | 14       |
| 3     | 1               | 2         | 15       |
| 3     | 1               | 3         | 13       |
| 4     | 0               | 12        | 16       |
| 4     | 0               | 13        | 18       |
| 4     | 1               | 2         | 19       |
| 4     | 1               | 3         | 17       |

| IGS commands        |                                                                                                                                                                                                                                                                 |         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command             | Description                                                                                                                                                                                                                                                     | Release |
| Check status of IGS |                                                                                                                                                                                                                                                                 |         |
| <b>STAT IGS x</b>   | Get status of IGS card x (0 to 19).<br><br>The response <b>x DSBL x BUSY</b> indicates the number of junctor timeslots disabled or busy associated with the specified IGS card.                                                                                 | basic-1 |
| Disable an IGS      |                                                                                                                                                                                                                                                                 |         |
| <b>DIS IGS x</b>    | Disables IGS card x (0 to 19).                                                                                                                                                                                                                                  | basic-1 |
| <b>DISI IGS x</b>   | Disables IGS card x (0 to 19) when all timeslots are idle.<br><br>Use of this command is recommended instead of DIS IGS, which interrupts calls in progress. The command's progress completion is indicated by an output of ISR043 on the maintenance terminal. | basic-1 |
| Enable an IGS       |                                                                                                                                                                                                                                                                 |         |
| <b>ENL IGS x</b>    | Enables IGS card x (0 to 19).                                                                                                                                                                                                                                   | basic-1 |
| Stop test           |                                                                                                                                                                                                                                                                 |         |
| <b>END</b>          | Stop current operation or test.                                                                                                                                                                                                                                 | basic-1 |

## PS/Periph Snlg — Peripheral Signaling



The CPU communicates with the terminal equipment through the Peripheral Signaling card. One Peripheral Signaling card is required per network shelf, each controlling up to 16 loops in a 32 loop group. The peripheral signaling circuitry is combined with other circuitry on some single group systems.

### Purpose

The Peripheral Signaling card has two functions:

- ◆ to provide a signaling interface between the parallel CPU bus and the serial bit stream required by the PE equipment
- ◆ to generate and distribute timing signals for synchronous PCM transmission throughout the system

### Function

**Signaling** — A change of state, for example Off-Hook or Dialing, on a PE card generates a 16 bit MESSIN, setting a flag. During Time Slot (TS) Ø the network loop scans each of its terminals for flags and enables the flagged terminal during subsequent TS Øs. The PS enables each network loop in turn during TS Ø and when it detects a MESSIN, locks on and receives the 16 bits. It takes 29 successive TS Øs to gather the MESSIN and generate an interrupt. The CPU recovers the 16 bits by reading the MESSIN Register, of the PS card and this action allows the PS and network card to resume scanning.

When the CPU writes into the PS MESSOUT Register, the PS card serially shifts the 16 bit MESSOUT out through the network loop to the PE card.

**Timing** — A 16.384 MHz oscillator on the PS card is divided down to obtain the 2.048 MHz clock and 4 kHz for CODEC sync. In a single group enhanced SL-1, the PS card associated with the active CPU is the master clock source. In multigroup systems, each PS card obtains its master clock from the System Clock Generator through the Intergroup Switch card.

### Features

The faceplate includes the following features:

- ◆ a LED, when lit indicating a disabled card
- ◆ an ENB, DIS switch to hardware enable or disable the card

### Group, Loop and Peripheral Signaling card relationship

| Group | Shelf | PS | Loops   |
|-------|-------|----|---------|
| 0     | 0     | 0  | 0-15    |
| 0     | 1     | 1  | 16-31   |
| 1     | 0     | 2  | 32-47   |
| 1     | 1     | 3  | 48-63   |
| 2     | 0     | 4  | 64-79   |
| 2     | 1     | 5  | 80-95   |
| 3     | 0     | 6  | 96-111  |
| 3     | 1     | 7  | 112-127 |
| 4     | 0     | 8  | 128-143 |
| 4     | 1     | 9  | 144-159 |

**PS card commands**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Check status of PS**

|                   |                                   |         |
|-------------------|-----------------------------------|---------|
| <b>STAT PER x</b> | Get status of PS card x (0 to 9). | basic-1 |
|-------------------|-----------------------------------|---------|

Possible responses:

**DSBL: NOT RESPONDING** = Peripheral Signaling card is disabled and not responding. The PS is either missing, disabled via its faceplate switch or faulty.

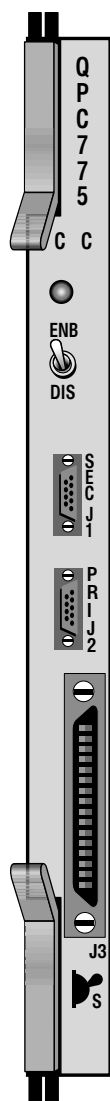
**Note:** If there is a fault in the extender pair for the network shelf, the status of the PS card will also be DSBL: NOT RESPONDING.

**DSBL: RESPONDING** = The PS card is disabled and responding to the CPU. The PS may have been disabled by manual request (DSPS) or the associated extender pair may have been manually disabled. If neither of these conditions exist, the card may have been disabled because of an overload condition on the associated loop.

Check for OVD messages appearing in previous TTY output. An attempt to enable a PS card which was disabled because of an overload may result in a recurrence of the overload condition: the system's service may be impaired for approximately 2 minutes.



## CC/SCG — System Clock



553-0185T CC(ISSC)

The System Clock Generator (SCG) and Clock Controller (CC) cards are used in multigroup systems which can contain up to five groups. There are two redundant clock cards and either one can be made active regardless of which CPU is active. In addition, Clock Controller cards synchronize the Meridian 1 network to an external source clock for PRI and DTI functions. These PRI and DTI functions are further described in the ISDN Basic Rate Interface NTP.

### Purpose

There can be up to five separate network buses in a multigroup system. The SCG and CC is required to synchronize the flow of the PCM from one group to another by doing the following:

- ◆ generating master timing for all multiplex network loops
- ◆ providing synchronization for all CODECs
- ◆ monitoring the other SCG and CC cards for failure and switching over when necessary or when requested by the CPU

### Function

The active SCG CC provides the following through junctors:

- ◆ eight mHz clock, through the IGS, to each Peripheral Signaling card for timing
- ◆ four kHz synchronization for each CODEC
- ◆ both SCGs CCs send status to one another, thereby keeping only one SCG CC active
- ◆ each SCG CC sense clock on its twin to detect failure

| SCG commands        |                                 |         |
|---------------------|---------------------------------|---------|
| Command             | Description                     | Release |
| Check status of SCG |                                 |         |
| STAT SCG x          | Get status of SCG x (0 or 1).   | basic-1 |
| Disable a SCG       |                                 |         |
| DIS SCG x           | Disable SCG card x (0 or 1).    | basic-1 |
| Enable SCG          |                                 |         |
| ENL SCG             | Enable SCG x (0 or 1).          | basic-1 |
| Switch SCGs         |                                 |         |
| SCLK                | Switch clock to other SCG.      | basic-1 |
| Stop test           |                                 |         |
| END                 | Stop current operation or test. | basic-1 |

## IGS clock synchronization messages

The following messages indicate command errors related to the clock synchronization hardware.

### **IGS501 c**

Requested clock **c** card failed to respond.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP*.

### **IGS502 c**

Requested clock **c** card failed self-test.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP*.

### **IGS503 c s loop**

Phase locked on primary source **loop**, DTI shelf **s**, and the Clock Controller **c** is active.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP*.

### **IGS504 c s loop**

Phase locked on secondary source **loop**, DTI shelf **s**, and the Clock Controller **c** is active.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP*.

### **IGS505 c s loop**

Unable to track on primary source **loop**, DTI shelf **s** and the Clock Controller **c** is active.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP*.

### **IGS506 c s loop**

Unable to track on secondary source **loop**, DTI shelf **s**, and the Clock Controller **c** is active. Free running.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP*.

## ISR messages

The Intergroup Switch (IGS) and System Clock Generator (SCG) diagnostic (LD 39) applies to the Meridian SL-1 XN equipped with Generics X08 and X11. The program is used to maintain Peripheral Signaling (PS), IGS or System Clock Generator SCG cards.

### ISR000

Program identifier.

**ACTION:** The IGS program is loaded and ready for you to enter commands.

### ISR001

Illegal character in command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ISR002

Wrong number of input parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ISR003

Illegal command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### ISR004

Group out of range.

**ACTION:** Check to make sure your data is correct and re-enter the command. Groups are numbered from 0 to 4.

### ISR010

Command ignored as an active input device would be disabled.

**ACTION:** Obtain the status of the device. If applicable, switch so that the device you want is not active.

**ISR015 loop**

Loop specified does not respond. During ENPS command, an attempt is made to re-enable all loops associated with peripheral signaling card.

**ACTION:** Check and replace the Segmented Bus Extender card, the 3 Port Extender card or the cable between the two extender cards on the CPU and the network shelf of the loop associated with the peripheral signaling card. When replacing cards or cables use the steps in the *Hardware replacement* guide. After replacing each card, see if this message reappears. If it reappear replace another card. If you need help with the commands or system responses refer to the *CED* chapter in the guide.

**ISR018**

Only one DISI IGS allowed at a time.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**ISR020**

Specified Peripheral Signaling card out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command. Peripheral Signaling cards are numbered from 0 to 9.

**ISR021**

Specified Peripheral Signaling card does not respond.

**ACTION:** Check and replace the Segmented Bus Extender card or the 3 Port Extender card or the cable between the two extender cards on the CPU and the network shelf of the loop associated with the Peripheral Signaling card. When replacing cards or cables use the steps in the *Hardware replacement* guide. After replacing each card, see if this message reappears. If it reappears replace another card. If you need help with the commands or system responses refer to the *CED* chapter in the guide.

**ISR022**

Specified Peripheral Signaling card already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

## ISR025

Cannot determine which CPU is active.

**ACTION:** Use STAT CPU in LD 35 to determine which CPU is active. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

## ISR026 p

A peripheral signaling interrupt fault is present. p identifies the faulty card.

**ACTION:** Replace the Peripheral Signaling card and verify that the fault is clear.

## ISR027

A fault in the outgoing signaling circuitry has been detected on the Peripheral Signaling card being examined.

**ACTION:** Replace the PS card as following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is clear.

## ISR029

Customer does not exist.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## ISR033

System clock must be switched before proceeding.

**ACTION:** Use the SCLK command to switch the clocks. Refer to the *ISDN Basic Rate Interface NTP*.

## ISR040

Intergroup switch out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command. Intergroup switch cards are numbered from 0 to 19. Refer to the section *How to locate Intergroup Switch cards*, in the chapter.

## ISR041

Intergroup switch specified is not responding.

**ACTION:** Replace the IGS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared. If the fault does not that clear, check and replace the Segmented Bus Extender card or the 3 Port Extender card or the cable

between the two extender cards on the CPU and the network shelf of the loop associated with the peripheral signaling card. When replacing cards or cables use the steps in the *Hardware replacement* guide. After replacing each card, see if this message reappears. If it does reappear replace another card. If you need help with the commands or system responses go to the *CED* chapter in the guide.

**ISR042**

Intergroup switch is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

**ISR043**

DISI IGS command completed.

**ACTION:** Information only, no action required.

**ISR050**

System clock generator specified is out-of-range.

**ACTION:** Refer to the *maintenance input/output guide*, *LD 60 Clock Controller Commands* and the *PRI Maintenance Guide*. Check to make sure your data is correct and re-enter the command. Clock cards are numbered from 0 and 1.

**ISR051**

SCG specified is not responding.

**ACTION:** Refer to the *maintenance input/output guide*, *LD 60 Clock Controller Commands* and the *PRI Maintenance Guide*.

**ISR052**

SCG specified is already enabled.

**ACTION:** Refer to the *maintenance input/output guide*, *LD 60 Clock Controller Commands* and the *PRI Maintenance Guide*. Ensure that this is the command you wanted to use.

**ISR054**

Idle CPU must be switched in to replace the present clock.

**ACTION:** Refer to the *maintenance input/output guide*, *LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*. Use SCPU in LD 35 to switch the CPU. If you need help with the commands or system responses go to the *CED* chapter in this guide.

**ISR060 n**

SCG **n** cannot be switched in to replace the present clock.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*. Replace the clock card and verify that the fault is clear.

**ISR061 n**

SCG **n** cannot be switched in because loss of service will result to the Peripheral Signaling cards specified. List is composed of the numbers of the specified Peripheral Signaling cards affected.

**ACTION:** Contact your technical support group. Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands* and the *PRI Maintenance Guide*.

**ISR062 n**

Software and hardware status of SCG **n** do not match

**ACTION:** Contact your technical support group. Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands* and the *PRI Maintenance Guide*.

**ISR070**

Specified equipment could not be enabled because of the CPU bus extender to the network shelf is disabled.

**ACTION:** Check and replace the Segmented Bus Extender card or the 3 Port Extender card or the cable between the two extender cards on the CPU and the network shelf. When replacing cards or cables use the steps in the *Hardware replacement* guide. After replacing each card, see if this message reappears. If it reappears replace another card. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**ISR071**

Supposed to free run, but H/W is tracking on primary.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR072**

Supposed to free run, but H/W is tracking on secondary.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.



**ISR073**

Supposed to track on primary, but H/W is tracking on secondary.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR074**

Supposed to track on primary, but H/W is free run.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR075**

Supposed to track on secondary, but H/W is free run.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR076**

Supposed to track on secondary, but H/W is free run.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR077**

Tracking rejected. Primary reference is not specified.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR078**

Tracking rejected. Secondary reference is not specified.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR079 loop**

Loop is disabled. Command performed no action.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR080**

NT, 61, and 61E systems cannot use LD 39.

**ACTION:** Refer to the *maintenance input/output guide, LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR100**

An invalid error message was received from the clock controller.

**ACTION:** Contact your technical support group. Refer to the *maintenance input/output guide*, *LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR101**

Superloop on the specified PS card.

**ACTION:** Use LD 32 ENPS/DSPS commands.

**ISR102**

Loop is a Digital trunk Interface or Primary Rate Interface.

**ACTION:** Refer to the input/output guide, *LD 60 Clock Controller Commands*, and the *PRI Maintenance Guide*.

**ISR104**

BRSC<->PRI B-ch connection is using the IGS being disabled.  
Cannot complete DISI command.

**ACTION:** Use the DIS IGS command or disconnect the nail-up by disabling the BRSC in LD 32 first.

**ISR105**

A TCON connection is using the IGS being disabled. Cannot complete DISI command.

**ACTION:** Use the DIS IGS command or disconnect the TCON first.

## MSR messages

### MSR Messages

The Multigroup Switch Replacement Diagnostic (LD 39) applies to multigroup systems equipped with Generic X37. The Multigroup Switch Diagnostic provides a means of:

- ◆ determining the status of any Peripheral Signaling (PS), Multigroup Switch (MGS), Multigroup Extender (MGE) or Multigroup Control (MGC) card
- ◆ disabling and enabling any PS, MGS, MGE or MGC card
- ◆ switching the system clock from one MGC to another

### MSR Messages

#### MMSR000 to MSR070

These messages pertain to the SL-1 VL, VLE, XL and the QCA97 XN used with Generic X37 software.

**ACTION:** See the NTPs specific to this equipment. 



# INI — System Initialization

## In this chapter

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| Example of a Clean INI Message . . . . .                                    | 648 |
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## How the INI works

The Initialization program (INI) is a resident program used to build the unprotected data blocks in Meridian 1 software. An occurrence of an initialization is indicated by INI messages.

### Causes of initialization

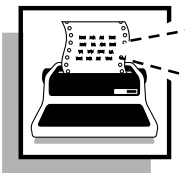
The Initialization program is run when the following conditions occur:

- ◆ after a SYSLOAD is complete
- ◆ when the manual initialize button is pressed on the Miscellaneous (MISC), Interface (IF) or Call Processor (CP) card of the active CPU
- ◆ when a software or firmware fault is detected
- ◆ when a hardware fault in CE equipment is detected

For more information refer to: *You should know this* chapter, *Software tools*, *System reaction when things don't go right*.

### Example of a Clean INI Message

When an INI is invoked on a system without faults, a clean INI message is output. The following is an example of a clean INI message:



```
INI000 000002 10 09 38 000000 07A188 00000A  
007C99 0 1 000000
```

- ◆ **INI000** = Output Code. The output code INI000 always appears as shown in the above example
- ◆ **000002** = Fault Code. Identifying the cause of the initialization\*
- ◆ **10** = Hour of initialization
- ◆ **09** = Minute of initialization
- ◆ **38** = Second of initialization

- ◆ **000000** = Program page. At the time of trap, in hexadecimal\*
- ◆ **07A188** = Program counter. In hexadecimal.\*
- ◆ **00000A** = Fault page. In hexadecimal. Hardware faults are indicated when this field displays 000003 (page 3).\*
- ◆ **007C99** = Fault address. Valid for a hardware fault if the fault page is 3 and only one fault is detected.\*
- ◆ **0** = Active CPU or FN. If it is not known, a question mark (?) is output. This field only occurs for dual CPU systems and is not included in INI message from single CPU systems.
- ◆ **1** = Active clock controller. For multi-group systems only and is not included in INI message from single group systems.
- ◆ **000000** = Hex contents of the maintenance display prior to the initialization.\*

\* The number of digits in these fields may vary from the above example. However the position of the field within the message and the meaning does not change.

### Example of an INI Message indicating typical I/O Device faults.



```
INI000 002000 10 09 38 000000 07A188
00000A 000DC0 0 1 000000
INI002 12/08/96 10:35:52129013
OPRDATA: 000000080 00000001
```

- ◆ **INI002** = the output code indicating an I/O fault.
- ◆ **OPRDATA** = a 30-character field to help determine how to clear fault
- ◆ **000080** = the hex code field indicating that SDI port 0 is faulty.
- ◆ **00008A** = the hex code field indicating that SDI port 10 is faulty.

In this example, the maintenance hexadecimal faceplate display of the MISC or IF or CP card will show **8A** or **08A**. The maintenance hexadecimal faceplate display can only indicate one code, that is the last hex code.



## How to decode INI messages

To help you decode INI messages the following three sections are provided.

- ◆ output codes
- ◆ fault codes
- ◆ fault address codes



Most important to the technician is that the Output Codes section identifies faulty cards and, in most cases, where they are located in the various shelves of the equipment.

The Fault Codes section identifies the cause of the INI and supplies supporting information to the Output Codes section.

The Fault Address Codes section is used in rare cases when there are no output codes.

### Output codes

#### INI000 **fc h m s pp pc fc fp fa (a cpu) (a c c) hex**

An initialization has taken place. Up to 12 additional fields are associated with this message output. For an explanation of these fields see *Example of INI messages* in this chapter.

**ACTION:** Examine the associated fields and any subsequent INI output codes for fault indicators.

#### INI002 **hex**

An I/O device fault is indicated. The faceplate **hex** display or this message **hex** code identifies the faulty device requiring replacement.

**ACTION:** Follow the steps in the *Hardware replacement* guide and replace the I/O card indicated by the hex code. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *IOD* chapter. The following table of INI002 hex codes identify the I/O cards:

| INI002 Hex code | For card type     | Addressed as |
|-----------------|-------------------|--------------|
| 70              | MSI               | device 0     |
| 71              | MSI               | device 1     |
| 80              | SDI, ESDI or MSDL | port 0       |
| 81              | SDI, ESDI or MSDL | port 1       |
| 82              | SDI, ESDI or MSDL | port 2       |
| 83              | SDI, ESDI or MSDL | port 3       |
| 84              | SDI, ESDI or MSDL | port 4       |
| 85              | SDI, ESDI or MSDL | port 5       |
| 86              | SDI, ESDI or MSDL | port 6       |
| 87              | SDI, ESDI or MSDL | port 7       |
| 88              | SDI, ESDI or MSDL | port 8       |
| 89              | SDI, ESDI or MSDL | port 9       |
| 8A              | SDI, ESDI or MSDL | port 10      |
| 8B              | SDI, ESDI or MSDL | port 11      |
| 8C              | SDI, ESDI or MSDL | port 12      |
| 8D              | SDI, ESDI or MSDL | port 13      |
| 8E              | SDI, ESDI or MSDL | port 14      |
| 8F              | SDI, ESDI or MSDL | port 15      |

**INI003 hex**

Network or Peripheral Signaling card fault.

**1.** The faceplate **hex** display or this message **hex** code shows one or more of the following for Peripheral Signaling card faults.

**ACTION:** Follow the steps in the *Hardware replacement* guide and replace the Peripheral Signaling card indicated by the hex code. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *NPR* or *IGS* chapter. The following table of INI003 hex codes identify the Peripheral Signaling cards.

| INI003 Hex code | For card type        | Addressed as |
|-----------------|----------------------|--------------|
| 40              | Peripheral Signaling | card 0       |
| 41              | Peripheral Signaling | card 1       |
| 42              | Peripheral Signaling | card 2       |
| 43              | Peripheral Signaling | card 3       |
| 44              | Peripheral Signaling | card 4       |
| 45              | Peripheral Signaling | card 5       |
| — continued —   |                      |              |

| INI003 Hex code | For card type        | Addressed as |
|-----------------|----------------------|--------------|
| 46              | Peripheral Signaling | card 6       |
| 47              | Peripheral Signaling | card 7       |
| 48              | Peripheral Signaling | card 8       |
| 49              | Peripheral Signaling | card 9       |

2. The faceplate **hex** display or this message **hex** code shows one or more of the following for network or TDS or Conference loop faults.

**ACTION:** Follow the steps in the *Hardware replacement* guide and replace the network, tone and digit switch, or conference card as indicated by the hex code. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *NPR*, *TDS* or *CFN* chapter. The following table of INI003 hex codes identify the loops.

| INI003 Hex code | For NET or T&DS or Conf or CT loop | Loop is in network shelf | Shelf is in Group |
|-----------------|------------------------------------|--------------------------|-------------------|
| 90              | 0                                  | 0                        | 0                 |
| 91              | 1                                  | 0                        | 0                 |
| 92              | 2                                  | 0                        | 0                 |
| 93              | 3                                  | 0                        | 0                 |
| 94              | 4                                  | 0                        | 0                 |
| 95              | 5                                  | 0                        | 0                 |
| 96              | 6                                  | 0                        | 0                 |
| 97              | 7                                  | 0                        | 0                 |
| 98              | 8                                  | 0                        | 0                 |
| 99              | 9                                  | 0                        | 0                 |
| 9A              | 10                                 | 0                        | 0                 |
| 9B              | 11                                 | 0                        | 0                 |
| 9C              | 12                                 | 0                        | 0                 |
| 9D              | 13                                 | 0                        | 0                 |
| 9E              | 14                                 | 0                        | 0                 |
| 9F              | 15                                 | 0                        | 0                 |
| A0              | 16                                 | 1                        | 0                 |
| A1              | 17                                 | 1                        | 0                 |
| A2              | 18                                 | 1                        | 0                 |
| A3              | 19                                 | 1                        | 0                 |
| A4              | 20                                 | 1                        | 0                 |

— continued —

| INI003 Hex code | For NET or T&DS or Conf or CT loop | Loop is in network shelf | Shelf is in Group |
|-----------------|------------------------------------|--------------------------|-------------------|
| A5              | 21                                 | 1                        | 0                 |
| A6              | 22                                 | 1                        | 0                 |
| A7              | 23                                 | 1                        | 0                 |
| A8              | 24                                 | 1                        | 0                 |
| A9              | 25                                 | 1                        | 0                 |
| AA              | 26                                 | 1                        | 0                 |
| AB              | 27                                 | 1                        | 0                 |
| AC              | 28                                 | 1                        | 0                 |
| AD              | 29                                 | 1                        | 0                 |
| AE              | 30                                 | 1                        | 0                 |
| AF              | 31                                 | 1                        | 0                 |
| B0              | 32                                 | 0                        | 1                 |
| B1              | 33                                 | 0                        | 1                 |
| B2              | 34                                 | 0                        | 1                 |
| B3              | 35                                 | 0                        | 1                 |
| B4              | 36                                 | 0                        | 1                 |
| B5              | 37                                 | 0                        | 1                 |
| B6              | 38                                 | 0                        | 1                 |
| B7              | 39                                 | 0                        | 1                 |
| B8              | 40                                 | 0                        | 1                 |
| B9              | 41                                 | 0                        | 1                 |
| BA              | 42                                 | 0                        | 1                 |
| BB              | 43                                 | 0                        | 1                 |
| BC              | 44                                 | 0                        | 1                 |
| BD              | 45                                 | 0                        | 1                 |
| BE              | 46                                 | 0                        | 1                 |
| BF              | 47                                 | 0                        | 1                 |
| C0              | 48                                 | 1                        | 1                 |
| C1              | 49                                 | 1                        | 1                 |
| C2              | 50                                 | 1                        | 1                 |
| C3              | 51                                 | 1                        | 1                 |
| C4              | 52                                 | 1                        | 1                 |
| C5              | 53                                 | 1                        | 1                 |
| C6              | 54                                 | 1                        | 1                 |
| C7              | 55                                 | 1                        | 1                 |
| C8              | 56                                 | 1                        | 1                 |

| — continued —   |                                    |                          |                   |
|-----------------|------------------------------------|--------------------------|-------------------|
| INI003 Hex code | For NET or T&DS or Conf or CT loop | Loop is in network shelf | Shelf is in Group |
| C9              | 57                                 | 1                        | 1                 |
| CA              | 58                                 | 1                        | 1                 |
| CB              | 59                                 | 1                        | 1                 |
| CC              | 60                                 | 1                        | 1                 |
| CD              | 61                                 | 1                        | 1                 |
| CE              | 62                                 | 1                        | 1                 |
| CF              | 63                                 | 1                        | 1                 |
| D0              | 64                                 | 0                        | 2                 |
| D1              | 65                                 | 0                        | 2                 |
| D2              | 66                                 | 0                        | 2                 |
| D3              | 67                                 | 0                        | 2                 |
| D4              | 68                                 | 0                        | 2                 |
| D5              | 69                                 | 0                        | 2                 |
| D6              | 70                                 | 0                        | 2                 |
| D7              | 71                                 | 0                        | 2                 |
| D8              | 72                                 | 0                        | 2                 |
| D9              | 73                                 | 0                        | 2                 |
| DA              | 74                                 | 0                        | 2                 |
| DB              | 75                                 | 0                        | 2                 |
| DC              | 76                                 | 0                        | 2                 |
| DD              | 77                                 | 0                        | 2                 |
| DE              | 78                                 | 0                        | 2                 |
| DF              | 79                                 | 0                        | 2                 |

3. Follow the steps in the *Hardware replacement* guide and replace the network, tone and digit switch, or conference card as indicated by the hex code. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *NPR*, *TDS* or *CFN* chapter. The following table of INI003 hex codes, which only apply to the SL-1 XT, Option 71 and Option 81, identify the loops.

| INI003 Hex code | For NET or T&DS or Conf or CT loop | Loop located in network shelf | Shelf located in Group |
|-----------------|------------------------------------|-------------------------------|------------------------|
| 190             | 80                                 | 1                             | 2                      |
| 191             | 81                                 | 1                             | 2                      |
| 192             | 82                                 | 1                             | 2                      |

| — continued —   |                                    |                               |                        |
|-----------------|------------------------------------|-------------------------------|------------------------|
| INI003 Hex code | For NET or T&DS or Conf or CT loop | Loop located in network shelf | Shelf located in Group |
| 193             | 83                                 | 1                             | 2                      |
| 194             | 84                                 | 1                             | 2                      |
| 195             | 85                                 | 1                             | 2                      |
| 196             | 86                                 | 1                             | 2                      |
| 197             | 87                                 | 1                             | 2                      |
| 198             | 88                                 | 1                             | 2                      |
| 199             | 89                                 | 1                             | 2                      |
| 19A             | 90                                 | 1                             | 2                      |
| 19B             | 91                                 | 1                             | 2                      |
| 19C             | 92                                 | 1                             | 2                      |
| 19D             | 93                                 | 1                             | 2                      |
| 19E             | 94                                 | 1                             | 2                      |
| 19F             | 95                                 | 1                             | 2                      |
| 1A0             | 96                                 | 0                             | 3                      |
| 1A1             | 97                                 | 0                             | 3                      |
| 1A2             | 98                                 | 0                             | 3                      |
| 1A3             | 99                                 | 0                             | 3                      |
| 1A4             | 100                                | 0                             | 3                      |
| 1A5             | 101                                | 0                             | 3                      |
| 1A6             | 102                                | 0                             | 3                      |
| 1A7             | 103                                | 0                             | 3                      |
| 1A8             | 104                                | 0                             | 3                      |
| 1A9             | 105                                | 0                             | 3                      |
| 1AA             | 106                                | 0                             | 3                      |
| 1AB             | 107                                | 0                             | 3                      |
| 1AC             | 108                                | 0                             | 3                      |
| 1AD             | 109                                | 0                             | 3                      |
| 1AE             | 110                                | 0                             | 3                      |
| 1AF             | 111                                | 0                             | 3                      |
| 1B0             | 112                                | 1                             | 3                      |
| 1B1             | 113                                | 1                             | 3                      |
| 1B2             | 114                                | 1                             | 3                      |
| 1B3             | 115                                | 1                             | 3                      |
| 1B4             | 116                                | 1                             | 3                      |
| 1B5             | 117                                | 1                             | 3                      |

| — continued —   |                                    |                               |                        |
|-----------------|------------------------------------|-------------------------------|------------------------|
| INI003 Hex code | For NET or T&DS or Conf or CT loop | Loop located in network shelf | Shelf located in Group |
| 1B6             | 118                                | 1                             | 3                      |
| 1B7             | 119                                | 1                             | 3                      |
| 1B8             | 120                                | 1                             | 3                      |
| 1B9             | 121                                | 1                             | 3                      |
| 1BA             | 122                                | 1                             | 3                      |
| 1BB             | 123                                | 1                             | 3                      |
| 1BC             | 124                                | 1                             | 3                      |
| 1BD             | 125                                | 1                             | 3                      |
| 1BE             | 126                                | 1                             | 3                      |
| 1BF             | 127                                | 1                             | 3                      |
| 1C0             | 128                                | 0                             | 4                      |
| 1C1             | 129                                | 0                             | 4                      |
| 1C2             | 130                                | 0                             | 4                      |
| 1C3             | 131                                | 0                             | 4                      |
| 1C4             | 132                                | 0                             | 4                      |
| 1C5             | 133                                | 0                             | 4                      |
| 1C6             | 134                                | 0                             | 4                      |
| 1C7             | 135                                | 0                             | 4                      |
| 1C8             | 136                                | 0                             | 4                      |
| 1C9             | 137                                | 0                             | 4                      |
| 1CA             | 138                                | 0                             | 4                      |
| 1CB             | 139                                | 0                             | 4                      |
| 1CC             | 140                                | 0                             | 4                      |
| 1CD             | 141                                | 0                             | 4                      |
| 1CE             | 142                                | 0                             | 4                      |
| 1CF             | 143                                | 0                             | 4                      |
| 1D0             | 144                                | 1                             | 4                      |
| 1D1             | 145                                | 1                             | 4                      |
| 1D2             | 146                                | 1                             | 4                      |
| 1D3             | 147                                | 1                             | 4                      |
| 1D4             | 148                                | 1                             | 4                      |
| 1D5             | 149                                | 1                             | 4                      |
| 1D6             | 150                                | 1                             | 4                      |
| 1D7             | 151                                | 1                             | 4                      |
| 1D8             | 152                                | 1                             | 4                      |

| — continued —   |                                    |                               |                        |
|-----------------|------------------------------------|-------------------------------|------------------------|
| INI003 Hex code | For NET or T&DS or Conf or CT loop | Loop located in network shelf | Shelf located in Group |
| 1D9             | 153                                | 1                             | 4                      |
| 1DA             | 154                                | 1                             | 4                      |
| 1DB             | 155                                | 1                             | 4                      |
| 1DC             | 156                                | 1                             | 4                      |
| 1DD             | 157                                | 1                             | 4                      |
| 1DE             | 158                                | 1                             | 4                      |
| 1DF             | 159                                | 1                             | 4                      |

**INI004 hex**

A memory fault. The faceplate **hex** display or this message **hex** code shows one or more of the following, indicating a defective memory module or CMA card.

**ACTION:** Follow the steps in the *Hardware replacement* guide and replace the memory modules (card) indicated by the hex code. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *CED* chapter. The following table of INI004 hex codes identify the memory cards.

| INI004 Hex code | For memory card | In CE shelf with CPU |
|-----------------|-----------------|----------------------|
| 10              | 00              | 0                    |
| 11              | 01              | 0                    |
| 12              | 02              | 0                    |
| 18              | 10              | 1                    |
| 19              | 11              | 1                    |
| 1A              | 12              | 1                    |

**INI005 000x**

A CPU or FN fault, where **x** equals 0 for a CPU 0 fault and **x** equals 1 for a CPU 1 fault.

**ACTION:** Start at the first or most likely cause and go down the list until the fault is cleared. Follow the steps in the *Hardware replacement* guide to replace the cards indicated. If the fault does not clear, call your technical support group. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *CED* chapter in this guide.



1. The Interface card may be faulty.

**ACTION:** Use STAT CPU x in LD 35 to get the status of the both IF cards. Use TCPU in LD 35 to test the inactive IF card. If necessary, replace the IF card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

2. The Function card

**ACTION:** Use STAT CPU x in LD 35 to get the status of the both FN cards. Use TCPU in LD 35 to test the inactive FN card. If necessary, replace the FN card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

3. A ROM daughter board on FN, especially if display shows 02, may be faulty.

**ACTION:** If necessary, replace the ROM daughter board following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

4. Configuration and Memory Arbitrator cards may be faulty.

**ACTION:** Use STAT CMA x in LD 35 to get the status of the CMA cards. Use ENL CMA x in LD 35 to enable CMA and run TEST in LD 45 to verify that the fault is cleared. If the CMA card does not enable and the fault does not clear, replace the CMA card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

### INI006 hex

A device or card has been detected which is not defined in the configuration record. The device must be removed or programmed in the configuration record. An accompanying INI message, with a **hex** code, should identify the device or card.

**ACTION:** Remove the card indicated, if appropriate for your situation, and follow the steps in the *Hardware replacement* guide. To program the card, if appropriate for your situation, use LD 17 in the *administration input/output guide*. The following table of INI006 hex codes identify the card, port or device.

| INI006 Range of Hex code | card, port or device | see Output codes for specific card |
|--------------------------|----------------------|------------------------------------|
| 10 to 1A                 | memory               | INI004                             |
| 40 to 49                 | peripheral signaling | INI003                             |
| 50 to 63                 | IGS                  | INI007                             |
| 70 to 71                 | MSI                  | INI002                             |
| 80 to 8F                 | SDI                  | INI002                             |
| 90 to 1DF                | loops                | INI003                             |
| E0 to FF                 | extenders            | INI014                             |

**INI007 hex**

Intergroup Switch fault. The faceplate **hex** display or this message **hex** code indicates one or more defective IGS card.

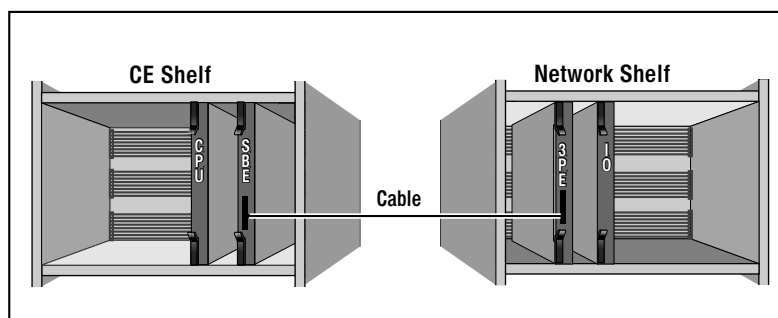
**ACTION:** Follow the steps in the *Hardware replacement* guide to replace the cards indicated. If the fault does not clear, call your technical support group. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *IGS* chapter. The following table of INI007 hex codes that identify the IGS cards in this guide.

| INI007 Hex code | For IGS card | Card is in network shelf | Shelf is in Group |
|-----------------|--------------|--------------------------|-------------------|
| 50              | 0            | 0                        | 0                 |
| 51              | 1            | 1                        | 0                 |
| 52              | 2            | 0                        | 0                 |
| 53              | 3            | 1                        | 0                 |
| 54              | 4            | 0                        | 1                 |
| 55              | 5            | 1                        | 1                 |
| 56              | 6            | 0                        | 1                 |
| 57              | 7            | 1                        | 1                 |
| 58              | 8            | 0                        | 2                 |
| 59              | 9            | 1                        | 2                 |
| 5A              | 10           | 0                        | 2                 |
| 5B              | 11           | 1                        | 2                 |
| 5C              | 12           | 0                        | 3                 |
| 5D              | 13           | 1                        | 3                 |
| 5E              | 14           | 0                        | 3                 |
| 5F              | 15           | 1                        | 3                 |

| — continued —   |              |                          |                   |
|-----------------|--------------|--------------------------|-------------------|
| INI007 Hex code | For IGS card | Card is in network shelf | Shelf is in Group |
| 60              | 16           | 0                        | 4                 |
| 61              | 17           | 1                        | 4                 |
| 62              | 18           | 0                        | 4                 |
| 63              | 19           | 1                        | 4                 |

**INI008 hex**

The CPU or FN tried to access an I/O device port but could not because of a faulty extender (SBE, 3PE, cable). The CPU is unable to indicate which extender is at fault. It can only indicate that the I/O device it tried to access did not respond. The I/O device is indicated in the faceplate **hex** display or this message **hex** code .



553-0186T SI

**1.** If there is no hex indicator, the standby CPU has full access through the extenders to the network shelves but the active CPU does not.

**ACTION:** Check all the Segmented Bus Extender cards or the 3 Port Extender cards; or the cables between the extenders associated with the active CPU, and all network shelves. Replace faulty components following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

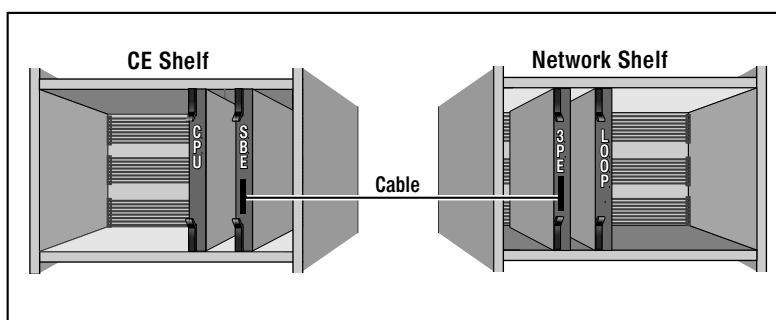
**2.** If the output code includes one or more hex indicators, the standby CPU has limited access through the extenders to the network shelves.

**ACTION:** Use the INI008 Hex code table below to locate the network shelf where the I/O device is situated. Check the Segmented Bus Extender card, or the 3 Port Extender card, or the cable between the standby CPU and the located network shelf. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

| INI008 Hex code | I/O device        | Port on I/O device |
|-----------------|-------------------|--------------------|
| 70              | MSI               | device 0           |
| 80              | SDI, ESDI or MSDL | port 0             |
| 81              | SDI, ESDI or MSDL | port 1             |
| 82              | SDI, ESDI or MSDL | port 2             |
| 83              | SDI, ESDI or MSDL | port 3             |
| 84              | SDI, ESDI or MSDL | port 4             |
| 85              | SDI, ESDI or MSDL | port 5             |
| 86              | SDI, ESDI or MSDL | port 6             |
| 87              | SDI, ESDI or MSDL | port 7             |
| 88              | SDI, ESDI or MSDL | port 8             |
| 89              | SDI, ESDI or MSDL | port 9             |
| 8A              | SDI, ESDI or MSDL | port 10            |
| 8B              | SDI, ESDI or MSDL | port 11            |
| 8C              | SDI, ESDI or MSDL | port 12            |
| 8D              | SDI, ESDI or MSDL | port 13            |
| 8E              | SDI, ESDI or MSDL | port 14            |
| 8F              | SDI, ESDI or MSDL | port 15            |

#### INI009 hex

The CPU or FN tried to access a Network, Tone and Digit switch, or conference loop, but could not because of a faulty extender (SBE, 3PE, cable). The CPU is unable to indicate which extender is at fault. It only indicates that the loop it tried to access did not respond. The loop is shown in the faceplate **hex** display or this message **hex** code .



553-0187T SI

1. If there is no hex indicator, the standby CPU has full access through the extenders, to the network shelves, but the active CPU does not.

**ACTION:** Check all the Segmented Bus Extender cards or the 3 Port Extender cards, or the cables between the extenders associated with the active CPU, and all network shelves. Replace faulty components following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

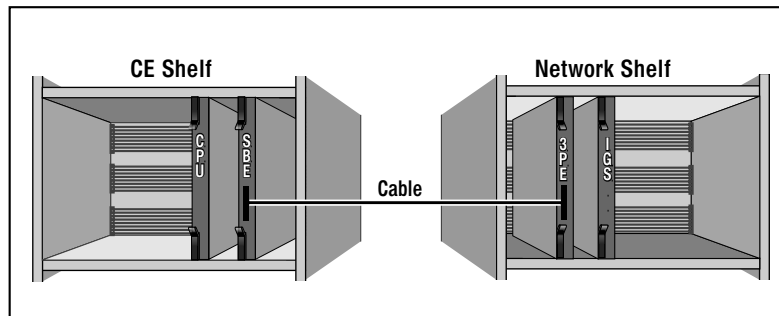
2. If the output code includes one or more hex indicators, the standby CPU has limited access through the extenders to the network shelves.

**ACTION:** Use the INI009 Hex code table to locate the network shelf. Check the Segmented Bus Extender card, or the 3 Port Extender card, or the cable between the standby CPU and the located network shelf. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

| INI009 Hex code range | Network shelf | Group |
|-----------------------|---------------|-------|
| 90 to 9F              | 0             | 0     |
| A0 to AF              | 1             | 0     |
| B0 to BF              | 0             | 1     |
| C0 to CF              | 1             | 1     |
| D0 to DF              | 0             | 2     |
| 190 to 19F            | 1             | 2     |
| 1A0 to 1AF            | 0             | 3     |
| 1B0 to 1BF            | 1             | 3     |
| 1C0 to 1CF            | 0             | 4     |
| 1D0 to 1DF            | 1             | 4     |

**INI010 hex**

The CPU or FN tried to access an Intergroup Switch card but could not because of a faulty extender (SBE, 3PE, cable). The CPU is unable to indicate which extender is at fault. It can only indicate that the IGS card it tried to access did not respond. The IGS card is indicated in the faceplate **hex** display or this message **hex** code .



553-0188T SI

1. If there is no hex indicator, the standby CPU has full access, through the extenders, to the network shelves but the active CPU does not.

**ACTION:** Check all the Segmented Bus Extender cards or the 3 Port Extender cards, or the cables between the extenders associated with the active CPU and all network shelves. Replace faulty components following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

2. If the output code includes one or more hex indicators, the standby CPU has limited access, through the extenders, to the network shelves.

**ACTION:** Use the INI010 Hex code table to locate the network shelf. Check the Segmented Bus Extender card, or the 3 Port Extender card, or the cable between the standby CPU and the located network shelf. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

| INI010 Hex code | Network shelf | Group |
|-----------------|---------------|-------|
| 50              | 0             | 0     |
| 51              | 1             | 0     |
| 52              | 0             | 0     |
| 53              | 1             | 0     |
| 54              | 0             | 1     |
| 55              | 1             | 1     |
| 56              | 0             | 1     |
| 57              | 1             | 1     |
| 58              | 0             | 2     |
| 59              | 1             | 2     |
| 5A              | 0             | 2     |
| 5B              | 1             | 2     |
| 5C              | 0             | 3     |
| 5D              | 1             | 3     |
| 5E              | 0             | 3     |
| 5F              | 1             | 3     |
| 60              | 0             | 4     |
| 61              | 1             | 4     |
| 62              | 0             | 4     |
| 63              | 1             | 4     |

**INI011 hex**

The faceplate **hex** display or this message **hex** code indicates Network shelves that do not respond to Clock Controller 0 or the SCG card 0.

**1.** A hex code of 6E indicates a probable fault on CC/SCG, IGS or interconnecting cables through the Junctor.

**2.** For SL-1 VL, VLE and XL systems, display 5E = MG CTRL 0

**ACTION:** Check and replace the clock card or the interconnecting cables, the clock and Junctor, following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**INI012 hex**

The faceplate **hex** display or this message **hex** code indicates Network shelves that do not respond to Clock Controller 1 or the SCG card 1.

**1.** A hex display or hex code of 6F. The probable fault is on CC/SCG, IGS or interconnecting cables through the Junctor.

**2.** For SL-1 VL, VLE and XL systems, display 5F = MG CTRL 1.

**ACTION:** Check and replace the clock card or the interconnecting cables, the clock and Junctor, following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**INI013 000x**

**x** = 0 for CPU 0 or 1 for CPU 1. There is a possible CPU or FN fault, because the CPU has initialized more than five times, since the previous running of the midnight or daily routines.

**ACTION:** Check and replace the CPU/ MISC. or FN/IF card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.



**INI014 hex**

The faceplate **hex** display or this message **hex** code indicates an Extender fault or stuck I/O interrupt on the network shelf associated with the extender card.

**1.** If a stuck interrupt, the interrupt was identified which could not be disabled directly. Disabling the extender allows the Meridian 1 to process interrupts from devices not located on the network shelf with the stuck interrupt.

**ACTION:** In LD 35, use DIS EXT x to disable the extender and ENL EXT x to enable the extender. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**2.** Extender fault

**ACTION:** If the problem reoccurs, replace the extender following the steps in the *Hardware replacement* guide. The following table of INI014 hex codes identify the extender card. After replacing the card verify that the fault is cleared.

| INI014 Hex code | For extender | linking | to      |
|-----------------|--------------|---------|---------|
| E0              | SBE          | CPU 0   | group 0 |
| E1              | SBE          | CPU 0   | group 1 |
| E2              | SBE          | CPU 0   | group 2 |
| E3              | SBE          | CPU 0   | group 3 |
| E4              | SBE          | CPU 0   | group 4 |
| E8              | 3PE          | group 0 | CPU 0   |
| E9              | 3PE          | group 1 | CPU 0   |
| EA              | 3PE          | group 2 | CPU 0   |
| EB              | 3PE          | group 3 | CPU 0   |
| EC              | 3PE          | group 4 | CPU 0   |
| F0              | SBE          | CPU 1   | group 0 |
| F1              | SBE          | CPU 1   | group 1 |
| F2              | SBE          | CPU 1   | group 2 |
| F3              | SBE          | CPU 1   | group 3 |
| F4              | SBE          | CPU 1   | group 4 |
| F8              | 3PE          | group 0 | CPU 1   |
| F9              | 3PE          | group 1 | CPU 1   |

|    |                            |         |       |
|----|----------------------------|---------|-------|
| FA | 3PE                        | group 2 | CPU 1 |
| FB | 3PE                        | group 3 | CPU 1 |
| FC | 3PE                        | group 4 | CPU 1 |
| FF | All extenders are disabled |         |       |

**INI016 hex**

The faceplate **hex** display or this message **hex** code indicates the following:

1. If this messages appears without a hex code, the standby CPU or FN has full access to all devices of the appropriate type, but the active CPU or FN does not.

**ACTION:** Check and replace the CMA card following the steps in the *Hardware replacement* guide. The following table of INI016 hex codes identify the memory and CMA cards.

2. Memory access faults from the standby CPU or FN. If the maintenance hex display or hex code shows one or more of the following, indicating a defective memory module or CMA card.

**ACTION:** Check and replace the CMA card or the memory cards following the steps in the *Hardware replacement* guide. The following table of INI016 hex codes identify the memory and CMA cards. After replacing a card, verify that the fault is cleared.

| INI016 Hex code | memory card | CMA card | Memory and CMA are on CE shelf |
|-----------------|-------------|----------|--------------------------------|
| 10              | 00          | 0        | 0                              |
| 11              | 01          | 0        | 0                              |
| 12              | 02          | 0        | 0                              |
| 18              | 10          | 1        | 1                              |
| 19              | 11          | 1        | 1                              |
| 1A              | 12          | 1        | 1                              |

**INI017**

More than five Network or Network/DTR cards need a software download recovery during the auto-recovery or midnight audit.

**ACTION:** Examine the fault code field for cause of the initialization.

**INI018**

More than five Peripheral Controllers need a software download recovery during the auto-recovery or midnight audit.

**ACTION:** Examine the fault code field for cause of the initialization.

**INI020 aaaa**

Page 0 has been frozen at address **aaaa** for software analysis, (XN CPU/Memory).

**ACTION:** Your technical support group is probably already aware of this.

**INI021**

Idle Output queue was not set up.

**ACTION:** If this fault is causing problems, contact your technical support group.

**INI022**

X08 omega diagnostic return address stack information is output.

**ACTION:** If this is causing problems, contact your technical support group.

**INI100**

DDSL card failed read/write response test. Fault codes 200 - 29F indicate the DDSL number 0 - 159 respectively.

**ACTION:** Contact your technical support group.

**INI102**

The mass storage interface is not responding. Peripheral software downloading was not attempted.

**ACTION:** Follow the steps in the *Hardware replacement* guide and replace the MSI card. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *IOD* chapter in this guide.

**INI106 n**

The number of Call Registers has been reduced by **n**. This warning indicates that the number of Call Registers has been reduced since the amount of the available unprotected data-store is not large enough for the configured number of Call Registers.

**ACTION:** Contact your provisioning group to re-evaluate the number of Call Registers required. Examine the use of unprotected data-store.

**INI111**

16K of unprotected memory space cannot be allocated for INIT ACD Queue Call Restore (ACDR).

**ACTION:** Contact your technical support group.

**INI112**

INIT ACD Queue Call Restore (ACDR) aborted due to multiple system initializations.

**ACTION:** Contact your technical support group.

**Fault codes**

The following fault codes are output as the second field in the INI000 message. Note that the fault codes from some systems may show more backfilled zeros than indicated in the following list.

**0000**

Normal initialize after SYSLOAD.

**ACTION:** Information only, no action required.

This code may also appear if a fault occurs in memory 0. In this case, an INI004 10 message will follow the INI000 line.

**ACTION:** Refer to the output code INI004.

**0002**

Manual initialize from the Miscellaneous (MISC) or Interface (IF) card.

**ACTION:** For information only, to advise you that the MAN INT button was pressed.

The code appears but the button on the MISC or IF card was not pressed.

**ACTION:** Check and replace the MISC or IF card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**0003**

A PE signaling fault. The INI003 message will follow to identify the Peripheral Signaling card at fault.

**ACTION:** Refer to output code INI003.

**0004**

The Real-Time Clock (RTC) has failed, in a system having two CPUs. Start at the first or most likely cause and go down the list until the fault is cleared.

1. A probable fault in the Peripheral Signaling card providing the clock.

**ACTION:** Follow the steps in the *Hardware replacement* guide to replace the cards indicated. If the fault does not clear, call your technical support group. If you need help with the commands or system responses when verifying that the fault is cleared, refer to the *CED* chapter in this guide.

2. Miscellaneous or Interface associated with an active CPU.

**ACTION:** Follow the steps in the *Hardware replacement* guide to replace the MISC. or IF cards. If the fault does not clear, call your technical support group. If you need help with the commands or system responses when verifying that the fault is cleared, refer to the *CED* chapter in this guide.

**0005**

A CPU changeover has taken place due to a failure of the then-active CPU. The faulty CPU or FN should be identified by a subsequent INI005 message.

**ACTION:** Refer to output code INI005.

**0006**

An Overload is detected from a particular loop. The loop will be disabled. An OVD diagnostic message should follow. If an OVD message identifying a faulty PE card appeared before the initialization, remove that card before the loop.

**ACTION:** Note the OVD message and refer to the *OVD* chapter in this guide. Test and replace the card(s) if necessary.

**0007**

An Overload is detected from a Peripheral Signaling card. The offending Peripheral Signaling card will be disabled. An OVD diagnostic message should follow.

**ACTION:** Note the OVD message and refer to the *OVD* chapter in this guide. Test and replace the card(s) if necessary.

**0008**

1. Invalid operation code (opcode). Inform the operating company.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

2. A problem encountered when attempting to load Overlay N 1 and N 2.

**ACTION:** Try to load the overlay from the floppy if a hard disk is present or try to load overlay from another set of diskettes, as a floppy diskette may be faulty. If the above actions do not clear the fault, replace the MDU following the steps in the *Hardware replacement* guide.

**0009**

Invalid interrupt. Inform operating company.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**000A**

Attempt to write store using a nil pointer. Software error.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**000B**

Main stack underflow. Software error.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**000C**

Broken queue. Software error.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**000D**

Response timeout in data-store 0. The System should reload. Replace data-store 0.

**ACTION:** Follow the steps in the *Hardware replacement* guide to replace the memory card 00, if necessary. If the fault does not clear, call your technical support group. If you need help with the commands or system responses when verifying the fault is cleared, refer to the *CED* chapter in this guide.

**000E**

Trying to idle Call Register with active auxiliary Call Registers still linked to it. Inform operating company.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**000F**

A Service change. The data-store has been exceeded and should be preceded by a warning message, "Equip more data store". Insufficient memory for SL-1 L, VL, LE, VLE and XL systems.

**ACTION:** Refer to the *CED* chapter and the *administration input/output guide* LD 17 to install more memory.

**0010**

Congratulations on a job well done; conversions are complete.

**ACTION:** Information only, no action required.

**0011**

Triggered by a software verification program which is used only by the operating company. If an investigation by the operating company is not currently active, then inform the operating company.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**0012**

Caused by Common Equipment Diagnostic (CED) trying to rebuild an unprotected data-store.

**ACTION:** Be careful when using memory commands during peak telephone traffic times.

**0013**

All extenders are disabled. This may be followed by an INI014 FF.

**ACTION:** Refer to output code INI014.

**0014**

A Firmware fault. CPU clock unmasked. This is the same as 011.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.



**0015**

A Firmware fault. The RTC interrupt on level 7 is unmasked. This is the same as 0011.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**0017**

More than five NT8D04 Network or Network/DTR cards need software download recovery during the auto-recovery or midnight audit. xxxx = cause of the initialization.

**ACTION:** Examine previous INI messages for the cause of software download recoveries.

**0018**

More than five NT8D01 Peripheral Controllers need software download recovery during the auto-recovery or midnight audit.

**ACTION:** Examine the previous INI messages for cause of software download recoveries.

**0019**

From Firmware. The system has initialized after recovery from battery backup. The system clock time may have slipped during the time the system was under battery power.

**ACTION:** To reset the time, use LD 2 and refer to the *Set Time and Date* chapter in this guide.

**001C**

There have been more than 10 occurrences of auto-recoveries to avert INI000 000C problems since the last system initialization. INI000 000C was triggered to perform systae cleanup following midnight routines.

**ACTION:** Contact your technical support group.

**001D**

An invalid pointer is found during queue processing.

**ACTION:** Contact your technical support group.

**00000021**

Hardware Sanity Timeout on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000022**

SWO. Failure on switchover on Options 51C/61C/81/81C.

**ACTION:** To check hardware on the affected core, use LD 135.

**00000023**

SWO. Too many switchovers on Options 51C/61C/81/81C.

**ACTION:** Information only. If the error continues contact your technical support group.

**00000024**

WARM. Disk OS warmstart failure on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000025**

WARM. Too many Disk OS Warmstarts on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000026**

WARM. Disk OS not loaded on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000027**

RESET: Forced SWO in progress on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**00000028**

RESET: Soft Reset in progress on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**00000029**

TASK: Unable to create msg queue on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000002A**

Protected Memory checksum failure on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000002B**

INFO: Disk OS Warm start begins on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**0000002C**

INFO: DRAM is not initialized on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**0000002D**

Restart: Cannot delete safe task on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000002E**

RESET: Task threshold exceeded on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000002F**

WARM: Exc vector thresh exceeded on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000030**

WARM: Exc total thresh exceeded on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000031**

WARM: Non-bus exc in interrupt on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000036**

SEG: Disk OS Text segment corrupt on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000037**

SEG: Disk OS partitions corrupt on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000038**

DISKOS: Unable to load SL-1 on Options 51C/61C/81/81C.

**ACTION:** Make sure the correct TOOLS window selection was made.

**0000003E**

Parity Err - remote SIMM: missing on Options 51C/61C/81/81C.

**ACTION:** Check the SIMM status in LD 135.

**0000003F**

Parity Err - remote SIMM: disabled on Options 51C/61C/81/81C.

**ACTION:** LD 135 and re-enable SIMM.

**00000040**

HI BER recommended action on Options 51C/61C/81/81C.

**ACTION:** Information only. No action required

**00000041**

HI BER TASK RESTART for safe task on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**00000042**

HI Warm Start not possible on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000049**

OS: manual (PDT) request on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**0000004A**

OS: request to reboot (sysToMon) on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**0000004B**

OS: RST initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000004C**

OS: SKD initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000004D**

OS: SWD initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000004E**

OS: PMEM initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000004F**

OS: Security Cart check failed on Options 51C/61C/81/81C.

**ACTION:** Check to make sure correct cartridge is being used.

**00000050**

OS: Normal recovery from BER on Options 51C/61C/81/81C.

**ACTION:** Information only, no action required.

**00000051**

OS: Unable to recover from BER on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000052**

OS: Unable to run “diskos” on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000053**

OS: Unable to load “diskos” on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000054**

OS: VOL initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000055**

OS: SCSI initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000056**

OS: DOS initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000057**

OS: IOP initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000058**

OS: EXC initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**00000059**

OS: IOS initialization failed on Option 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000005A**

OS: Clock initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000005B**

OS: Failed during Loader run on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000005C**

OS: Failed to spawn Loader task on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000005D**

OS: kernel initialization failed on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000005E**

OS: diskos P seg overlaps U seg on Options 51C/61C/81/81C.

**ACTION:** Contact your technical support group.

**0000005F**

Operating System level command to coldstart on Options 51C/61C/81.

**ACTION:** Contact your technical support group.

**0100**

Trap data blocks are not valid.

**ACTION:** No action required. If this message appears repeatedly, contact your technical support group.

**0200**

The SYSLOAD was caused by response timeout of data-store.

**ACTION:** Follow the steps in the *Hardware replacement* guide to replace the memory card(s) if necessary. If you need help with the commands or system responses when verifying that the fault is cleared, refer to the *CED* chapter in this guide.

**0400**

Power-on reset. Power-up, manual reload.

**ACTION:** Check to see if the commercial power failed.

**0800**

Software trap.

**ACTION:** No action required. If this message appears repeatedly, contact your technical support group.

**1000**

A Memory parity error.

**ACTION:** Refer to *Example of INI Messages* in this chapter.

Examine the fault page field, seventh from INI000, and the fault address field, eighth from INI000, for this message. If the fault page is 3 and the fault address field codes are listed below, these address codes indicate the following cards may be faulty:

1. The CMA card may be faulty.

**ACTION:** Use STAT CMA x in LD 35 to get the status of the CMA cards. Use ENL CMA x in LD 35 to enable CMA and run TEST in LD 45 to verify that the fault is cleared. If the CMA card does not enable and the fault does not clear, replace the CMA card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

2. MISC card may be faulty.

**ACTION:** Indiscriminate use of the following test command, especially during heavy telephone traffic periods, may cause the system to reload. Use TCPU in LD 35 to test the idle MISC circuitry or IF card. If MISC circuitry or the IF card does not pass the test, or the fault does not clear, replace it following the steps in the *Hardware replacement* guide. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

3. The Memory card may be faulty.

**ACTION:** Follow the steps in the *Hardware replacement* guide and replace the memory modules (card). If you need help with the commands or system responses when verifying that the fault is cleared, refer to the *CED* chapter in this guide.

**2000**

Watchdog timer run out. This fault code without an additional INI00x hex output code, sometimes denotes a software fault.

**ACTION:** Contact your technical support group.

If accompanied by an additional INI00x hex output code, this could indicate hardware faults as follows.

1. This fault code with an INI002 message indicates an I/O fault.

**ACTION:** Refer to output code INI002.

2. This fault code with an INI003 message indicates a network fault.

**ACTION:** Refer to output code INI003.

3. If the maintenance display on the faceplate of the IF card is 04, suspect the inactive IF card.

**ACTION:** Use STAT CPU x in LD 35 to get the status of both IF cards. Use TCPU in LD 35 to test the inactive IF card. If necessary, replace the IF card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

4. If the maintenance display on the faceplate of the IF card is 05, suspect the following cards.

- a) The Peripheral Signaling card may be faulty.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of all PS cards. Replace the PS cards following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* or *IGS* chapter in this guide.

- b) The CE Extender card may be faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and 3 Port Extender card. Use ENL EXT x in LD 35 to enable extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and fault does not clear, replace the extender card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.



5. The affected CPU or FN may be faulty.

**ACTION:** Use STAT CPU x in LD 35 to get the status of both FN cards. Use TCPU in LD 35 to test the inactive FN card. If necessary, replace the FN card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

### 3000

Same as code 1000.

**ACTION:** Refer to the action for fault code 1000.

### 4000

A write protection violation. An attempt was made to overwrite a protected memory location.

1. This code may appear if the affected CPU is faulty, especially the IF card.

**ACTION:** Use STAT CPU x in LD 35 to get the status of the both IF cards. Use TCPU in LD 35 to test the inactive IF card. If necessary, replace the IF card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

2. The software may be faulty.

**ACTION:** Contact your technical support group.

### 5000

Same as code 1000.

**ACTION:** Refer to the action for fault code 1000.

### 6000

Same as code 2000.

**ACTION:** Refer to the action for fault code 2000.

### 7000

Same as code 1000.

**ACTION:** Refer to the action for fault code 1000.

**8000**

Response time-out. A memory or other device failed to respond to a read-write request.

1. This fault code with an INI002 message indicates an I/O fault.

**ACTION:** Refer to the output code INI002.

2. This fault code with an INI003 message indicates a network fault.

**ACTION:** Refer to the output code INI003.

3. This fault code with an INI004 message indicates a CPU fault.

**ACTION:** Refer to the output code INI004.

4. If several devices on the same shelf are indicated, the CE extender connecting the shelf to the CPU may be faulty.

**ACTION:** Use STAT EXT in LD 35 to get the status of the Segmented Bus Extender card and 3 Port Extender card. Use ENL EXT x in LD 35 to enable extender pair and run TEST in LD 45 to verify that the fault is cleared. If the extenders do not enable and fault does not clear, replace the extender card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

5. If none of the above messages appear, this code probably indicates the following:

- a) The software may be faulty.

**ACTION:** Contact your technical support group.

- b) There is a CPU fault, especially the Interface card of the affected CPU.

**ACTION:** Use STAT CPU x in LD 35 to get the status of the both IF cards. Use TCPU in LD 35 to test the inactive IF card. If necessary, replace the IF card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with commands or system responses refer to the *CED* chapter in this guide.

c) Peripheral Signaling card faulty on same bus as affected CPU.

**ACTION:** Use STAT PER x in LD 32 or LD 39 to get the status of all PS cards. Replace the PS cards following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with commands or system responses refer to the *NPR* or *IGS* chapter in this guide.

d) Faulty ROM on CPU or FN card faulty.

**ACTION:** If necessary, replace the ROM daughter board following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with commands or system responses refer to the *CED* chapter in this guide.

6. On an Option 21E system running 19.32 software, if you are receiving ERR5245 and INI000 8000 messages and the fault page in the initialization message is 3.

**ACTION:** Replace the MSPS (NTDN02) card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### 9000

Same as code 1000.

**ACTION:** Refer to the action for fault code 1000.

#### A000

Same as code 8000.

**ACTION:** Refer to the action for fault code 8000.

#### B000

Same as code 1000.

**ACTION:** Refer to the action for fault code 1000.

#### C000

Same as code 8000.

**ACTION:** Refer to the action for fault code 8000.

#### D000

Same as code 1000.

**ACTION:** Refer to the action for fault code 1000.

**E000**

Same as code 8000.

**ACTION:** Refer to the action for fault code 8000.

**F000**

Same as code 1000.

**ACTION:** Refer to the action for fault code 1000.

## Decoding the Fault Address Code

The following is used to interpret a single fault address for page 3 hardware faults. To obtain the address of the fault, the 4-digit hexadecimal codes must be converted to a 16 bit binary word.



**INI000 000002 10 09 38 000000 07A188 000003**  
**000DC0 0 1 000000**

1. From the above example, if eighth field is 3, write the last four digits of the ninth field on a paper (hexadecimal).

Note that as the ninth field **000DC0** indicates, the range of the hexadecimal code is between 8000 to A7FF, a network loop is faulty.

2. Write the binary values on the paper. It takes four binary values to equal one hexadecimal character.

3. Write a 1 under the column value that will add up to the hexadecimal number above it. In hexadecimal the numbers 0 to 9 are the same as decimal 0 to 9. Hexadecimal A=10, B=11, C=12, D=13, E=14, F=15.

| Hexadecimal   | 0       | D       | C       | 0       |
|---------------|---------|---------|---------|---------|
| Binary values | 8 4 2 1 | 8 4 2 1 | 8 4 2 1 | 8 4 2 1 |
| 16 bit word   | 0 0 0 0 | 1 1 0 1 | 1 1 0 0 | 0 0 0 0 |

4. Write the bit identifiers under the 16 bit word.

5. In the fault address codes for page 3, bits 6 to 13 are relevant as the example system uses enhanced network loops.

|              |    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |   |
|--------------|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|
| 16 bit word  | 0  | 0  | 0  | 0  | 1  | 1  | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| bit identity | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

6. Assume that bits 6 to 13 are a single entity. Assign column values, starting with 1 on the right and double the previous value as you refer to the left.

|              |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |
|--------------|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|
|              | 1 |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |
|              | 2 | 6 | 3 | 1 |   |   |   |   |  |  |  |  |  |  |  |  |
| Column value | 8 | 4 | 2 | 6 | 8 | 4 | 2 | 1 |  |  |  |  |  |  |  |  |
| Bits 6 to 13 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |

7. Add up the column values where a 1 in bits 6 to 13 are present.  
 $32+16+4+2+1 = 55$ .

Network loop 55 is faulty.

### Fault Address Codes for page 3

The following Fault Address Codes are output as the ninth field in INI000 messages. The fault address codes from some systems may show more backfilled zeros than indicated in the Fault Address Code column of the following code list.

Outputs not covered in this list cannot be decoded to an address, however they may indicate a Bus Fault.

#### 0800 to 0807

CPU or FN card fault address, or an extender fault.

**ACTION:** Follow the INI005 output code action.

#### 1806

CMA card fault address.

**ACTION:** Follow the INI005, item 4 output code action.

#### 0x3000 to 0x 30F0 and 0xC000 to 0xC3C0

SDI device fault address.

Bits 4 to 7 provide card addressing.

**ACTION:** Refer to the following table to locate the faulty card and follow the INI002 output code action.

| SL-1 NT, XT and Option 51, 61, 71 |               |
|-----------------------------------|---------------|
| 3000 = SDI 0                      | 3010 = SDI 1  |
| 3020 = SDI 2                      | 3030 = SDI 3  |
| 3140 = SDI 4                      | 3050 = SDI 5  |
| 3160 = SDI 6                      | 3070 = SDI 7  |
| 3080 = SDI 8                      | 3090 = SDI 9  |
| 30A0 = SDI 10                     | 30B0 = SDI 11 |
| 30C0 = SDI 12                     | 30D0 = SDI 13 |
| 30E0 = SDI 14                     | 30F0 = SDI 15 |

| Option 51C, 61C, 81 and 81C |               |
|-----------------------------|---------------|
| C000 = SDI 0                | C040 = SDI 1  |
| C080 = SDI 2                | C0C0 = SDI 3  |
| C100 = SDI 4                | C140 = SDI 5  |
| C180 = SDI 6                | C1C0 = SDI 7  |
| C200 = SDI 8                | C240 = SDI 9  |
| C280 = SDI 10               | C2C0 = SDI 11 |
| C300 = SDI 12               | C340 = SDI 12 |
| C380 = SDI 13               | C3C0 = SDI 15 |

**0x3800 to 0x3CF8 and 0xE000 to 0xF3E0**

Expanded Serial Data Interface (XSDI) device fault address.

**ACTION:** Refer to the following table to locate the faulty card and follow the steps in the *Hardware replacement* guide to replace the Expanded Digital Signalling Link card (NT5K75AA).

| SL-1 NT, XT and Option 51, 61, 71 |                | Option 51C, 61C, 81 and 81C |                |
|-----------------------------------|----------------|-----------------------------|----------------|
| 3800 = XSDI 0                     | 3808 = XSDI 1  | E000 = XSDI 0               | E020 = XSDI 1  |
| 3810 = XSDI 2                     | 3818 = XSDI 3  | E040 = XSDI 2               | E060 = XSDI 3  |
| 3820 = XSDI 4                     | 3828 = XSDI 5  | E080 = XSDI 4               | E0A0 = XSDI 5  |
| 3830 = XSDI 6                     | 3838 = XSDI 7  | E0C0 = XSDI 6               | E0E0 = XSDI 7  |
| 3840 = XSDI 8                     | 3848 = XSDI 9  | E100 = XSDI 8               | E120 = XSDI 9  |
| 3850 = XSDI 10                    | 3858 = XSDI 11 | E140 = XSDI 10              | E160 = XSDI 11 |
| 3860 = XSDI 12                    | 3868 = XSDI 13 | E180 = XSDI 12              | E1A0 = XSDI 13 |
| 3870 = XSDI 14                    | 3878 = XSDI 15 | E1C0 = XSDI 14              | E1E0 = XSDI 15 |
| 3880 = XSDI 16                    | 3888 = XSDI 17 | E200 = XSDI 16              | E220 = XSDI 17 |
| 3890 = XSDI 18                    | 3898 = XSDI 19 | E240 = XSDI 18              | E260 = XSDI 19 |
| 38A0 = XSDI 20                    | 38A8 = XSDI 21 | E280 = XSDI 20              | E2A0 = XSDI 21 |
| 38B0 = XSDI 22                    | 38B8 = XSDI 23 | E2C0 = XSDI 22              | E2E0 = XSDI 23 |
| 38C0 = XSDI 24                    | 38C8 = XSDI 25 | E300 = XSDI 24              | E320 = XSDI 25 |
| 38D0 = XSDI 26                    | 38D8 = XSDI 27 | E340 = XSDI 26              | E360 = XSDI 27 |
| 38E0 = XSDI 28                    | 38D8 = XSDI 29 | E380 = XSDI 28              | E3A0 = XSDI 29 |
| 38F0 = XSDI 30                    | 38F8 = XSDI 31 | E3C0 = XSDI 30              | E3E0 = XSDI 31 |
| 3900 = XSDI 32                    | 3908 = XSDI 33 | E400 = XSDI 32              | E420 = XSDI 33 |
| 3910 = XSDI 34                    | 3918 = XSDI 35 | E440 = XSDI 34              | E460 = XSDI 35 |
| 3920 = XSDI 36                    | 3928 = XSDI 37 | E480 = XSDI 36              | E4A0 = XSDI 37 |
| 3930 = XSDI 38                    | 3938 = XSDI 39 | E4C0 = XSDI 38              | E4E0 = XSDI 39 |
| 3940 = XSDI 40                    | 3948 = XSDI 41 | E500 = XSDI 40              | E520 = XSDI 41 |
| 3950 = XSDI 42                    | 3958 = XSDI 43 | E540 = XSDI 42              | E560 = XSDI 43 |
| 3960 = XSDI 44                    | 3968 = XSDI 45 | E580 = XSDI 44              | E5A0 = XSDI 45 |
| 3970 = XSDI 46                    | 3978 = XSDI 47 | E5C0 = XSDI 46              | E5E0 = XSDI 47 |

## — continued —

| SL-1 NT, XT and Option 51, 61, 71 |                 | Option 51C, 61C, 81 and 81C |                 |
|-----------------------------------|-----------------|-----------------------------|-----------------|
| 3980 = XSDI 48                    | 3988 = XSDI 49  | E600 = XSDI 48              | E620 = XSDI 49  |
| 3990 = XSDI 50                    | 3998 = XSDI 51  | E640 = XSDI 50              | E660 = XSDI 51  |
| 39A0 = XSDI 52                    | 39A8 = XSDI 53  | E680 = XSDI 52              | E6A0 = XSDI 53  |
| 39B0 = XSDI 54                    | 39B8 = XSDI 55  | E6C0 = XSDI 54              | E6E0 = XSDI 55  |
| 39C0 = XSDI 56                    | 39C8 = XSDI 57  | E700 = XSDI 56              | E720 = XSDI 57  |
| 39D0 = XSDI 58                    | 39D8 = XSDI 59  | E740 = XSDI 58              | E760 = XSDI 59  |
| 39E0 = XSDI 60                    | 39D8 = XSDI 61  | E780 = XSDI 60              | E7A0 = XSDI 61  |
| 39F0 = XSDI 62                    | 39F8 = XSDI 63  | E7C0 = XSDI 62              | E7E0 = XSDI 63  |
| 3A00 = XSDI 64                    | 3A08 = XSDI 65  | E800 = XSDI 64              | E820 = XSDI 65  |
| 3A10 = XSDI 66                    | 3A18 = XSDI 67  | E840 = XSDI 66              | E860 = XSDI 67  |
| 3A20 = XSDI 68                    | 3A28 = XSDI 69  | E880 = XSDI 68              | E8A0 = XSDI 69  |
| 3A30 = XSDI 70                    | 3A38 = XSDI 71  | E8C0 = XSDI 70              | E8E0 = XSDI 71  |
| 3A40 = XSDI 72                    | 3A48 = XSDI 73  | E900 = XSDI 72              | E920 = XSDI 73  |
| 3A50 = XSDI 74                    | 3A58 = XSDI 75  | E940 = XSDI 74              | E960 = XSDI 75  |
| 3A60 = XSDI 76                    | 3A68 = XSDI 77  | E980 = XSDI 76              | E9A0 = XSDI 77  |
| 3A70 = XSDI 78                    | 3A78 = XSDI 79  | E9C0 = XSDI 78              | E9E0 = XSDI 79  |
| 3A80 = XSDI 80                    | 3A88 = XSDI 81  | EA00 = XSDI 80              | EA20 = XSDI 81  |
| 3A90 = XSDI 82                    | 3A98 = XSDI 83  | EA40 = XSDI 82              | EA60 = XSDI 83  |
| 3AA0 = XSDI 84                    | 3AA8 = XSDI 85  | EA80 = XSDI 84              | EAA0 = XSDI 85  |
| 3AB0 = XSDI 86                    | 3AB8 = XSDI 87  | EAC0 = XSDI 86              | EAE0 = XSDI 87  |
| 3AC0 = XSDI 88                    | 3AC8 = XSDI 89  | EB00 = XSDI 88              | EB20 = XSDI 89  |
| 3AD0 = XSDI 90                    | 3AD8 = XSDI 91  | EB40 = XSDI 90              | EB60 = XSDI 91  |
| 3AE0 = XSDI 92                    | 3AD8 = XSDI 93  | EB80 = XSDI 92              | EBA0 = XSDI 93  |
| 3AF0 = XSDI 94                    | 3AF8 = XSDI 95  | EBC0 = XSDI 94              | EBE0 = XSDI 95  |
| 3B00 = XSDI 96                    | 3B08 = XSDI 97  | EC00 = XSDI 96              | EC20 = XSDI 97  |
| 3B10 = XSDI 98                    | 3B18 = XSDI 99  | EC40 = XSDI 98              | EC60 = XSDI 99  |
| 3B20 = XSDI 100                   | 3B28 = XSDI 101 | EC80 = XSDI 100             | ECA0 = XSDI 101 |
| 3B30 = XSDI 102                   | 3B38 = XSDI 103 | ECC0 = XSDI 102             | ECE0 = XSDI 103 |



## — continued —

| SL-1 NT, XT and Option 51, 61, 71 |                 | Option 51C, 61C, 81 and 81C |                 |
|-----------------------------------|-----------------|-----------------------------|-----------------|
| 3B40 = XSDI 104                   | 3B48 = XSDI 105 | ED00 = XSDI 104             | ED20 = XSDI 105 |
| 3B50 = XSDI 106                   | 3B58 = XSDI 107 | ED40 = XSDI 106             | ED60 = XSDI 107 |
| 3B60 = XSDI 108                   | 3B68 = XSDI 109 | ED80 = XSDI 108             | EDA0 = XSDI 109 |
| 3B70 = XSDI 110                   | 3B78 = XSDI 111 | EDC0 = XSDI 110             | EDE0 = XSDI 111 |
| 3B80 = XSDI 112                   | 3B88 = XSDI 113 | EE00 = XSDI 112             | EE20 = XSDI 113 |
| 3B90 = XSDI 114                   | 3B98 = XSDI 115 | EE40 = XSDI 114             | EE60 = XSDI 115 |
| 3BA0 = XSDI 116                   | 3BA8 = XSDI 117 | EE80 = XSDI 116             | EEA0 = XSDI 117 |
| 3BB0 = XSDI 118                   | 3BB8 = XSDI 119 | EEC0 = XSDI 118             | EEE0 = XSDI 119 |
| 3BC0 = XSDI 120                   | 3BC8 = XSDI 121 | EF00 = XSDI 120             | EF20 = XSDI 121 |
| 3BD0 = XSDI 122                   | 3BD8 = XSDI 123 | EF40 = XSDI 122             | EF60 = XSDI 123 |
| 3BE0 = XSDI 124                   | 3BD8 = XSDI 125 | EF80 = XSDI 124             | EFA0 = XSDI 125 |
| 3BF0 = XSDI 126                   | 3BF8 = XSDI 127 | EFC0 = XSDI 126             | EFE0 = XSDI 127 |
| 3C00 = XSDI 128                   | 3C08 = XSDI 129 | F000 = XSDI 128             | F020 = XSDI 129 |
| 3C10 = XSDI 130                   | 3C18 = XSDI 131 | F040 = XSDI 130             | F060 = XSDI 131 |
| 3C20 = XSDI 132                   | 3C28 = XSDI 133 | F080 = XSDI 132             | F0A0 = XSDI 133 |
| 3C30 = XSDI 134                   | 3C38 = XSDI 135 | F0C0 = XSDI 134             | F0E0 = XSDI 135 |
| 3C40 = XSDI 136                   | 3C48 = XSDI 137 | F100 = XSDI 136             | F120 = XSDI 137 |
| 3C50 = XSDI 138                   | 3C58 = XSDI 139 | F140 = XSDI 138             | F160 = XSDI 139 |
| 3C60 = XSDI 140                   | 3C68 = XSDI 141 | F180 = XSDI 140             | F1A0 = XSDI 141 |
| 3C70 = XSDI 142                   | 3C78 = XSDI 143 | F1C0 = XSDI 142             | F1E0 = XSDI 143 |
| 3C80 = XSDI 144                   | 3C88 = XSDI 145 | F200 = XSDI 144             | F220 = XSDI 145 |
| 3C90 = XSDI 146                   | 3C98 = XSDI 147 | F240 = XSDI 146             | F260 = XSDI 147 |
| 3CA0 = XSDI 148                   | 3CA8 = XSDI 149 | F280 = XSDI 148             | F2A0 = XSDI 149 |
| 3CB0 = XSDI 150                   | 3CB8 = XSDI 151 | F2C0 = XSDI 150             | F2E0 = XSDI 151 |
| 3CC0 = XSDI 152                   | 3CC8 = XSDI 153 | F300 = XSDI 152             | F320 = XSDI 153 |
| 3CD0 = XSDI 154                   | 3CD8 = XSDI 155 | F340 = XSDI 154             | F360 = XSDI 155 |
| 3CE0 = XSDI 156                   | 3CD8 = XSDI 157 | F380 = XSDI 156             | F3A0 = XSDI 157 |
| 3CF0 = XSDI 158                   | 3CF8 = XSDI 159 | F3C0 = XSDI 158             | F3E0 = XSDI 159 |

**0x3000 to 0x37FF**

MSDL card fault address.

**ACTION:** Follow the INI002 output code action.

**3FC8**

Tape or MSI card fault address.

**ACTION:** Follow the INI002 output code action.

**0x6008 to 0x63FD**

3PE card fault address.

**ACTION:** Refer to the INI002 output code.

**0x8000 to 0xA7C0**

NET, ENET, CONF, TDS, and XCT loop fault address.

For single network loops (QPC50 cards), dual or non-enhanced (QPC376 cards), bits 7 through 13 determine loop address.

For enhanced network loops, (QPC414 cards), bits 6 through 13 determine loop address.

**ACTION:** Refer to the following table to locate the faulty loop and follow the INI003 output code action.

| SL-1 NT, XT and Option 51, 61, 71 |                | Option 51C, 61C, 81 and 81C |                 |
|-----------------------------------|----------------|-----------------------------|-----------------|
| 8000 = loop 0                     | 8040 = loop 1  | 20000 = loop 0              | 20100 = loop 1  |
| 8080 = loop 2                     | 80C0 = loop 3  | 20200 = loop 2              | 20300 = loop 3  |
| 8100 = loop 4                     | 8140 = loop 5  | 20400 = loop 4              | 20500 = loop 5  |
| 8180 = loop 6                     | 81C0 = loop 7  | 20600 = loop 6              | 20700 = loop 7  |
| 8200 = loop 8                     | 8240 = loop 9  | 20800 = loop 8              | 20900 = loop 9  |
| 8280 = loop 10                    | 82C0 = loop 11 | 20A00 = loop 10             | 20B00 = loop 11 |
| 8300 = loop 12                    | 8340 = loop 13 | 20C00 = loop 12             | 20D00 = loop 12 |
| 8380 = loop 14                    | 83C0 = loop 15 | 20E00 = loop 13             | 20F00 = loop 15 |
| 8400 = loop 16                    | 8440 = loop 17 | 21000 = loop 16             | 21100 = loop 17 |
| 8480 = loop 18                    | 84C0 = loop 19 | 21200 = loop 18             | 21300 = loop 19 |
| 8500 = loop 20                    | 8540 = loop 21 | 21400 = loop 20             | 21500 = loop 21 |
| — continued —                     |                |                             |                 |
| SL-1 NT, XT and Option 51, 61, 71 |                | Option 51C, 61C, 81 and 81C |                 |

|                |                |                 |                  |
|----------------|----------------|-----------------|------------------|
| 8580 = loop 22 | 85C0 = loop 23 | 21600 = loop 22 | 21700 = loop 23  |
| 8600 = loop 24 | 8640 = loop 25 | 21800 = loop 24 | 21900 = loop 25  |
| 8680 = loop 26 | 86C0 = loop 27 | 21A00 = loop 26 | 21B00 = loop 27  |
| 8700 = loop 28 | 8740 = loop 29 | 21C00 = loop 28 | 21B00 = loop 29  |
| 8780 = loop 30 | 87C0 = loop 31 | 21E00 = loop 30 | 21F00 = loop 31  |
| 8800 = loop 32 | 8840 = loop 33 | 22000 = loop 32 | 22100 = loop 33  |
| 8880 = loop 34 | 88C0 = loop 35 | 22200 = loop 34 | 22300 = loop 35  |
| 8900 = loop 36 | 8940 = loop 37 | 22400 = loop 36 | 22500 = loop 37  |
| 8980 = loop 38 | 89C0 = loop 39 | 22600 = loop 38 | 22700 = loop 39  |
| 8A00 = loop 40 | 8A40 = loop 41 | 22800 = loop 40 | 22900 = loop 41  |
| 8A80 = loop 42 | 8AC0 = loop 43 | 22A00 = loop 42 | 22B00 = loop 43  |
| 8B00 = loop 44 | 8B40 = loop 45 | 22C00 = loop 44 | 22D00 = loop 45  |
| 8B80 = loop 46 | 8BC0 = loop 47 | 22E00 = loop 46 | 22F00 = loop 47  |
| 8C00 = loop 48 | 8C40 = loop 49 | 23000 = loop 48 | 23100 = loop 49  |
| 8C80 = loop 50 | 8CC0 = loop 51 | 23200 = loop 50 | 233300 = loop 51 |
| 8D00 = loop 52 | 8D40 = loop 53 | 23400 = loop 52 | 23500 = loop 53  |
| 8D80 = loop 54 | 8DC0 = loop 55 | 23600 = loop 54 | 23700 = loop 55  |
| 8E00 = loop 56 | 8E40 = loop 57 | 23800 = loop 56 | 23900 = loop 57  |
| 8E80 = loop 58 | 8EC0 = loop 59 | 23A00 = loop 58 | 23B00 = loop 59  |
| 8F00 = loop 60 | 8F40 = loop 61 | 23C00 = loop 60 | 23D00 = loop 61  |
| 8F80 = loop 62 | 8FC0 = loop 63 | 23E00 = loop 62 | 23F00 = loop 63  |
| 9000 = loop 64 | 9040 = loop 65 | 24000 = loop 64 | 24100 = loop 65  |
| 9080 = loop 66 | 90C0 = loop 67 | 24200 = loop 66 | 24300 = loop 67  |
| 9100 = loop 68 | 9140 = loop 69 | 24400 = loop 68 | 24500 = loop 69  |
| 9180 = loop 70 | 91C0 = loop 71 | 24600 = loop 70 | 24700 = loop 71  |
| 9200 = loop 72 | 9240 = loop 73 | 24800 = loop 72 | 24900 = loop 73  |
| 9280 = loop 74 | 92C0 = loop 75 | 24A00 = loop 74 | 24B00 = loop 75  |
| 9300 = loop 76 | 9340 = loop 77 | 24C00 = loop 76 | 24D00 = loop 77  |
| 9380 = loop 78 | 93C0 = loop 79 | 24E00 = loop 78 | 24F00 = loop 79  |

— continued —

| SL-1 NT, XT and Option 51, 61, 71 |                 |
|-----------------------------------|-----------------|
| 9400 = loop 80                    | 9440 = loop 81  |
| 9480 = loop 82                    | 94C0 = loop 83  |
| 9550 = loop 84                    | 9450 = loop 85  |
| 9580 = loop 86                    | 95C0 = loop 87  |
| 9600 = loop 88                    | 9640 = loop 89  |
| 9680 = loop 90                    | 96C0 = loop 91  |
| 9700 = loop 92                    | 9740 = loop 93  |
| 9780 = loop 94                    | 97C0 = loop 95  |
| 9800 = loop 96                    | 9840 = loop 97  |
| 9880 = loop 98                    | 98C0 = loop 99  |
| 9900 = loop 100                   | 9940 = loop 101 |
| 9980 = loop 102                   | 99C0 = loop 103 |
| 9A00 = loop 104                   | 9A40 = loop 105 |
| 9A80 = loop 106                   | 9AC0 = loop 107 |
| 9B00 = loop 108                   | 9B40 = loop 109 |
| 9B80 = loop 110                   | 9BC0 = loop 111 |
| 9C00 = loop 112                   | 9C40 = loop 113 |
| 9C80 = loop 114                   | 9CC0 = loop 115 |
| 9D00 = loop 116                   | 9D40 = loop 117 |

| Option 51C, 61C, 81 and 81C |                  |
|-----------------------------|------------------|
| 25000 = loop 80             | 25100 = loop 81  |
| 25200 = loop 82             | 25300 = loop 83  |
| 25400 = loop 84             | 25500 = loop 85  |
| 25600 = loop 86             | 25700 = loop 87  |
| 25800 = loop 88             | 2590 = loop 89   |
| 25A00 = loop 90             | 25B00 = loop 91  |
| 25C00 = loop 92             | 25D00 = loop 93  |
| 25E00 = loop 94             | 25F00 = loop 95  |
| 26000 = loop 96             | 26100 = loop 97  |
| 26200 = loop 98             | 26300 = loop 99  |
| 26400 = loop 100            | 26500 = loop 101 |
| 26600 = loop 102            | 26700 = loop 103 |
| 26800 = loop 104            | 26900 = loop 105 |
| 26A00 = loop 106            | 26B00 = loop 107 |
| 26C00 = loop 108            | 26D00 = loop 109 |
| 26E00 = loop 110            | 26F00 = loop 111 |
| 27000 = loop 112            | 27100 = loop 113 |
| 27200 = loop 114            | 27300 = loop 115 |
| 27400 = loop 116            | 27500 = loop 117 |

## INI — System Initialization

|                 |                 |                  |                  |
|-----------------|-----------------|------------------|------------------|
| 9D80 = loop 118 | 9DC0 = loop 119 | 27600 = loop 118 | 27700 = loop 119 |
| 9E00 = loop 120 | 9E40 = loop 121 | 27800 = loop 120 | 27900 = loop 121 |
| 9E80 = loop 122 | 9EC0 = loop 123 | 27A00 = loop 122 | 27B00 = loop 123 |
| 9F00 = loop 124 | 9F40 = loop 125 | 27C00 = loop 124 | 27D00 = loop 125 |
| 9F80 = loop 126 | 9FC0 = loop 127 | 27E00 = loop 126 | 27F00 = loop 127 |
| A000 = loop 128 | A040 = loop 129 | 28000 = loop 128 | 28100 = loop 129 |
| A080 = loop 130 | A0C0 = loop 131 | 28200 = loop 130 | 28300 = loop 131 |
| A100 = loop 132 | A140 = loop 133 | 28400 = loop 132 | 28500 = loop 133 |
| A180 = loop 134 | A1C0 = loop 135 | 28600 = loop 134 | 28700 = loop 135 |

— continued —

| SL-1 NT, XT and Option 51, 61, 71 |                 | Option 51C, 61C, 81 and 81C |                  |
|-----------------------------------|-----------------|-----------------------------|------------------|
| A200 = loop 136                   | A2C0 = loop 137 | 28800 = loop 136            | 28900 = loop 137 |
| A280 = loop 138                   | A2C0 = loop 139 | 28A00 = loop 138            | 28B00 = loop 139 |
| A300 = loop 140                   | A340 = loop 141 | 28C00 = loop 140            | 28D00 = loop 141 |
| A380 = loop 142                   | A3C0 = loop 143 | 28E00 = loop 142            | 28F00 = loop 143 |
| A400 = loop 144                   | A440 = loop 145 | 29000 = loop 144            | 29100 = loop 145 |
| A480 = loop 146                   | A4C0 = loop 147 | 29200 = loop 146            | 29300 = loop 147 |
| A500 = loop 148                   | A540 = loop 149 | 29400 = loop 148            | 29500 = loop 149 |
| A580 = loop 150                   | A5C0 = loop 151 | 29600 = loop 150            | 29700 = loop 151 |
| A600 = loop 152                   | A640 = loop 153 | 29800 = loop 152            | 29900 = loop 153 |
| A680 = loop 154                   | A6C0 = loop 155 | 29A00 = loop 154            | 29B00 = loop 155 |
| A700 = loop 156                   | A740 = loop 157 | 29C00 = loop 156            | 29D00 = loop 157 |
| A780 = loop 158                   | A7C0 = loop 159 | 29E00 = loop 158            | 29F00 = loop 159 |

### C000 to E2FF

PS and Clock Controller card fault address.

**ACTION:** Refer to the following table to locate the faulty card and follow the INI003 output code action.

**INI — System Initialization**

| SL-1 L, LE, VL,VLE, XL, M, MS, S, ST, N, XN and Option 21 |  | SL-1NT, XT and Option 51, 61, 71     |  |
|-----------------------------------------------------------|--|--------------------------------------|--|
| Fault Address                                             |  | Fault Address                        |  |
| C0xx = Peripheral Signaling card 0                        |  | C0C0xx = Peripheral Signaling card 0 |  |
| C2xx = Peripheral Signaling card 1                        |  | C0C2xx = Peripheral Signaling card 1 |  |
| C4xx = Peripheral Signaling card 2                        |  | C0C4xx = Peripheral Signaling card 2 |  |
| C6xx = Peripheral Signaling card 3                        |  | C0C6xx = Peripheral Signaling card 3 |  |
| C8xx = Peripheral Signaling card 4                        |  | C0C8xx = Peripheral Signaling card 4 |  |
| CAxx = Peripheral Signaling card 5                        |  | C0CAxx = Peripheral Signaling card 5 |  |
| CCxx = Peripheral Signaling card 6                        |  | C0CCxx = Peripheral Signaling card 6 |  |
| — continued —                                             |  |                                      |  |

## INI — System Initialization

| SL-1 L, LE, VL,VLE, XL, M, MS, S, ST, N, XN and Option 21 |  | SL-1NT, XT and Option 61, 71          |  |
|-----------------------------------------------------------|--|---------------------------------------|--|
| Fault Address                                             |  | Fault Address                         |  |
| CExx = Peripheral Signaling card 7                        |  | C0CExx = Peripheral Signaling card 7  |  |
| D0xx = Peripheral Signaling card 8                        |  | C0D0xx = Peripheral Signaling card 8  |  |
| D2xx = Peripheral Signaling card 9                        |  | C0D2xx = Peripheral Signaling card 9  |  |
| D4xx = Peripheral Signaling card 10                       |  | C0D4xx = Peripheral Signaling card 10 |  |
| D6xx = Peripheral Signaling card 11                       |  | C0D6xx = Peripheral Signaling card 11 |  |
| D8xx = Peripheral Signaling card 12                       |  | C0D8xx = Peripheral Signaling card 12 |  |
| DAxx = Peripheral Signaling card 13                       |  | C0DAxx = Peripheral Signaling card 13 |  |
| DCxx = Peripheral Signaling card 14                       |  | C0ACxx = Peripheral Signaling card 14 |  |
| DExx = Peripheral Signaling card 15                       |  | C0DExx = Peripheral Signaling card 15 |  |
| E0xx = Clock Controller card 0                            |  | C0E0xx = Clock Controller card 0      |  |
| E2xx = Clock Controller card 1                            |  | C0E2xx = Clock Controller card 1      |  |



INI

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## **INI – System Initialization**

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INI



## IOD — LD 37 Input/Output Diagnostic

|                                                       |     |
|-------------------------------------------------------|-----|
| How the IOD works . . . . .                           | 700 |
| SDI — Serial Data Interface . . . . .                 | 701 |
| TTY/PRT commands . . . . .                            | 702 |
| Mass storage system . . . . .                         | 703 |
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| FDU — Floppy Disk Unit . . . . .                      | 705 |
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| Disk commands verses tape commands . . . . .          | 718 |
| MSI status. . . . .                                   | 720 |
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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter of this guide.

## How the IOD works

LD 37 is used to diagnose faults with disk units, tape units, Teletypewriter (TTY) or Serial Data Interface (SDI) cards. It provides enable, disable, status and test functions on these devices. Problems are indicated by IOD messages.

When LD 37 is defined as a daily routine, the overlay runs only once every five days. And the primary storage device (disk or tape) is thoroughly tested (equivalent to command MSI 0 or TAPE 0).

Only some of the commands in this overlay are supported by Options 51C/61C/81. For these systems, use the MSI commands in LD 137.

Refer to Link Diagnostic (LD 48) for I/O ports used with the following applications:

- ◆ Command and Status Links (CSL)
- ◆ Meridian Link
- ◆ Automatic Call Distribution (ACD)
- ◆ Integrated System Messaging Link
- ◆ Enhanced Serial Data Interface (ESDI) ports

## SDI — Serial Data Interface



553-0189T SDI(IOD)

All Meridian SL-1 systems can support up to 16 serial data interface devices that utilize the American Standard Code for Information Interchange (ASCII) characters.

Up to three dual port SDI paddleboards can be installed on the rear backplane of each Option 21 CE/PE module, and up to two SDI paddleboards can be installed on the rear backplane of each Option 61 CPU/NET module.

### Purpose

The SDI provides EIA Data Interchange Standard RS-232-C interface between the CPU and Data Terminal Equipment (DTE), Data Communication Equipment (DCE), and an Applications Processor Link (APL). Older SDI cards, up to and including the QPC139 card can also support teletypes or printers requiring 20 mA loop current.

### Function

Serial data from the external equipment is converted to parallel data and driven onto the CE or control bus for the CPU, or vice versa.

### Features

The faceplate includes the following:

- ◆ an ENB, DIS switch to hardware enable or disable the card
- ◆ a LED, when lit indicating a disabled card
- ◆ two DB 25 sub-miniature connectors; port 1 is labeled as J3 and port 2 is labeled as J4

The component side of the card contains the following switches and plugs:

**Address Selection Switches** — selects which pair of devices, 0 and 1 to 14 and 15, are to be addressed as ports 1 and 2

**Speed Switches** — matches the port baud speed to that of the connected device

**Socket Plugs** — matches the card function to three types of connecting devices as follows:

- ◆ Modem or DCE — used as an interface between a digital terminal and the analog transmission facilities of the public exchange network.
- ◆ EIA RS 232 Data Terminal or DTE — a device that requires an exchange of predetermined signals to provide control, called handshaking. This exchange between the SL-1 and the device must take place before information can be passed.
- ◆ Teletype terminal or TTY — a non-handshaking 20 mA current loop device. The SDI card provides the current.

| TTY/PRT commands         |                                                                                                                                                                                                                                                       |         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                  | Description                                                                                                                                                                                                                                           | Release |
| <b>Stat all</b>          |                                                                                                                                                                                                                                                       |         |
| <b>STAT</b>              | Provide status of all input/output devices in system.                                                                                                                                                                                                 | basic-1 |
| <b>Status of TTY/PTR</b> |                                                                                                                                                                                                                                                       |         |
| <b>STAT TTY x</b>        | Provide status of TTY x.<br><br>With X11 Release 19 and later, this command also provides the status of the primary PMSI port.<br><br><b>FAULTY HW: NO RESPONSE</b> = SDI device identified as faulty by the SRIP function. Refer to the FHW chapter. | basic-1 |
| <b>STAT TTY</b>          | Provide status of all TTY devices in system.<br><br>With X11 Release 19 and later, this command enables you to get the status of the primary PMSI I/O port, and the Single Terminal Access (STA) administration terminal.                             | basic-1 |
| <b>STAT PRT</b>          | Provide status of all printers in system.                                                                                                                                                                                                             | basic-1 |
| <b>STAT PRT x</b>        | Provide status of printer x.                                                                                                                                                                                                                          | basic-1 |

**TTY/PRT commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Disable TTY/PRT**

|                  |                    |         |
|------------------|--------------------|---------|
| <b>DIS TTY x</b> | Disable TTY x.     | basic-1 |
| <b>DIS PRT X</b> | Disable printer x. | basic-1 |

**Enable TTY/PRT**

|                  |                   |         |
|------------------|-------------------|---------|
| <b>ENL TTY x</b> | Enable TTY x.     | basic-1 |
| <b>ENL PRT X</b> | Enable printer x. | basic-1 |

**Test TTY/PRT**

|              |             |         |
|--------------|-------------|---------|
| <b>TTY x</b> | Test TTY x. | basic-1 |
|--------------|-------------|---------|

Response is:

**ABCDEFGHIJKLMNOPQRSTUVWXYZ  
0123456789"#\$%\*!&()<>—.:,.? READY  
FOR INPUT**

Anything entered on the keyboard will be echoed until END is input.

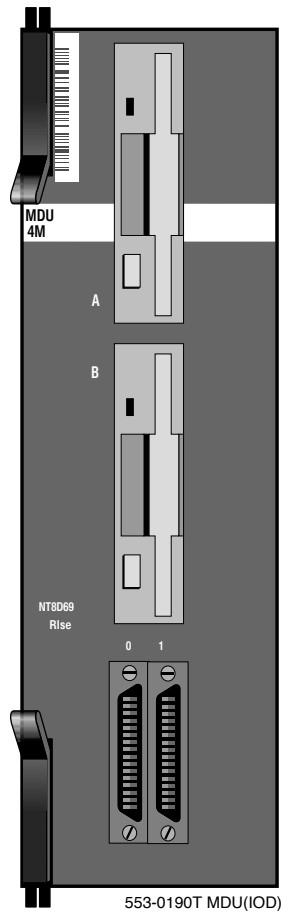
**Test TTY/PRT**

|              |                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRT x</b> | Test printer x.<br><br>Same as TTY test except that no keyboard input is expected and END command is not required.<br><br>The following symbol is printed * denoting that the printer is not yet available. |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Mass storage system**

The mass storage system is used as the nonvolatile storage medium and consists of two 3.5 inch floppy disk drives, a mass storage interface card, and a hard disk drive (optional).

## MDU — Multi Disk Unit



### Purpose

The Multi Disk Unit (MDU) is used to load the programs and programmable data into the system memory.

### Function

Provides a nonvolatile store of resident programs and data for automatic loading in case the system memory is erased due to a power or control failure. The MDU or FDU can be used on Option 61 and 71. The MDU is mandatory when Option 71 or SL-1 XT is equipped with Release 16 and later software.

### Features

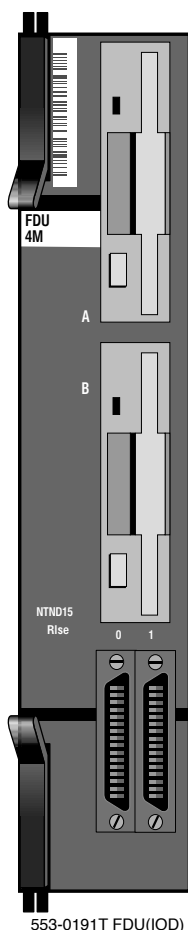
The MDU has the following features:

- ◆ two 3.5-inch floppy drive units, labeled "A" and "B", each with a LED, which when lit indicate that the diskette is rotating. Each disk has a formatted capacity of 1.44 mega-bytes
- ◆ a 3.5-inch hard drive unit, labeled "C", with a capacity of 20 mega-bytes
- ◆ a QPC584 Mass Storage Interface card, which controls the MDU
- ◆ occupies three adjacent card slots in the CPU, CPU/NET, or Network module and requires 5V and 12V from this module backplane

The MDU can be connected to one or two MSI cards as required.

Do not turn off the power when the drives are active, as this could corrupt data.

## FDU — Floppy Disk Unit



### Purpose

The Floppy Disk Unit (FDU) is used to load the programs and programmable data into the system memory.

### Function

Provides a nonvolatile store of resident programs and data for automatic loading in case the system memory is erased due to a power or control failure. The FDU is used with Options 21, 61, 71, and can be retrofitted to the Meridian SL-1XT, NT, ST.

### Features

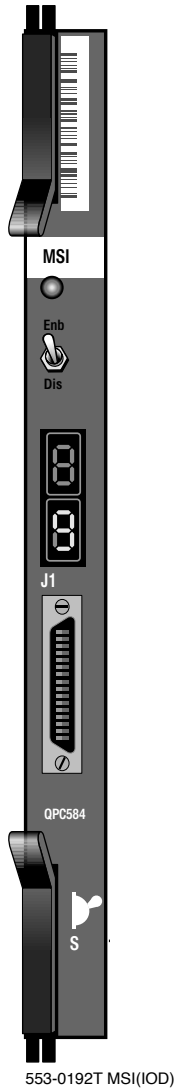
The FDU has the following features:

- ◆ two 3.5-inch floppy drive units, with same features as the MDU floppy
- ◆ is controlled by the QPC742 Floppy Disk Interface card
- ◆ is powered through the cable connecting it to the FDI card
- ◆ occupies two adjacent card slots in the CUP, Network, or PE module
- ◆ can be connected to one or two FDI cards as required

Do not turn off the power when the drives are active, as this could corrupt data

553-0191T FDU(IOD)

## MSI — Mass Storage Interface



553-0192T MSI(IOD)

### Purpose

Used to interface the Mass Storage Unit, a Serial Device, to the CPU, a Parallel Device.

### Function

The MSI card provides address matching, disk drive control, data buffering, and interrupt control circuits.

### Features

The faceplate includes the following features:

- ◆ a LED when lit indicating a disabled MSI card
- ◆ an ENB, DIS switch to hardware enable or disable the card
- ◆ two display modules, to indicate MSU faults or operation
- ◆ a 50 pin connector used to interconnect the MSI card to the mass storage unit

A switch on the component side of the card is used to address the hard disk when optioned.

A Security Data cartridge is inserted into jack J2 on the component side of the MSI card. Only one cartridge is issued for each MSI card installed in a Meridian 1.

**Data Cartridge** - The cartridge allows the system to load only those optional programs purchased by the user or owner of the system. Each cartridge carries an identification number and is unique to a particular Meridian 1. If the identification number on the cartridge does not match that of the floppy disks, the system will not load. - If the cartridge fails during operation, the system will still process calls, however the system will not load programs stored on disks into memory.



## MSI faceplate hex codes

The Mass Storage Interface (MSI) card is located on the CPU shelf of systems equipped with disk drives. *Display definition* applies to QPC584E and earlier versions. If the faceplate cable is disconnected, the MSI displays AF for about seven seconds then flashes 55 followed by 10, the idle state. IOD050 and OVL005 messages are output.

The meaning of the code depends on whether the display is alternating, counting, flashing or steady.

### Display is alternating

#### Ax

The MSI is reading disk records.

**ACTION:** For information only, no action required.

### Display is counting

#### 00-50

During the restore command in LD 43, the MSI display counts from 0 to 32 hex as the floppies are being copied to hard disk. Each count corresponds to a block of data being transferred. It also counts down when a second copy of the floppy is made on the hard disk.

**ACTION:** For information only, no action required.

#### 55-00

During the running of LD 37 I/O diagnostic commands:

On **MSI 0** command, the display shows a pattern counting down from 55 to 00 on two separate occasions. Each count occurs in approximately 1 second intervals. This simulates the fast forward and reverse tape motion which takes about 85 seconds each.

**ACTION:** For information only, no action required.

On **MSI RW 0** command, after the A1-AF pattern indicating records are being read, there is an occasional '8B' indicating that records are being written. When writing to a floppy with the write/protect tab on, the display flashes 97 and IOD075 is output.

**ACTION:** If appropriate remove write/prot Display is flashing.

**00**

Hard disk or floppy disk is not formatted (QPC584A to D). For QPC584E or later, 00 indicates that information is missing from the disk.

**ACTION:** Try another set of disks. If the problem still occurs, replace the hard drive following the steps in the *Hardware replacement* guide.

**01**

No Index/Sector signal (hardware/disk error).

**ACTION:** Try another set of disks. If the problem still occurs, replace the hard drive following the steps in the *Hardware replacement* guide.

**02**

No seek complete on the floppy disk (hardware data/disk error).

**ACTION:** Try another set of disks. If the problem still occurs replace the hard drive following the steps in the *Hardware replacement* guide.

**03**

Write fault.

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

**04**

Addressed disk drive is not ready.

**ACTION:** Check that the floppy disks are in place and that they are properly seated. Be sure that the floppy disks are not upside down or backwards in their drives.

**05**

Addressed disk drive is not selected.

**ACTION:** Check that the drive is present and the cables to the controller are correct. If the MSU has just been powered on, the MSI must be initialized. This is done by turning the MSI switch from ENL to DIS and back to ENL.

**06**

No Track Zero found (hardware error).

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

**07**

Multiple Drives selected (hardware error).

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

**0D**

A command is still executing and a new command is issued.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

**10**

Check Sum Error (hardware/medium error).

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

**11**

Read Error (medium error).

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

**12**

No address mark found in ID field on disk (medium error).

**ACTION:** Try another set of disks, if the problem still occurs, replace the hard drive following the steps in the *Hardware replacement* guide.

**13**

No address mark found in data field on disk (medium error).

**ACTION:** Try another set of disks, if the problem still occurs, replace the hard drive following the steps in the *Hardware replacement* guide.

**14**

No record found (disks) (medium error).

**ACTION:** Try another set of disks, if the problem still occurs, replace the hard drive following the steps in the *Hardware replacement* guide.

**15**

Seek error (hardware error).

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

**17**

Attempting to write to a write-protected disk.

**ACTION:** Close the sliding write/protect tab on the disk, to unwrite protect.

**1A**

Too many parameters (illegal request).

**ACTION:** Contact your technical support group.

**20**

Invalid Command (illegal request).

**ACTION:** Contact your technical support group.

**21**

Illegal parameters were sent to the controller. For QPC584E; 21 indicates invalid address on disk.

**ACTION:** Contact your technical support group.

**22**

Switching from hard disk to floppy disk for n

**ACTION:** For information only, no action required.

**23**

Disk capacity overflow (illegal request).

**ACTION:** Contact your technical support group.

**24**

Illegal field in command (illegal request).

**ACTION:** Contact your technical support group.

**25**

Invalid drive selection (illegal request).

**ACTION:** Contact your technical support group.

**26**

Invalid field in parameter list (illegal request).

**ACTION:** Contact your technical support group.

**27**

Write protected (also see 97).

**ACTION:** Switch the notch from the write protect to unwrite protect on the disk.

## 28

Disk changed.

**ACTION:** Information only, no action required.

## 29

Power on reset occurred.

**ACTION:** Information only, no action required.

## 2A

Drive parameters changed.

**ACTION:** Information only, no action required.

## 2B

Floppy disk controller error.

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

## 31

Drive format is corrupted (medium error).

**ACTION:** Try another set of disks, if the problem still occurs replace the hard drive following the steps in the *Hardware replacement* guide.

## 33

Switching from floppy disk to hard disk for normal operation.

**ACTION:** Information only, no action required.

## 40

RAM failure (hardware error).

**ACTION:** Contact your technical support group.

## 41

ECC diagnostic failure (hardware error).

**ACTION:** Contact your technical support group.

## 42

Power on failure (hardware error).

**ACTION:** Contact your technical support group.

## 43

Message rejected.

**ACTION:** Contact your technical support group.

**44**

Sanity timer is active; extraordinary situation.

**ACTION:** Contact your technical support group.

**45**

Drive select failed (hardware error).

**ACTION:** Replace the hard drive following the steps in the *Hardware replacement* guide.

**47**

Parity error.

**ACTION:** Contact your technical support group.

**48**

Initiator detected error.

**ACTION:** Contact your technical support group.

**49**

Illegal message.

**ACTION:** Contact your technical support group.

**55**

The MSU or CPU not responding. The MSU may have no power. 55 also occurs if the CPU does not respond to the MSI after giving it a command.

**ACTION:** Check the MSI to MSU cable.

**90**

Configuration error.

**ACTION:** Contact your technical support group.

**91**

Uncorrectable error in data field of diskette.

**ACTION:** Replace the floppy disk that was being accessed when the error occurred with a backup floppy disk.

**92**

Controller did not detect the address mark in the Identification (ID) field.

**ACTION:** Contact your technical support group.

**94**

Controller could not find the requested record.

**ACTION:** Contact your technical support group.

**95**

Seek error. The Controller could not find the specified track.

**ACTION:** Contact your technical support group.

**97**

Attempting to write on a write-protected disk. Floppy disk B has a write-protect tab.

**ACTION:** Switch the notch from the write protect to unwrite protect on the disk.

**BA**

Write error.

**ACTION:** Replace the floppy disk that was being accessed when the error occurred with a backup floppy disk.

**BC**

A diskette write error occurred during the write of a record.

**ACTION:** Replace the floppy disk that was being accessed when the error occurred with a backup floppy disk.

**BD**

Logical Record Count (LRC) mismatch during disk write. The LRC calculated by the MSI does not agree with the LRC sent by the system.

**ACTION:** Contact your technical support group.

**BE**

Record Number (RN) mismatch during disk write. The current RN in the MSI does not agree with the RN sent by the system.

**ACTION:** Contact your technical support group.

**BF**

Illegal Record Type (RT) during disk write. The record requested by SL-1 to be written onto diskette is neither a configuration record (RT8) nor data record (RT7).

**ACTION:** Contact your technical support group.

**CA**

Beginning to copy data from floppy disk B to hard disk.

**ACTION:** For information only, no action required.

**CC**

Copy (restore) from floppy disk to hard disk is complete.

**ACTION:** For information only, no action required.

**CD**

Hard disk has been positioned to shipping zone.

**ACTION:** Contact your technical support group.

**D0**

Attempting to do a backup when there are no data records on the hard disk. Do a datadump to the hard disk before doing the backup to the floppy disks.

**ACTION:** Perform a (RES) command to restore LD 43 to the hard drive.

**D1**

Attempting to do a data base backup when MSI switch settings have not been set for operation from a hard disk.

**ACTION:** Put position 4 of S3 ON

**D6**

Read error of hard disk private sector.

**ACTION:** Contact your technical support group.

**DD**

Datadump (backup) to floppy disk B is beginning.

**ACTION:** Information only, no action required.

**DC**

Datadump (backup) to floppy disk is complete.

**ACTION:** Information only, no action required.

**E1**

Cartridge time-out because MSI data cartridge is not present.

**ACTION:** Install a data cartridge.



**E2**

Illegal MSI data cartridge.

**ACTION:** Check that the data cartridge is properly installed (proper orientation with all pins inserted), or replace the data cartridge.

**E3**

Disk ID on floppy does not match ID in data cartridge.

**ACTION:** Replace the floppy disk or cartridge.

**E4**

Mismatch in System Version Number (SVN). SVN on disk does not match SVN in MSI data cartridge.

**ACTION:** Replace the floppy disks or cartridge. SVN indicates the SL-1 machine type, for example the SVN for SL-1 XN is 911.

**E5**

Mismatch in System Issue Number (SIN). SIN release number on disk does not match SIN release number in MSI data cartridge. SIN consists of two parts: a release number and an issue number. The release number is the most significant (decimal) digit of the SIN and the issue number is the least two significant digits. For example, a SIN of 855 means a release number of 8 and an issue number of 55. The MSI only compares the release portion of the SIN.

**ACTION:** Replace the floppy disks or data cartridge.

**E6**

Diskette read error encountered during attempted read of the private sector.

**ACTION:** Check that the floppy disk is present.

**E7**

Diskette write error encountered during attempted write to the private sector.

**ACTION:** Check that the write-protect tab has been removed from the floppy disk in drive B.

**E8**

Illegal attempt to write onto floppy disk A.

**ACTION:** This is not allowed.

**E9**

Illegal attempt to write to track 1 or track 2 space on the hard disk.  
This is not allowed.

**ACTION:** Contact your technical support group.

**EA**

Illegal value was written into track register. The value written was not 1, 2, 4 or 8.

**ACTION:** Contact your technical support group.

**EC**

Conversion error in computing logical sector number for hard disk.

**ACTION:** Contact your technical support group.

**EE**

Maximum record number was exceeded during a database write to disk.

**ACTION:** Contact your technical support group.

**FA**

Fault in floppy drive A. Self-test failed.

**ACTION:** Check the cabling to drive A, and check the drive DIP switches or replace the drive.

**FB**

Fault in floppy drive B. Self-test failed. If code 97 was displayed before FB, the write-protect tab is in place and the write test could not be completed.

**ACTION:** Remove the tab on floppy disk B. Check the cabling to drive B, check the drive DIP switches or replace the drive.

**FC**

Fault in hard disk drive C. Self-test failed.

**ACTION:** Check the cabling to drive C, also check the drive DIP switches or replace the drive.

**FD**

Wrong floppy disks in drives.

**ACTION:** Insert Floppy disk A in drive A and floppy disk B in drive B.

## **FE**

Read error.

**ACTION:** Contact your technical support group.

## **FF**

Floppy disk is in the wrong drive. Floppy disk A is in drive B and floppy disk B is in drive A. Drive A must contain a Track 1 floppy, Drive B a Track 3 floppy.

**ACTION:** Insert Floppy disk A in drive A and floppy disk B in drive B.

## **Display is steady**

### **00**

Mass Storage Interface (MSI) power-up completed.

**ACTION:** For information only, no action required.

### **10**

Mass Storage Interface (MSI) in idle state.

**ACTION:** For information only, no action required.

### **2F**

Unknown command from CPU.

**ACTION:** Contact your technical support group.

## **81-8F**

Codes **81** to **8F** indicate the MSI is simulating tape functions.

**81**Slow forward with Inter-record Gap (IRG)

**82**Slow reverse with Inter-record Gap (IRG)

**83**Fast forward with Inter-record Gap (IRG)

**84**Fast reverse with Inter-record Gap (IRG)

**85**Rewind

**89**Set timer (to a maximum of 64 ms)

**8A**Read disk

**8B**Write disk

**8C**Diagnostic write

**8D**Diagnostic fast forward

**8E**Diagnostic fast reverse

**8F**Unrecognized command

**ACTION:** For information only, no action required.

## A1

MSI has completed reading a record from disk and is transferring the data to the CPU.

**ACTION:** For information only, no action required.

## A2

MSI has completed writing a record from its write buffer onto a diskette.

**ACTION:** For information only, no action required.

## AD

During restore and backup for hard disk, the MSI is waiting for the disk controller to indicate that it has completed execution of the command.

**ACTION:** For information only, no action required.

## AE

MSI has sent a status request to the Disk Controller.

**ACTION:** For information only, no action required.

## AF

MSI has issued a command to the Disk Controller.

**ACTION:** For information only, no action required.

## C2

Copying track 1 to track 2 on hard disk.

**ACTION:** For information only, no action required.

## C4

Copying track 3 to track 4 on hard disk.

**ACTION:** For information only, no action required.

## Disk commands verses tape commands

The various MSI (Mass Storage Interface) commands are not supported on Generic X37 and Generic X08 (prior to Release 12) software and if they are equipped with disk drives, the corresponding TAPE command should be used when testing the MSI as follows:

Disk command = Tape command

DIS MSI x=DIS TAPE x  
 ENL MSI x=ENL TAPE x  
 MSI DATA=TAPE DATA  
 MSI x=TAPE x  
 MSI RW x=TAPE RW x  
 MSI SELF x=TAPE CTRL x  
 STAT MSI=STAT TAPE  
 STAT MSI x=STAT TAPE x

Use of the TAPE x or TAPE MOTN x commands on a system equipped with disk drives will result in an IOD075 message. This message should be disregarded.

If LD 37 is run as part of the daily routines, an IOD075 message will be output on systems equipped with disk drives. This message should be disregarded.

# IOD

## 720 LD 37 Input/Output Diagnostic

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| MSI status          |                                                                                  |         |
|---------------------|----------------------------------------------------------------------------------|---------|
| Command             | Description                                                                      | Release |
| <b>STAT</b>         | Provide status of all input/output devices in system.                            | basic-1 |
| <b>STAT MSI</b>     | Provide status of all MSI cards.                                                 | basic-1 |
| <b>STAT MSI x</b>   | Provide status of MSI card associated with the active CPU.                       | basic-1 |
| <b>STAT TAPE</b>    | Provide status of all magnetic tape devices.                                     | basic-1 |
| Disable MSI         |                                                                                  |         |
| <b>DIS MSI x</b>    | Disable Mass Storage Interface card x.                                           | basic-1 |
| <b>DIS TAPE x</b>   | Disable tape unit x.                                                             | basic-1 |
| Enable MSI          |                                                                                  |         |
| <b>ENL MSI x</b>    | Enable Mass Storage Interface card x.                                            | basic-1 |
| <b>ENL TAPE X</b>   | Enable tape unit x.                                                              | basic-1 |
| Test MSI            |                                                                                  |         |
| <b>TAPE CTRL x</b>  | Test control electronics on tape device x.                                       | basic-1 |
| <b>TAPE DATA</b>    | Test data on all 4 tracks.                                                       | basic-1 |
| <b>TAPE MOTN x</b>  | Test motion and timing on tape device x.                                         | basic-1 |
| <b>TAPE RW x</b>    | Test READ/WRITE ability of tape device x.                                        | basic-1 |
| <b>TAPE x</b>       | Test magnetic tape device x.                                                     | basic-1 |
| <b>MSI DATA</b>     | Test data validity in primary and backup device.                                 | basic-1 |
| <b>MSI RW x</b>     | Test READ/WRITE ability of Mass Storage unit x.                                  | basic-1 |
| <b>MSI SELF x</b>   | Perform self-test on MSI card and report result.                                 | basic-1 |
| <b>MSI x</b>        | Test Mass Storage unit x.<br>This commands runs the MSI DATA, RW and SELF tests. | basic-1 |
| Status of CDR Links |                                                                                  |         |
| <b>STAT LINK</b>    | Provide status of all CDR links.                                                 | basic-1 |
| <b>STAT LINK x</b>  | Provide status of CDR data link x.                                               | basic-1 |

## FDI — Floppy Disk Interface



553-0193T FDI(IOD)

### Purpose

The Floppy Disk Interface (FDI) card is used to interface the floppy disk unit, a serial device, to the CPU, a parallel device.

### Function

The FDI card provides address matching, disk drive control, data buffering, and interrupt control circuits.

### Features

The FDI card faceplate includes the following:

- ◆ a LED, when lit indicating a disabled FDI card
- ◆ an ENB/DIS switch to hardware enable or disable the card
- ◆ two display modules, to indicate FDU faults or operation
- ◆ a 50 pin connector used to interconnect the FDI card to the mass storage unit

A switch on the component side of the card is used to address the hard disk when optioned.

A Security Data cartridge is inserted into jack J2 on the component side of the FDI card. Only one cartridge is issued for each FDI card installed in a Meridian 1.

**Data cartridge** The cartridge allows the system to load only those optional programs purchased by the user or owner of the system. Each cartridge carries an identification number and is unique to a particular Meridian 1. If the identification number on the cartridge does not match that of the floppy disks, the system will not load. - If the cartridge fails during operation, the system will still process calls, however the system will not load programs stored on disks into memory.

## FDI faceplate hex codes

The codes listed in the following section appear on the Floppy Disk Interface (FDI) circuit card located on the CPU shelf of systems equipped with disk drives.

The meaning of the code depends on whether the display is alternating, counting, flashing or steady.

### Display is alternating

#### A1-70

FDI is reading disk records.

**ACTION:** For information only, no action required.

### Display is counting

#### 55-00

Display counts down in hexadecimal from 55 to 00 in approximately 1 second intervals. This display will run through two cycles. This is to simulate fast-forward and fast-reverse tape motion during diagnostics.

**ACTION:** For information only, no action required.

### Display is flashing

#### 44

Sanity timer has timed out. Extraordinary situation.

**ACTION:** Contact your technical support group.

#### 55

Floppy Disk Unit (FDU) or CPU not responding. The FDU may have no power. This message is also displayed if the CPU does not respond to the FDI after giving it a command.

**ACTION:** Check the FDI to FDU cable.

#### 60

Missing address mark. The Floppy Disk Controller (FDC) cannot detect the ID address mark after encountering the index hole twice.

**ACTION:** Check the cable or replace the diskette (disk error).



**61**

Not writable. The Floppy Disk Controller (FDC) has detected a write protect signal from the addressed drive.

**ACTION:** Remove the write protect tab on floppy disk B and try again.

**62**

No data. Floppy Disk Controller (FDC) cannot find the sector specified (disk error).

**ACTION:** Contact your technical support group.

**63**

Overrun. Floppy Disk Controller (FDC) is not being serviced fast enough by the CPU (FDC/hardware error).

**ACTION:** Contact your technical support group.

**64**

Data error. A checksum error in the ID field or the data field was detected (disk error).

**ACTION:** Contact your technical support group.

**65**

End of cylinder. An attempt has been made to access beyond the final sector of a cylinder (FDC/hardware error).

**ACTION:** Contact your technical support group.

**66**

Missing address mark in data field. In conjunction with (60), this specifies the missing address mark to have occurred in a data field (disk error).

**ACTION:** Contact your technical support group.

**67**

Bad cylinder. The cylinder address as read from the disk does not match the cylinder address loaded into the Floppy Disk Controller (FDC), and the disk cylinder address equals FFH (FDC/hardware error).

**ACTION:** Contact your technical support group.

**68**

Wrong cylinder. The cylinder address as read from the disk does not match the cylinder address loaded into the Floppy Disk (FDC) (FDC/hardware error).

**ACTION:** Contact your technical support group.

**69**

Data error in data field. A checksum error was detected in the data field (disk error).

**ACTION:** Contact your technical support group.

**6A**

Control mark. A sector with a deleted data address mark was encountered (disk error).

**ACTION:** Contact your technical support group.

**72**

Abnormal termination. Command execution started but not be successfully completed.

**ACTION:** Contact your technical support group.

**74**

Interrupt module error. An error was detected during execution of interrupt module.

**ACTION:** Contact your technical support group.

**75**

Read2s module error.

**ACTION:** Contact your technical support group.

**76**

Write2s module error.

**ACTION:** Contact your technical support group.

**77**

Initctrl module error.

**ACTION:** Contact your technical support group.

## 78

Command interface error. Incorrect hand shaking between Floppy Disk Controller (FDC) and CPU during attempt to load command block.

**ACTION:** Contact your technical support group.

## 79

Result interface error. Incorrect handshaking between Floppy Disk Controller (FDC) and CPU during attempt to read result bytes.

**ACTION:** Contact your technical support group.

## 7A

RXRSLT module error.

**ACTION:** Contact your technical support group.

## 7C

Addressed drive not ready.

**ACTION:** Contact your technical support group.

## 7D

Invalid hard disk operation attempted.

**ACTION:** Contact your technical support group.

## 7E

Logical sector number out-of-range.

**ACTION:** Contact your technical support group.

## BA

Write error.

**ACTION:** Contact your technical support group.

## BC

A disk write error occurred during the write of a tape record.

**ACTION:** Contact your technical support group.

## BD

Checksum mismatch during disk write. The checksum calculated by the MSI does not agree with the checksum sent by the system.

**ACTION:** Contact your technical support group.

**BE**

Record Number (RN) mismatch during disk write. The current RN in the MSI does not agree with the RN sent by the system.

**ACTION:** Contact your technical support group.

**BF**

System has requested that a record be written to a disk. The record is neither a configuration record nor a data record.

**ACTION:** Contact your technical support group.

**E1**

Cartridge timeout because MSI data cartridge is not present.

**ACTION:** Install a data cartridge.

**E2**

Illegal MSI data cartridge.

**ACTION:** Check that the data cartridge is properly installed (proper orientation with all pins inserted), or replace data cartridge.

**E3**

Disk ID on floppy disk does not match disk ID in data cartridge

**ACTION:** Replace the floppy disks or data cartridge.

**E4**

Mismatch in System Version Number (SVN). SVN on disk does not match SVN in MSI data cartridge.

**ACTION:** Replace the floppy disks or data cartridge.

**E5**

Mismatch in System Issue Number (SIN). SIN release number on disk does not match SIN release number in MSI data cartridge.

**ACTION:** Replace the floppy disks or data cartridge.

**E6**

Diskette read error encountered during attempted read of the private sector.

**ACTION:** Check that the floppy disk is present.

## **E7**

Diskette write error encountered during attempted write to the private sector.

**ACTION:** Check that the write-protect tab has been removed from the floppy disk in drive B.

## **E8**

Illegal attempt to write onto floppy disk A. This process is not allowed.

**ACTION:** Check that the proper floppy disk is present.

## **EA**

Illegal value was written into track register. The value written was not 1, 2, 4 or 8.

**ACTION:** Contact your technical support group.

## **EE**

Maximum record number was exceeded during database write to disk

**ACTION:** Contact your technical support group.

## **FA**

Fault in floppy drive A. Self-test failed.

**ACTION:** Check the cabling to drive A or replace the drive.

## **FB**

Fault in floppy drive B. Self-test failed. If code 61 was displayed before FB, the write-protect tab is in place and the write test could not be completed.

**ACTION:** Remove the write/protect tab on floppy disk B. Check cabling to drive B or replace the drive.

## **FD**

Wrong floppy disks in drives.

**ACTION:** Insert disks in the proper drives.

## **FE**

Read error.

**ACTION:** Contact your technical support group.

## FF

Floppy disk is in the wrong drive. Floppy disk A is in drive B and floppy disk B is in drive A.

**ACTION:** Insert disks in the proper drives.

## Display is steady

### 00

Floppy Disk Interface (FDI) power-up completed.

**ACTION:** For information only, no action required.

### 10

Floppy Disk Interface (FDI) in idle state.

**ACTION:** For information only, no action required.

### 2F

Unknown command from CPU.

**ACTION:** Contact your technical support group.

### 70

1. Invalid command. Floppy Disk Controller (FDC) has received an unrecognizable command.

**ACTION:** Ensure that this is the command you wanted to use.

2. This code also signals the successful completion of all asynchronous processing.

**ACTION:** For information only, no action required.

### 71

Asynchronous command complete.

**ACTION:** For information only, no action required.

### 73

Ready status change.

**ACTION:** For information only, no action required.

### 7B

Synchronous command complete.

**ACTION:** For information only, no action required.

## **81-8F**

Codes **81** to **8F** indicate the FDI is simulating tape functions.

**81**Slow forward with Inter-record Gap (IRG)

**82**Slow reverse with Inter-record Gap (IRG)

**83**Fast forward with Inter-record Gap (IRG)

**84**Fast reverse with Inter-record Gap (IRG)

**85**Rewind

**89**Set timer (to a maximum of 64 ms)

**8A**Read disk

**8B**Write disk

**8C**Diagnostic write

**8D**Diagnostic fast forward

**8E**Diagnostic fast reverse

**8F**Unrecognized command

**ACTION:** For information only. No action required.

## **A1**

Floppy Disk Interface (FDI) has completed reading a record from a disk into its read buffer and is transferring the data to the CPU.

**ACTION:** For information only, no action required.

## **A2**

Floppy Disk Interface (FDI) has completed writing a record from its write buffer onto a disk.

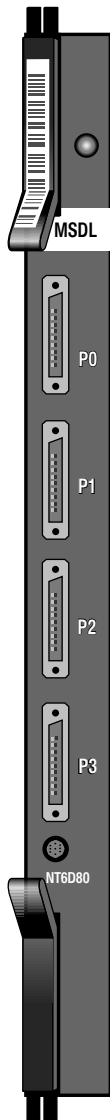
**ACTION:** For information only, no action required.

## **CC**

Data transfer from cartridge is complete.

**ACTION:** For information only, no action required.

## MSDL — Multipurpose Serial Data Link



553-0194T MSDL(IOD)

A Meridian 1 can support up to 16 Multipurpose Serial Data Link (MSDL) cards to a maximum of 64 ports.

### Purpose

The MSDL card provides a serial interface for D-channel (DCH), ISDN Signaling Link (ISL), Application Module Link (AML), and SDI terminals (DTE or DCE).

TTY and printer asynchronous terminals can only be configured on port 0. All ports can be configured for synchronous applications, as DTE or DCE and RS232 or RS422.

### Function

The MSDL MPU provides the following:

- ◆ self-tests
- ◆ communicates with the Meridian 1 CPU
- ◆ downloads peripheral software from the Meridian 1 CPU to control MSDL parameters
- ◆ coordinates data flow in conjunction with the Meridian 1 CPU
- ◆ manages data link layer and network layer signaling to control connection and disconnection
- ◆ controls its own operation initialization and addressing

### Features

The MSDL card faceplate includes the following:

- ◆ a LED, when lit indicating a disabled MSDL card
- ◆ four I/O ports using 26 pin female SCSI II connectors
- ◆ a proprietary port for monitoring MSDL functions

On the component side of the card, switches S9 and S10 set the device number to match DNUM in LD 17. Switches S1 to S8 set ports to DTE or DCE and RS232 or RS422.



## Multipurpose Serial Data Link commands

The MSDL provides 4 ports for ISDN Primary Rate D-channel (DCH) and Application Module Link (AML).

The MSDL commands are listed below, where x is the MSDL device number (defined by prompt DNUM in LD 17):

DIS MSDL x (ALL) = Disable MSDL card  
 ENL MSDL x (FDL, ALL) = Enable MSDL card  
 RST MSDL x = Reset MSDL card  
 STAT MSDL (x (FULL)) = Get MSDL status  
 SLFT MSDL x = Execute a selftest on MSDL card x

These commands are provided in Link Diagnostic (LD 48) and D-channel Maintenance (LD 96), and I/O Diagnostic (LD 37). Refer to the “Alphabetical list of commands” in LD 48 for a complete description of these commands.

| MSDL commands                |                                                       |         |
|------------------------------|-------------------------------------------------------|---------|
| Command                      | Description                                           | Release |
| <b>Status of MSDL</b>        |                                                       |         |
| <b>STAT MSDL (x) (FULL)</b>  | Get status of MSDL card (x) (additional information). |         |
| <b>Disable</b>               |                                                       |         |
| <b>DIS MSDL x (ALL)</b>      | Disable MSDL device x (card).                         |         |
| <b>Enable</b>                |                                                       |         |
| <b>ENL MSDL x (ALL, FDL)</b> | Enable MSDL device x (card, Forced Download).         |         |
| <b>Reset MSDL</b>            |                                                       |         |
| <b>RST MSDL x</b>            | Reset MSDL device x.                                  |         |
| <b>Test MSDL</b>             |                                                       |         |
| <b>SLFT MSDL x</b>           | Invoke self-test for MSDL device x.                   |         |

## Property Management System Interface

The Property Management System Interface (PMSI) is a full-duplex RS-232 asynchronous data link that allows a Meridian 1 customer with a Property Management System (PMS) computer to exchange a higher level of protocol for the Background Terminal (BGD) features in a hospitality environment.

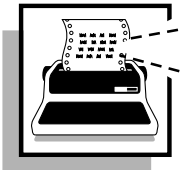
The system connects to the PMS computer through a SDI port. Each character received from the PMSI data link is treated as if it were entered from a TTY, and each character transmitted to the PMS computer is handled the same way as characters that are output to a TTY.

| PMSI commands     |                                                                                                                                                                                                                                                                         |         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command           | Description                                                                                                                                                                                                                                                             | Release |
| Status of PMSI    |                                                                                                                                                                                                                                                                         |         |
| <b>STAT</b>       | Provide status of all input/output devices in system.                                                                                                                                                                                                                   | basic-1 |
| <b>STAT TTY</b>   | Provide status of all TTY devices in system.<br><br>With X11 Release 19 and later, this command enables you to get the status of the primary PMSI I/O port, and the Single Terminal Access (STA) administration terminal.                                               | basic-1 |
| <b>STAT TTY x</b> | Provide status of TTY x.<br><br>With X11 Release 19 and later, this command also provides the appropriate PMSI port.                                                                                                                                                    | basic-1 |
| <b>STAT MON</b>   | Get the monitoring status for the primary PMSI port.<br><br>This command displays the status of the message monitoring for the primary port. For example, if MSGI, MSGO, and SET MON 0 are enabled the display would be as follows.<br><br><b>MSGI:ON MSGO: ON ALPH</b> | pms-19  |
| Disable PMSI      |                                                                                                                                                                                                                                                                         |         |
| <b>DIS MSGI</b>   | Disable incoming message monitoring for the primary PMSI port.                                                                                                                                                                                                          | pms-19  |
| <b>DIS MSGO</b>   | Disable outgoing message monitoring for the primary PMSI port.                                                                                                                                                                                                          | pms-19  |

| <b>PMSI commands (continued)</b>   |                                                                                                    |                |
|------------------------------------|----------------------------------------------------------------------------------------------------|----------------|
| <b>Command</b>                     | <b>Description</b>                                                                                 | <b>Release</b> |
| <b>Enable PMSI</b>                 |                                                                                                    |                |
| <b>ENL MSG</b>                     | Enable incoming message monitoring for the primary PMSI port.                                      | pms-19         |
| <b>ENL MSGO</b>                    | Enable outgoing message monitoring for the primary PMSI port.                                      | pms-19         |
| <b>Set PMSI monitoring display</b> |                                                                                                    |                |
| <b>SET MON 0</b>                   | Set the monitoring display to be in alphanumeric format.<br>This applies to the primary PMSI port. | pms-19         |
| <b>SET MON 1</b>                   | Set the monitoring display to be in hexadecimal format.<br>This applies to the primary PMSI port.  | pms-19         |
| <b>CDSP</b>                        | Set the monitoring display to be in alphanumeric format<br>This applies to the primary PMSI port.  | pms-19         |

## Intelligent Links (APL, HSL, LSL, and CMAC)

A warning message is generated each time an intelligent link is accessed (enable, disable, test). The message is generated for the following types of links:



### APL

### ACD-D (HSL/LSL)

### CMAC (Communication Management Center)

The message allows the access to be aborted prior to performing the enable, test, etc. The warning appears in the following format:

**DIS TTY N (link type) LINK (status) (y/n)**

A response of y disables the hardware of the TTY regardless of the software status of the link. The status field provides the software status of the link. Valid status entries are:

**BAD** = software status is invalid

**DOWN** = link is down

**MAINT** = link is up and in maintenance mode

**FULL** = link is full

**EMPTY** = link is empty

**NOT EMPTY** = link still contains data

## IOD messages

### IOD000

Program 37 identifier.

**ACTION:** The IOD program is loaded and ready for you to enter commands.

### IOD001

An invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

**IOD002**

An invalid argument(s).

**ACTION:** Check to make sure your data is correct and re-enter the command.

**IOD003**

The customer is nonexistent or out-of-range. Range is 0 to 31.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**IOD004**

The device number is out-of-range. Range is 0 to 7 or 0 to 15.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**IOD005**

The requested device is not defined in the system.

**ACTION:** Ensure that this is the command you wanted to use. If this is the correct command, refer to the *administration input/output guide* to program the device.

**IOD006**

The interface card failed to respond and a card fault is indicated. The device cannot be enabled until the fault is cleared. This information is also displayed on the maintenance display. Refer to the Maintenance Display Codes Table.

**ACTION:** Check the enable switch on the SDI or MSDL card. Use ENL MSDL to enable MSDL card. If the card still does not respond, replace the SDI or MSDL cards following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**IOD007**

The interface card has a permanent interrupt. The device cannot be enabled until fault is cleared.

**ACTION:** Replace the SDI or MSDL card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## IOD009

The disabling of an active input device is not allowed.

**ACTION:** Refer to a different TTY or use an SL-1 maintenance set.

## IOD010

The device cannot be enabled because the extender to the network shelf is disabled.

**ACTION:** Use STAT EXT in LD 35 to determine which extender is disabled. Use ENL EXT xxx in LD 35 to re-enable the extender before proceeding. If the extender does not enable, replace the extender card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

## IOD011

The CDR tape is not positioned after the last record.

**ACTION:** Perform a backup so that the data on the tape is not lost, and then install new tape.

## IOD012

The RW test is not allowed on the Mini-CDR tape. It is only used on SL-1 M and MS.

**ACTION:** Information only, no action required.

## IOD021

An illegal character was entered while the tape data was running. Only END is permitted while TEST is in progress.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## IOD030

The command is not allowed for an ESDI port.

**ACTION:** Ensure that this is the command you wanted to use.

## IOD040 n

A TTY or printer **n** is not emptying the output buffer. The device is disabled. This information is also displayed on the maintenance display.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The output circuitry on SDI card n is faulty.

**ACTION:** Replace the SDI card following the steps in the *Hardware replacement* guide.

2. A miscellaneous or IF card on active CPU

**ACTION:** Use SCPU in LD 35 to switch CPUs. If the TTY operates now, replace the IF card following the steps in the *Hardware replacement* guide. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

3. Other Serial Data Interface Type cards.

**ACTION:** Replace the other SDI card one at a time following the steps in the *Hardware replacement* guide.

#### IOD041 n

A TTY n is producing incoherent or too much (over a defined threshold) input. The card has been disabled. Either the device is faulty or it is connected to a very noisy data line. This information is also displayed on the maintenance display. With X11 Release 19 and later, I/O Port auto Lockout Recovery is operating. This message indicates the TTY was left disabled because it had been locked out and re-enabled three times in the last 30 minutes.

**ACTION:** Use ENL TTY x to manually re-enable the port, and bring it back to service.

#### IOD050 n

1. The MSI/Tape unit n is not ready.

**ACTION:** Check disk/tape cartridge for proper seating. With disk systems, try operation again while watching the Mass Storage Interface display. Note display and follow the actions in the *Mass Storage Interface faceplate codes* in this chapter.

2. Receiving this message on a STE system running release 19 or 20 software.

**ACTION:** Load an overlay from another set of diskettes. Check for faulty FDI (QPC742). Check for a faulty cable or FDU (NTND15) card.

3. Receiving this message when data dumping to the target diskettes while upgrading.

**ACTION:** Check that the MSI or FDI switch S3 position 4 is off. Check that the proper target data cartridge is mounted on the MSI or FDI card.

## IOD051 e n

1. Time-out or early warning on tape unit while reading. Error codes for **e** are as follows:

**A**=read directory timeout

**B**=check directory time-out

**C**=check track 3 time-out

**D**=check track 4 time-out

**E**=find last overlay record time-out

**F**=read EOF (End-Of-File) time-out

**G**=erase fault

**W**=tape initialization time-out

**X**=position check (tape read) time-out

**Y**=early warning point reached

**Z**=find record time-out

The field **n** represents MSI/tape unit I or 2.

**ACTION:** Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Receiving this message when data dumping to the target diskettes while upgrading.

**ACTION:** Check that the MSI or FDI switch S3 position 4 is off. Check that the proper target data cartridge is mounted on the MSI or FDI card.

## IOD052

An early warning point has been reached.

**ACTION:** Replace the disk or tape. Verify that the fault is cleared.



**IOD060 n**

An MSI or Tape Interface card fault for MSI or tape unit **n**.

**ACTION:** Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**IOD061 n**

A faulty track select on MSI or tape unit **n**.

**ACTION:** Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**IOD062 n**

A tape cartridge is missing or there is a defective bulb on tape unit **n**.

**ACTION:** Check the cartridge and bulb. Use MSI x to check Drive A and drive B. If the tests do not pass, replace drive A or B following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**IOD063 n**

The tape wound off the end of the reel on unit **n**, or tape unit **n** is defective.

**ACTION:** Check the cartridge or disk on MSI unit **n**.

**IOD064 n**

Interrupt fault on tape interface (TI) card for unit **n**.

**ACTION:** Disregard this message if the system is equipped with disk drives.

**IOD065 n**

Unable to position disk or tape correctly on MSI drive A or drive B or tape unit **n** due to faulty tape or interrupt fault.

**ACTION:** Replace the MSI card or drive A or drive B one at a time following the steps in the *Hardware replacement* guide. After replacing each device verify that the fault is cleared.

## **IOD066 n**

The MSI or tape motion error detector on MSI or tape unit **n** malfunctioning.

**ACTION:** Replace the MSI card or drive A or drive B one at a time following the steps in the *Hardware replacement* guide. After replacing each device verify that the fault is cleared.

## **IOD067 n**

Tape control electronics is allowing improper tape motion on tape unit **n**. The MSI control unit is not working.

**ACTION:** Replace the MSI card or Drive A or drive B one at a time as per steps in the *Hardware replacement* guide. After replacing each device verify that the fault is cleared.

## **IOD068 n**

There is a defective interval timer on interface card for tape unit **n**. The MSI timer is not working.

**ACTION:** Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **IOD069 n**

The tape speed is incorrect, or there has been a failure to detect tape position changes on tape unit **n**. Possible defect in positioning of front cover. MSI timer not working.

**ACTION:** Remove the cover and test the cartridge. Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **IOD070 n**

The hardware on tape unit **n** failed to automatically stop motion at cartridge limits, or MSI timer not working.

**ACTION:** Replace the MSI card as per steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **IOD071 n**

Bad data on disk or tape, or defective cartridge in MSI, or tape unit **n**.

**ACTION:** Replace the MSI cartridge following the steps *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**IOD072 n**

There is a faulty track select or defective cartridge in MSI, or tape unit **n**.

**ACTION:** Replace the MSI cartridge following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**IOD073 n**

A faulty write protect mechanism exists which allows writing on protected data track of MSI or tape.

**ACTION:** Replace the drive unit following the steps in the *Hardware replacement* guide. After replacing the drive unit verify that the fault is cleared.

**IOD074 n**

The tape cartridge on tape unit **n** is set to SAFE; the test cannot continue. Test will automatically continue when cartridge is replaced. This message can also indicate the MSI floppy disk B is write protected.

**ACTION:** Remove the write protection on the 5 1/4 inch floppy disk B by exposing the notch in the disk, or on the 3.5 inch floppy disk B by covering the hole on the disk.

**IOD075 e c n**

Erase or write fault on tape unit **n**. **c** is the EOF record count (normally 9) and is given only when **e** = J.

**e** appears as one of the following codes:

**J**= write unsuccessful after four attempts

**K**=skip back timeout

**L**=not EOF when EOF expected or timeout

**M**=read buffer full

**N**=read buffer full

**O**=time-out checking read buffer

**P**=EOF record not found before starting check pattern

**Q**=write check pattern timeout

**R**=read check pattern timeout

**S**=read check pattern timeout

**T**=check pattern record count error

**U**=read EOF (to start erase) timeout

V=no EOF when expected or timeout

**n**=MSI/tape unit 1 or 2 has erase or write fault. Possible faults include dirty tape heads, faulty cartridge or faulty drive interface

**ACTION:** Replace the tape unit following the steps in the *Hardware replacement* guide.

## IOD076 **n**

The MSI or tape unit **n** has problems reading data from disk or tape.

**ACTION:** Replace the drive unit following the steps in the *Hardware replacement* guide. After replacing the drive unit verify that the fault is cleared.

## IOD077 **n**

The MSI or tape unit **n** has problems writing data on tape

**ACTION:** Replace the drive unit following the steps in the *Hardware replacement* guide. After replacing the drive unit verify that the fault is cleared.

## IOD078 **n**

There is a hardware fault on the MSI or tape unit **n** which causes a momentary 'Not Ready' indication.

**ACTION:** Replace the MSI or tape unit. If the problem continues contact your technical support group.

## IOD079 **n**

The tape cartridge on tape unit **n** has bad a directory, or there is a bad directory in the MSI system.

**ACTION:** Try using the backup disks.

## IOD080 **n**

Disk or tape cartridge on MSI or tape unit **n** has missing 'end of disk/file'.

**ACTION:** Try using the backup disks.

## IOD100 **x y**

Meaning depends on the output data:

**1.** If **IOD100 = 1 t**, Head fault or bad record on track **t**.

**ACTION:** Try using the backup disks, or replace the drive unit following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

**2. If IOD100 = e n**, Timeout or early warning during checking MSI/tape unit **n**. See IOD051 for error **e**. Suspect tape cartridge, interface, cable(s) or tape shelf.

**ACTION:** Replace the following components one at a time following the steps in the Hardware replacement guide. Replace tape cartridge, interface, cable(s) or tape drive unit following the steps in the *Hardware replacement* guide. Swapping the active and secondary tape interfaces and cables may help to isolate the problem. Verify that the fault is cleared after replacing each component.

**3. If IOD100 = n t**, Track **t** disabled due to timeout or early warning initializing MSI/tape unit **n**.

**ACTION:** Try the backup disks/tape.

### IOD101 x y

Meaning depends on the output:

**1. If IOD101 = 1 t**, Requested data record not found on track **t**.

**ACTION:** Try the backup disks/tape.

**2. If IOD101 = n t**, Data record not found on track **t** on MSI/tape unit **n**. The data was loaded because it was duplicated.

**ACTION:** See IOD100 for possible faults.

**3. If IOD101 = t n r**, Data record rewritten by TAPE module on MSI/tape **n**, record **r**.

**ACTION:** Try the backup disks/tape.

**4. If IOD101 = e n t**, Data record not found on tape **n** track **r**, **e** appears as one of the following codes:

**A**=tape initialization

**B**=read directory

**C**=read data record (after read directory)

**D**=read test record

**E**=read EOF record

**F**=read data record (after test)

**G**=read last overlay record

**H**=read checking track 1 or 3

**I**= read checking track 2 or 4

**ACTION:** Try the backup disks/tape.

## IOD110

Meaning depends on the output data:

**1. If IOD110 = n**, Data record not found on both tracks of tape unit **n**.  
The data from the tape could not be loaded. Refer to IOD100 for possible faults.

**2. If IOD110 = 1 t**, Requested data record not found on track **t**.

**ACTION:** Backup the disk or tape. If the problem continues replace the drive.

## IOD111 n

Tape unit **n** is disabled.

**ACTION:** Use ENL MSI x to enable MSI unit.

## IOD112

Cannot perform TTY tests on PMS link.

**ACTION:** Information only, no action required.

## IOD200 1

Tape disabled detected during write effort. Write effort suspended.

**ACTION:** Replace the drive following the steps in the *Hardware replacement* guide.

## IOD201 1

Tape not equipped detected during write effort.

Write effort suspended.

**ACTION:** Remove the tape from the drive and reset the drive.

## IOD203 1

Tape not ready detected during write effort. Write effort suspended.

**ACTION:** Disable and re-enable the drive and enter the command again.

## IOD204 1

Tape write protected detected during write effort.

Write effort suspended.

**ACTION:** Remove the tape from write protect.

**IOD205 1**

Early warning detected during write effort. Write effort suspended if track 3.

**ACTION:** Replace the drive following the steps in the *Hardware replacement* guide.

**IOD206 1**

Read error detected during write effort. Hardware fault suspected. Write effort suspended.

**ACTION:** Replace the drive following the steps in the *Hardware replacement* guide.

**IOD207 1**

Write error detected during write effort. Write effort suspended after retries fail.

**ACTION:** Run diagnostics, and replace the tape or drive.

**IOD208 1**

Record not found error detected during write effort. Hardware fault suspected. Write effort suspended.

**ACTION:** Replace the drive following the steps in the *Hardware replacement* guide.

**IOD209 1**

Time-out detected during write effort. Write effort suspended.

**ACTION:** Run diagnostics, and replace the tape.

**IOD210 1**

Tape is put in tape full state. Write effort suspended.

**ACTION:** Perform a backup and install new tape.

**IOD211 1**

CDR tape has been locked too long. Write effort suspended.

**ACTION:** Run diagnostics, and replace the tape.

**IOD212 1**

CDR tape is now at least 75% full.

**ACTION:** Information only, no action required.

**IOD250 1**

Tape response idle while erasing. Hardware fault suspected.

**ACTION:** Replace the drive following the steps in the *Hardware replacement* guide.

**IOD251 1**

Mini-CDR tape disabled. Only used on SL-1 M and MS.

**ACTION:** Re-enable the drive and run a test.

**IOD252 1**

Mini-CDR tape unequipped. Only used on SL-1 M and MS.

**ACTION:** Remove the tape and insert a backup tape.

**IOD254 1**

Mini-CDR tape not ready. Only used on SL-1 M and MS.

**ACTION:** Disable the drive and then re-enable it.

**IOD255 1**

Mini-CDR tape write protected. Only used on SL-1 M and MS.

**ACTION:** Remove the write protect from the tape.

**IOD256 1**

Early warning hit.

**ACTION:** Retry the command. Try the backup software.

**IOD257 1**

Read error detected.

**ACTION:** Try the backup software.

**IOD258 1**

Write error detected.

**ACTION:** Try the backup software.

**IOD259 1**

Record not found.

**ACTION:** Try the backup software.

**IOD260 1**

Time-out occurred.

**ACTION:** Try the backup software.



**IOD261**

(No description)

**ACTION:** Use LD 48 to enable or disable CND TTY.

**IOD280**

(No description)

**ACTION:** Use the tape command.

**IOD281**

(No description)

**ACTION:** Use the MSI command.

**IOD282**

(No description)

**ACTION:** This command not allowed for an MSI equipped system.

**IOD283**

The primary MSU is not responding.

**ACTION:** Check that the MSU cable connectors are fully inserted in their sockets. If the fault does not clear, replace the MSU card following the steps in the *Hardware replacement* guide. After replacing the MSU verify that the fault is cleared.

**IOD284**

The secondary MSU is not responding.

**ACTION:** Check that the MSU cable connectors are fully inserted in their sockets. If the fault does not clear, replace the MSU card following the steps in the *Hardware replacement* guide. After replacing the MSU verify that the fault is cleared.

**IOD290**

MSI self-test time-out. MSI is not responding.

**ACTION:** Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**IOD291**

MSI memory is faulty.

**ACTION:** Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## IOD292

MSI control is faulty.

**ACTION:** Replace the MSI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## IOD293

MSI drive A failed self-test.

**ACTION:** Replace the MSI drive A following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## IOD294

MSI drive B failed self-test.

**ACTION:** Replace the MSI drive B following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## IOD295

MSI drive C failed self-test.

**ACTION:** Replace the MSI drive C following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## IOD296

MSI drive not configured.

**ACTION:** Refer to the *administration input/output guide*. Use LD 17 ADAN to program the MSI.

## IOD297

Mass Storage Interface (MSI) floppy drive failed self-test.

**ACTION:** Replace the MSI drive following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## IOD298

The Mass Storage Interface (MSI) software configuration does not match the hardware. Update the configuration record (LD 17).

**ACTION:** Refer to the *administration input/output guide*. Use LD 17 ADAN to update the configuration record.

**IOD300**

No response is received from the System Monitor (NT8D22) after sending a status request message.

**ACTION:** Check that the ribbon cable, from the master system monitor connector is fully inserted into the proper socket of the SDI paddleboard. Check that the SDI paddleboard switch settings correspond to the configuration record. Refer to the administration put/output guide. Use LD 22 PRT CFN to check the configuration record and go to the *Circuit Pack and Testing NTP* to check for switch settings. If the fault does not clear, replace the System Monitor or SDI paddleboard, one at a time, following the steps in the *Hardware replacement* guide. After replacing each device verify that the fault is cleared.

**IOD301**

There is no master System Monitor (NT8D22) port defined.

**ACTION:** Refer to the *administration input/output guide*. Use LD 17 ADAN to define the master System Monitor port.

**IOD302**

Invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

**IOD306 x**

Could not test TTY due to one of the following reasons. The **x** field indicates the port number.

1. A self-test is not supported on that type of TTY

**ACTION:** Information only, no action required.

2. The TTY is not in the correct state to run self-test.

**ACTION:** Check to make sure the TTY is connected properly, optioned correctly, plugged in, turned on, has paper, and is serviceable.

3. Put the TTY in the enable and operational state and run the test again.

**ACTION:** Use ENL TTY x to enable the TTY port.

**IOD307 x**

The Meridian 1 timed out waiting for a response to the enable SDI application message sent to the MSDL card. The **x** field indicates the port number.

**ACTION:** Use ENL MSDL x to enable the MSDL card. If this error message is received twice in a row when attempting to enable the TTY, check to ensure the card is enabled and remains that way for the next few minutes. If the problem still persists, use DIS MSDL x to disable and then re-enable the MSDL card.

**IOD308 x**

The MSDL cannot enable the SDI application. The **x** field indicates the port number.

**ACTION:** Use ENL MSDL x to enable the MSDL card. If this error message is received more than twice in a row when attempting to enable the TTY, use ENL MSDL x FDL to re-download the card.

**IOD309 x**

The SDI application in transient state. **x** = port number

**ACTION:** Try again.

**IOD314**

That command does not apply to the Pseudo TTY (PTY).

**ACTION:** Ensure that this is the command you wanted to use.

**IOD315 x**

Failure to download the device setup. The device will still be enabled with the current setup. The **x** field indicates the failure reason:

**1.** If **x** = 0, Fail to download due to device data corruption.

**ACTION:** Remove the data and rebuild the device.

**2.** If **x** = 1, Fail to change baud rate.

**ACTION:** Remove the data and rebuild the device.

**3.** If **x** = 2, Fail to change device setup such as data bit, stop bit, or parity type.

**ACTION:** Remove the data and rebuild the device.

**4.** If **x** = 3, Fail to change control option.

**ACTION:** Remove the data and rebuild the device.

**IOD316**

It is not possible to enable the TTY or PRT without first enabling the MSDL card.

**ACTION:** Use ENL MSDL x to enable the MSDL card.

**IOD317**

The MSI and Tape related commands are not applicable to this machine.

**ACTION:** Use LD 137 to issue any maintenance and diagnostics for IOPs and CMDUs.

**IOD318 x**

TTY x was disabled due to invalid characters and will be automatically enabled in 4 minutes.

**ACTION:** Information only, no action required. Be patient.

**IOD319 x**

TTY x was automatically enabled.

**ACTION:** Information only, no action required.

**IOD320 x**

TTY x has been disabled 3 times, the maximum allowed, during the last 30 minutes. It will not be automatically enabled.

**ACTION:** Information only, no action required.

**IOD321**

Cannot disable the TTY used to access non Meridian 1 task (PDT/VxWorks Shell, for example).

**ACTION:** Information only, no action required.

**IOD322 x y**

Int detected: unconfigured I/O device. The I/O device located in group x at address y has been H/W disabled. Address y is interpreted in the *Fault address codes for page 3* section in the *INI* chapter.

**ACTION:** Refer to the administration guide. Use LD 17 to program the MSDL card. Check that the card faceplate switch is in the ENB position. Use the ENL MSDL x command to enable the card.

## IOD323x y

Int detected: S/W disabled I/O device. The I/O device located in group **x** at address **y** has been H/W disabled. Address **y** is interpreted in the *Fault address codes for page 3* section in the *INI* chapter.

**ACTION:** Check that the card faceplate switch is in the ENB position. Use the ENL MSDL x command to enable the card.

## IOD327 x

Overlay command cannot be executed due to one of the following conditions. The **x** field indicates the port number.

1. The port is not in the correct state for the command to be executed.

**ACTION:** Disable the MSDL card and re-enter the command.

2. The port is already in the right state.

**ACTION:** Check to ensure your data is correct and if applicable, re-enter the command.

3. Check port state and try again.

**ACTION:** Use the stat MSDL to check the status of the card.

## IOD328 x y z

MSDL SDI target state has been changed. The **x** field gives the port number. The **y** field gives the original target. The **z** field gives the new target.

**ACTION:** Information only, no action required.

## IOD329 x y

Event: An application download failed. The **x** field indicates the port number. The **y** field indicates the failure reason.

1. If **y** = 3, Maintenance in progress is the failure reason.

**ACTION:** Be patient, and wait.

2. If **y** = 4, Transmit **x** buffer busy is the failure reason.

**ACTION:** Use DIS MSDL x to disable the MSDL card, then use ENL MSDL x to enable it. When the card is enabled, try again.

3. If **y** = 6, No maintenance socket ID is the failure reason.

**ACTION:** Refer to the *administration input/output guide*. Use LD 17 ADAN to reconfigure port, then use ENL MSDL x to enable port again.

**4.** If **y** = 10, Download failed or other failure reasons.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and then try again.

**5.** If **y** = 11, Force download not allowed is the failure reason.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and then try again.

## **IOD331 x y z**

The port is disabled by the system. The **x** field indicates the port number. The **y** field indicates why the port is disabled. The **z** field indicates the port state or port substate if the state is test.

**1.** If **y** = 1, Enable application failed

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

**2.** If **y** = 2, Status errno

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

**3.** If **y** = 3, Primitive timeout

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

**4.** If **y** = 4, MSDL Handler failure

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

**5.** If **y** = 5, Disable indication received

**ACTION:** Refer to the *Circuit Pack Installation & Testing NTP* and check the MSDL card switch setting.

**6.** If **y** = 6, PSDL threshold exceeded

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

**7.** If **y** = 7, MSDL card is system disabled

**ACTION:** Use ENL MSDL **x** to enable the card and re-enter the command.

8. If **z** = 15, Bad RS232/422 switch setting

**ACTION:** Refer to the *Circuit Pack Installation & Testing NTP* and check the MSDL card switch setting.

9. If **z** = 16, Bad DTE/DCE switch setting

**ACTION:** Refer to the *Circuit Pack Installation & Testing NTP* and check the MSDL card switch setting.

10. If **z** = 17, Not enough memory

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

## IOD332 **x y**

The port is enabled but not ready. The **x** field gives the port number and the **y** field indicates the not ready reason.

1. If **y** = 0 Autobauding

**ACTION:** Press the return key repeatedly to trigger the port to autobaud.

2. If **y** = 1, Wait for the modem to be connected

**ACTION:** Check the modem connection.

3. If **y** = 2, The DTR is down

**ACTION:** Check the cable connection.

4. If **y** = 3, Await terminal (vt220) verification

**ACTION:** Information only, no action required. Be patient.

## IOD333 **x**

The port is now operational; previously it was enabled but not ready. **x** = port number.

**ACTION:** Information only, no action required.

## IOD334 **x**

The port is put into midnight recovery. **x** = port number

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable the card, or wait for a midnight recovery to occur.



**IOD335 x**

Auto-recovery is complete. **x** = port number

**ACTION:** Information only, no action required.

**IOD336 x y z**

Auto-recovery is in progress. Wait for auto-recovery to complete.

**x** = port number

**y** = recv attempt no - 1, 2, or 3

**z** = cause for recovery - <disable reason>

**ACTION:** Information only, no action required. Be patient.

**IOD337**

HSPR command attempted, but the HOSP package is unequipped.

**ACTION:** Ensure that this is the command you wanted to use. If it is the proper command, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk. Check to make sure that there are no extra packages on the disk. Have your technical-support group contact Northern Telecom Customer Service for replacement software.

**IOD338**

HSPR command attempted, but no PMS ports configured.

**ACTION:** Ensure that this is the command you wanted to use. If it is the proper command, you may have to configure the PMS ports.

**IOD339 x**

STA disable process failed because application says so. **x** = STA logical number.

**ACTION:** Contact your technical support group.

**IOD340 x**

The overlay command cannot be executed. One of the following may have taken place. The **x** gives the STA logical number

1. STA application is not in the correct state for the command to be executed

**ACTION:** Check the database and if applicable, re-enter the command.

2. STA application is already in the right state.

**ACTION:** Ensure that this is the command you wanted to use.

## IOD341 x y z

STA application encounters operational errors and the auto-recovery process is activated to recover. The **x** field indicates the STA logical number, The **y** field indicates the type of operational errors and the **z** field is the reason for STA loadware suicide. The **z** only appears in the message if **y** is 5.

1. If **y** = 1, Fail to enable STA application due to operational errors.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

2. If **y** = 2, Status error due to operational errors.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

3. If **y** = 3, Primitive timeout due to operational errors.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

4. If **y** = 4, MSDL Handler failure due to operational errors.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

5. If **y** = 5, STA loadware suicide as indicated by **z**, as follows:

**z** = 15 Wrong RS232/RS422 switch setting caused suicide.

**ACTION:** Refer to the *Circuit Pack Installation & Testing NTP* and check the MSDL card switch setting.

**z** = 16 Wrong DTE/DCE setting caused suicide.

**ACTION:** Go to the *Circuit Pack Installation & Testing NTP* and check the MSDL card switch setting.

**z** = 17 Not enough memory caused suicide.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

**z** = 18 Fail to detect VT220 caused suicide.

**ACTION:** Contact your technical support group.

**z** = 19 STA loadware layer 2 bug caused suicide.

**ACTION:** Contact your technical support group.

**y** = 6 PSDL threshold failure due to operational errors.

**ACTION:** Use DIS MSDL **x** to disable the MSDL card, then use ENL MSDL **x** to enable it and re-enter the command.

## IOD342 **x**

STA application is put in midnight recovery. No more auto-recovery will be attempted until midnight. **x** = STA logical number.

**ACTION:** Information only, no action required.

## IOD343

“DIS TTY #” Cannot be used to disable the STA administration terminal.

**ACTION:** Ensure that this is the command you wanted to use.

## IOD344

“ENL TTY #” cannot be used to enable the STA administration terminal.

**ACTION:** Ensure that this is the command you wanted to use.

## IOD345

A TTY self test is not allowed on the STA administration terminal.

**ACTION:** Ensure that this is the command you wanted to use.

## IOD346 **x y z**

An STA auto-recovery is in progress. The **x** field indicates the STA logical number. The **y** field gives the number of STAs attempts to recover: after three attempts the STA is put into midnight recovery. The **z** field gives the Operational Errors types which cause auto-recovery.

**1.** If **z** = 1, Fail to enable STA application

**ACTION:** Contact your technical support group.

**2.** If **z** = 2, Status error

**ACTION:** Contact your technical support group.

**3.** If **z** = 3, Primitive timeout

**ACTION:** Contact your technical support group.

4. If  $z = 4$ , MSDL Handler failure

**ACTION:** Contact your technical support group.

5. If  $z = 5$ , STA loadware suicide

**ACTION:** Contact your technical support group.

6. If  $z = 6$ , PSDL threshold failure

**ACTION:** Contact your technical support group.

7. If  $z = 7$ , MSDL system enabled

**ACTION:** Contact your technical support group.

## IOD347 x

A STA auto-recovery has been completed. The **x** field indicates the STA logical number.

**ACTION:** Information only, no action required.

## IOD350

Point-to-Point Protocol interface is disabled.

**ACTION:** Issue the command “ENL PPP” in LD 117.

## IOD351

Active Point-to-Point Protocol session has been found.

**ACTION:** Wait until the current PPP session is terminated.

## IOD352

Point-to-Point Protocol task has failed to start.

**ACTION:** Check the system port for additional information regarding possible causes of the failure.

## IOD353

Invalid PTY port. PTY port is not supported.

**ACTION:** Check to make sure your data is correct. 

## IOD363

The overloaded SDI MSDL port needs to be disabled before it can be enabled.

**ACTION:** Action: Place the TTY in the manually disabled mode with the command DIS TTY x. Enable the TTY with the command ENL TTY x.

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## IOD — LD 37 Input/Output Diagnostic

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**IOD0371**

Device locked by the Russian Call Monitoring feature. The TTY could not be disabled or enabled.

**ACTION:** Action: Contact your technical support group.

## **IOD — LD 37 Input/Output Diagnostic**

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## ISR — LD 39 Intergroup Switch and

Refer to the *IGS* chapter in this guide. 





## LD 31 — Telephone and Attendant

This program tests the keys and lamps of Meridian 1 proprietary telephone sets and Attendant Consoles. The tests consist of pressing keys on a telephone and checking for the correct response. This diagnostic cannot be used for testing the DISPLAYPHONE 1200, or M3000.

This test is not much value to a site technician as the internal components of telephone sets are repaired in telephone repair centers. A test of more value to a site technician is the replacement of a faulty telephone with a good one.

LD 31 will only appear in the *Fault Clearing Guide* binder used by technical support groups. 

# LD 31

**764** Telephone and Attendant

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## LNK — LD 48 Link Diagnostic

For messages and descriptions refer to the *maintenance input/output guide*. 



## MCT — Malicious Call Trace

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Basic Rate Interface Northern Telecom Publications for details. 

# MCT

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## MEM — Memory Manager

### How the MEM works

Memory Manager is a resident program. MEM does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

MEM is used to check the amount of unused memory available to accommodate substantial amounts of new data to be added, and to respond to error messages SCH601 and SCH603.

### MEM messages

#### MMEM000

Program Identifier.

**ACTION:** The MEM program is loaded and ready for you to enter commands.

#### MEM001

Invalid key word, or incorrect password entered.

**ACTION:** Check to make sure your data is correct and re-enter the proper key word or password.

#### MEM002

Incorrect number of parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### MEM003

Invalid parameter.

**ACTION:** Check to make sure your data is correct and re-enter the command.

# MEM

## 770 Memory Manager

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### MEM005

Request valid for XL systems only.

**ACTION:** Ensure that this is the command you wanted to use.

### MEM010

Dump map has been made identical to active map.

**ACTION:** Contact your technical support group.

### MEM011

No change from present assignment.

**ACTION:** Information only, no action required.

### MEM012

Map was not changed before CHK command.

**ACTION:** To check the map refer to the *administration input/output guide* and use LD 29.

### MEM101

Maximum logical page size exceeded by response to MSG.

**ACTION:** To check the map refer to the *administration input/output guide* and use LD 29.

### MEM102

Maximum logical page size exceeded (prompts TYNM/PGBY).

**ACTION:** Contact your technical support group.

### MEM103

Parameter out of range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MEM104

Unequipped package.

**ACTION:** Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the storage medium.

### MEM110

Attempt to assign page to wrong memory type.

**ACTION:** Check to make sure your data is correct and re-enter the command.



**MEM111**

Attempt to assign page to an unequipped memory.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MEM112**

Invalid logical page number.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MEM113**

Specified page is assigned to an unequipped memory.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MEM120**

WARNING: Free space will likely be below the safety limit.

**ACTION:** Contact your technical support group.

**MEM121**

Map check failed. Some page(s) will not likely fit.

**ACTION:** Contact your technical support group.

**MEM150**

Automatic map generator routine failed.

**ACTION:** Contact your technical support group. 

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## MFC — LD 54 Multifrequency Compelled

### In this chapter

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### How the MFC works

Multifrequency Compelled Signaling (MFC) or Multifrequency Signaling (MFE) provides a handshaking facility between the Meridian 1 and the Central Office (CO) or Public Exchange (PE) or between other PBXs over network and Tie trunks.

The MFD overlay program is used to diagnose, display or change the status of the MFC or MFE send/receive (S/R) cards.

LD 54 resets all available MFC or MFE cards (both channels idle) and performs loop-back tests during the midnight routines. After every SYSLOAD or power-up, all available MFC or MFE cards are initialized.

The overlay can be loaded by the system after every power-up (or SYSLOAD), as part of the daily routines, or loaded manually to enter commands.

### Hardware initialization after SYSLOAD

After system power-up, every idle MFC or MFE card is initialized (self-tested). During this test the card is disabled (the LED on faceplate is ON) and the S/R card microprocessor executes sequential loop-back tests on both channels.

These tests entail looping the sender output of each card to the receiver input. The sender transmits all thirty tone pairs (1 to 15 digits for both DOD/DID modes) with a default signal level of zero. Each time the receiver detects a tone pair, the microprocessor verifies the digit received. At the end of the test a command to enable the card is issued and the microprocessor sends the test results to the CPU.

### Loop-around test during daily routines

This loop-around test is conducted by the system during the daily routines. The loop-around test is identical to the one conducted after power-up except for the following points:

- ◆ the test is conducted on one channel at a time for all available MFC or MFE cards
- ◆ the MFC or MFE S/R card remains enabled (the LED on faceplate is OFF)
- ◆ the self-test can also be loaded manually by issuing a command on the specified channel

## Loop-around test by command

The loop-around tests are performed by maintenance personnel on a specified channel of the MFC or MFE S/R card. There are two types of tests:

- ◆ the first is identical to the daily routine test which is conducted on the specific channel
- ◆ the second is conducted on a specific channel for a specified digit and signal level

LD 54 also performs the following functions:

- ◆ resets all idle MFC or MFE cards once a day during the midnight routines
- ◆ enables and disables the MFC or MFE card or channel
- ◆ determines the status of the MFC card or channel
- ◆ lists all disabled MFC or MFE channels
- ◆ handles other common overlay operations, such as clearing alarms

**Note 1:** Use the DISL command to force-disable the MFC or MFE channel or card.

**Note 2:** Use the DISI command in LD 32 to disable the card when idle.

**Note 3:** No more than 50 percent of MFC channels can be disabled at one time as a result of system or manually initiated tests. However, this constraint does not apply when using disable commands.

## MFC/MFE Error Handler and counter

The MFC/MFE Error Handlers are resident programs that monitor the number of MFC or MFE signaling errors. A one-word error field in the MFC or MFE block is initialized to zero. The Error Handler program allows a maximum of 10 errors. After every successful use of the MFC or MFE channel, the error field is decremental by one, if it is not already at zero. After every failure of the MFC or MFE channel the error field is incremental by one.

With X11 software, the Error Handler program generates only the **ERR700 L S C U** message. When an Error Handler code is output, the MFD overlay must be loaded manually and the MFC or MFE channels tested.

| LD 54 Common commands      |                                                                                                                                                                                                          |         |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                    | Description                                                                                                                                                                                              | Release |
| <b>Clear Disable alarm</b> |                                                                                                                                                                                                          |         |
| <b>CDSP</b>                | Clear the maintenance display on active CPU.                                                                                                                                                             | basic-1 |
| <b>CMAJ</b>                | Clear major alarm, reset power fail transfer and clear power fault alarm.                                                                                                                                | basic-1 |
| <b>CMIN ALL</b>            | Clear minor alarm indication on all Attendant Consoles.                                                                                                                                                  | basic-1 |
| <b>CMIN c</b>              | Clear minor alarm indication on Attendant Consoles for customer c.                                                                                                                                       | basic-1 |
| <b>Status</b>              |                                                                                                                                                                                                          |         |
| <b>STAT</b>                | List all disabled MFC channels in the system.                                                                                                                                                            | basic-1 |
| <b>STAT I s c (u)</b>      | Get status of specified MFC or MFE card or unit.<br>Status is one of IDLE, BUSY, MBSY, DSBL or UNEQ for both channels.                                                                                   | basic-1 |
| <b>Disable device</b>      |                                                                                                                                                                                                          |         |
| <b>DISC I s c</b>          | Disable specified MFC or MFE card.<br>LED on card is ON when disabled.                                                                                                                                   | basic-1 |
| <b>DISU I s c u</b>        | Disable specified MFC or MFE channel.<br>When the other unit on the card is also in a disabled state in the software, a message is sent to disable the MFC or MFE card. LED on card is ON when disabled. | basic-1 |

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| LD 54 Common commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Release |
| <b>Enable</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>ENLC I s c</b>                 | Enable specified MFC or MFE card.<br><br>Response is OK. A message is sent to the MFC or MFE card to turn off the LED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | basic-1 |
| <b>ENLU I s c u</b>               | Enable specified MFC or MFE channel.<br><br>Response is OK. A message is sent to the MFC or MFE card to turn off the LED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | basic-1 |
| <b>Reset/Initialize</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>MIDN 0</b>                     | Reset all idle MFC or MFE cards.<br><br>Resets all idle MFC or MFE cards and performs loop-around tests on all idle channels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | basic-1 |
| <b>MIDN 1</b>                     | Initialize all idle MFC or MFE cards (recommended after installation).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | basic-1 |
| <b>Test</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>ATST I s c u</b>               | Test automatic loop-around for specified unit.<br><br>Performs automatic loop-around test on specified unit with default signal level of zero.<br>All 30 tone pairs are tested and verified by the card microprocessor. Digits 1 to 15 signify Forward Signals 1 to 15 (DOD mode) and digits 16 to 30 signify Backward Signals 1 to 15 (DID mode).<br><br>The response is OK when the unit passes the test and is enabled. If the receiver sends no message within a predefined time period, an error message indicating timeout is printed. If the receiver indicates it has received a different signal than that sent, the failed signal, an error message and the TN are printed. | basic-1 |
| <b>End</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>END</b>                        | Stop further testing or cancel active command.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | basic-1 |



**LD 54 Common commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Manual loop-around**

|                            |                                                                    |         |
|----------------------------|--------------------------------------------------------------------|---------|
| <b>MTST I s c u<br/>dl</b> | <b>Manual loop-around</b> test on unit with specified digit level. | basic-1 |
|----------------------------|--------------------------------------------------------------------|---------|

MFC-30 tone pairs are tested and verified by the CPU. Digits 1 to 15 indicate forward signals 1 to 15 (DOD mode) and digits 16 to 30 indicate backward signals 1 to 15 (DID mode).

MFE-15 tone pairs are tested and verified. Digits 1-15 represent Forward Signals 1-15 (DID mode). Digit 0 represents the control frequency.

The MFC signal levels require a +3 dBm gain at the trunk end. The following list shows the level codes, their value at the S/R card output, and their value at the trunk.

| Digit level | Level Values<br>(at S/R card) | Level Values<br>(at trunk) |
|-------------|-------------------------------|----------------------------|
| 0           | 8 dBm                         | 5 dBm                      |
| 1           | 11 dBm                        | 8 dBm                      |
| 2           | 12 dBm                        | 9 dBm                      |
| 3           | 13 dBm                        | 10 dBm                     |
| 4           | 14 dBm                        | 11 dBm                     |
| 5           | 15 dBm                        | 12 dBm                     |
| 6           | 16 dBm                        | 13 dBm                     |
| 7           | 35 dBm                        | 32 dBm                     |

The MFE signal level 0=-10.5 dBm level with skew -7.0 dBm control frequency level. Signal levels 1-7 are used for internal test purposes.

The response is **OK** when the unit passes the test and is enabled. If the unit fails the test, the appropriate error

## Multifrequency Compelled Signaling

Multifrequency Compelled Signaling (MFC) or Multifrequency Signaling (MFE) provides a handshaking facility between the Meridian 1 and the Central Office (CO) or Public Exchange (PE) or between other PBXs over network/Tie trunks.

MFC applies to X08, X11, and X11 with Supplementary features software. The format of MFC messages is as follows:

**MFCxxx MFCTN TRKTN X1-X5**

The mnemonic description is as follows:

**MFCxxx**=MFC message

**MFCTN**=MFC register TN (packed format)

**TRKTN**=Trunk TN of the CMFTN (packed format)

**X1-X5**=the first 6 words of the unprotected MFC block for the unit used

## MFC Messages

### MFC000

Program 54 identifier.

**ACTION:** The MFD program is loaded and ready for you to enter commands.

### MFC001

Invalid input, number of characters in one field are greater than four (X08). Noisy card H/W (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Replace the MFC or MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### MFC002

Invalid input (datatype) (X08). Large twist (hardware) (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Replace the MFC or MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFC003**

Invalid input, command field unknown (X08). Three frequencies (hardware) (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Replace the MFC or MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFC004**

Invalid input, too many parameters (X08). No interdigit pause (hardware) (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Replace the MFC or MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared

**MFC005**

Last command is still in progress (X08). Invalid decision (hardware) (X11).

**ACTION:** X08 Be patient. X11 Replace the MFC or MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared

**MFC006**

Invalid TN (X08). MFC card firmware fault (hardware) (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFC007**

Invalid DOD trunk (X08). Undefined error (hardware) (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Replace the MFC or MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared

**MFC008**

Trunk is busy or disabled (X08). Software timeout (software) (X11).

**ACTION:** X08 Try later or use ENLC l s c to re-enable the trunk card. X11 Contact your technical support group.

**MFC009**

Invalid TN. Shelf out-of-range. Shelf range is 0 to 3. (X08). Software not ready to send (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Contact your technical support group.

**MFC010**

Invalid TN. Card out of range. Card range is 1 to 10 (X08). Undefined function/signal (software) (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11.

**MFC011**

Invalid Set TN (X08). MFC table not defined (software) (X11).

**ACTION:** X08 Check to make sure your data is correct and re-enter the command. X11 Contact your technical support group.

**MFC012**

Defined set is busy or disabled (X08). Invalid backward (BWD) signal received. Call cleared down (software) (X11).

**ACTION:** X08 Try later or use ENLU l s c u to re-enable the set. X11 Contact your technical support group.

**MFC013**

Invalid signalling type (X08). Invalid FWD signal received; call cleared down (software) (X11).

**ACTION:** X11 Contact your technical support group.

**MFC014**

Signaling type not defined (X08).

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFC015**

Signalling type already defined (X08). Invalid TRKTYPE attempting MFC signaling (software) (X11).

**ACTION:** X08 Ensure that this is the command you wanted to use. X11 Contact your technical support group.

**MFC016**

Command not valid for MFE signaling (X08).

**ACTION:** Ensure that this is the command you wanted to use.

**MFC017**

Trunk busy, DSI timing (X08).

**ACTION:** Contact your technical support group.

**MFC018**

Use loop and channel for digital loop TN (X08).

**ACTION:** Check to make sure your data is correct and re-enter the command

**MFC019**

Invalid digital loop TN (X08).

**ACTION:** Check to make sure your data is correct and re-enter the command

**MFC020**

No MFC incoming table defined for route (software) (X11).

**ACTION:** Check to make sure your data is correct and re-enter the command

**MFC021**

No MFC outgoing table defined for route (software) (X11).

**ACTION:** Check to make sure your data is correct and re-enter the command 

# MFC

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## MFD — LD 54 Multifrequency Signaling

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## How the MFD works

Multifrequency Compelled Signaling (MFC) or Multifrequency Signaling (MFE) provides a handshaking facility between the Meridian 1 and the Central Office (CO) or Public Exchange (PE) or between other PBXs over network and Tie trunks.

The MFD overlay program is used to diagnose, display or change the status of the MFC or MFE send/receive (S/R) cards.

LD 54 resets all available MFC or MFE cards (both channels idle) and performs loop-back tests during the midnight routines. After every SYSLOAD or power-up, all available MFC or MFE cards are initialized.

The overlay can be loaded by the system after every power-up (or SYSLOAD), as part of the daily routines, or loaded manually to enter commands.

### Hardware initialization after SYSLOAD

After system power-up, every idle MFC or MFE card is initialized (self-tested). During this test the card is disabled (the LED on the faceplate is ON) and the S/R card microprocessor executes sequential loop-back tests on both channels.

These tests entail looping the sender output of each card to the receiver input. The sender transmits all thirty tone pairs (1 to 15 digits for both DOD/DID modes) with a default signal level of zero. Each time the receiver detects a tone pair, the microprocessor verifies the digit received. At the end of the test a command to enable the card is issued and the microprocessor sends the test results to the CPU.

### Loop-around test during daily routines

This loop-around test is conducted by the system during the daily routines. The loop-around test is identical to the test conducted after power-up except for the following points:

- ◆ the test is conducted on one channel at a time for all available MFC or MFE cards
- ◆ the MFC or MFE S/R card remains enabled (the LED on the faceplate is OFF)
- ◆ the self-test can also be loaded manually by issuing a command on the specified channel



## Loop-around test by command

The loop-around tests are performed by maintenance personnel on a specified channel of the MFC or MFE S/R card. There are two types of tests:

- ◆ the first is identical to the daily routine test which is conducted on the specific channel
- ◆ the second is conducted on a specific channel for a specified digit and signal level

LD 54 also performs the following functions:

- ◆ resets all idle MFC or MFE cards once a day during the midnight routines
- ◆ enables and disables the MFC or MFE card or channel
- ◆ determines the status of the MFC card or channel
- ◆ lists all disabled MFC or MFE channels
- ◆ handles other common overlay operations (such as clearing alarms)

**Note 1:** Use the DISL command to force-disable the MFC or MFE channel or card.

**Note 2:** Use the DISI command in LD 32 to disable the card when idle.

**Note 3:** No more than 50 percent of the MFC channels can be disabled at one time as a result of system or manually initiated tests. However, this constraint does not apply when using disable commands.

## **MFC/MFE Error Handler and counter**

The MFC/MFE Error Handlers are resident programs that monitor the number of MFC or MFE signaling errors. A one-word error field in the MFC or MFE block is initialized to zero. The Error Handler program allows a maximum of 10 errors. After every successful use of the MFC or MFE channel, the error field is decremental by one, if it is not already at zero. After every failure of the MFC or MFE channel the error field is incremental by one.

With X11 software, the Error Handler program generates only the **ERR700 L S C U** message. When an Error Handler code is output, the MFD overlay must be loaded manually and the MFC or MFE channels must be tested.

| MFD common commands        |                                                                                                                                                                                                          |         |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                    | Description                                                                                                                                                                                              | Release |
| <b>Clear display/alarm</b> |                                                                                                                                                                                                          |         |
| <b>CDSP</b>                | Clear the maintenance display on active CPU.                                                                                                                                                             | basic-1 |
| <b>CMAJ</b>                | Clear major alarm, reset power fail transfer and clear power fault alarm.                                                                                                                                | basic-1 |
| <b>CMIN ALL</b>            | Clear minor alarm indication on all Attendant Consoles.                                                                                                                                                  | basic-1 |
| <b>CMIN c</b>              | Clear minor alarm indication on Attendant Consoles for customer c.                                                                                                                                       | basic-1 |
| <b>Status</b>              |                                                                                                                                                                                                          |         |
| <b>STAT</b>                | List all disabled MFC channels in the system.                                                                                                                                                            | basic-1 |
| <b>STAT I s c (u)</b>      | Get status of specified MFC or MFE card or unit.<br>Status is one of IDLE, BUSY, MBSY, DSBL or UNEQ for both channels.                                                                                   | basic-1 |
| <b>Disable device</b>      |                                                                                                                                                                                                          |         |
| <b>DISC I s c</b>          | Disable specified MFC or MFE card.<br>LED on card is ON when disabled.                                                                                                                                   | basic-1 |
| <b>DISU I s c u</b>        | Disable specified MFC or MFE channel.<br>When the other unit on the card is also in a disabled state in the software, a message is sent to disable the MFC or MFE card. LED on card is ON when disabled. | basic-1 |

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| MFD common commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Release |
| <b>Enable</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>ENLC I s c</b>               | Enable specified MFC or MFE card.<br><br>Response is <b>OK</b> . A message is sent to the MFC or MFE card to turn off the LED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | basic-1 |
| <b>ENLU I s c u</b>             | Enable specified MFC or MFE channel.<br><br>Response is <b>OK</b> . A message is sent to the MFC or MFE card to turn off the LED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | basic-1 |
| <b>Reset/Initialize</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>MIDN 0</b>                   | Reset all idle MFC or MFE cards.<br><br>Resets all idle MFC or MFE cards and performs loop-around tests on all idle channels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | basic-1 |
| <b>MIDN 1</b>                   | Initialize all idle MFC or MFE cards (recommended after installation).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | basic-1 |
| <b>Test</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>ATST I s c u</b>             | Test automatic loop-around for specified unit.<br><br>Performs automatic loop-around test on specified unit with default signal level of zero.<br><br>All 30 tone pairs are tested and verified by the card microprocessor. Digits 1 to 15 signify Forward Signals 1 to 15 (DOD mode) and digits 16 to 30 signify Backward Signals 1 to 15 (DID mode).<br><br>The response is <b>OK</b> when the unit passes the test and is enabled. If the receiver sends no message within a predefined time period, an error message indicating timeout is printed. If the receiver indicates it has received a different signal than that sent, the failed signal, an error message and the TN are printed. | basic-1 |
| <b>End</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>END</b>                      | Stop further testing or cancel active command.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | basic-1 |

**MFD common commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Manual loop-around**

**MTST I s c u  
dl** Manual loop-around test on unit with specified digit level. basic-1

MFC-30 tone pairs are tested and verified by the CPU. Digits 1 to 15 indicate forward signals 1 to 15 (DOD mode) and digits 16 to 30 indicate backward signals 1 to 15 (DID mode).

MFE-15 tone pairs are tested and verified. Digits 1-15 represent Forward Signals 1-15 (DID mode). Digit 0 represents the control frequency.

The MFC signal levels require a +3 dBm gain at the trunk end. The following list shows the level codes, their value at the S/R card output, and their value at the trunk.

| Digit level | Level Values<br>(at S/R card) | Level Values<br>(at trunk) |
|-------------|-------------------------------|----------------------------|
| 0           | 8 dBm                         | 5 dBm                      |
| 1           | 11 dBm                        | 8 dBm                      |
| 2           | 12 dBm                        | 9 dBm                      |
| 3           | 13 dBm                        | 10 dBm                     |
| 4           | 14 dBm                        | 11 dBm                     |
| 5           | 15 dBm                        | 12 dBm                     |
| 6           | 16 dBm                        | 13 dBm                     |
| 7           | 35 dBm                        | 32 dBm                     |

The MFE signal level 0=-10.5 dBm level with skew -7.0 dBm control frequency level. Signal levels 1-7 are used for internal test purposes.

The response is **OK** when the unit passes the test and is enabled. If the unit fails the test, the appropriate error message and the TN are printed.

## MFD messages

### MFD000

Program 54 identifier.

**ACTION:** The MFD program is loaded and ready for you to enter commands.

### MFD001

Invalid input. Number of characters in one field is greater than 4.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MFD002

Invalid input. Wrong data type.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MFD003

Invalid input. Command field unknown.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MFD004

Invalid input. Too many parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MFD005

Previous command still in progress.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

### MFD006

Wrong/unequipped customer.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**MFD007**

Wrong argument/invalid parameter.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFD008**

Invalid TN. Loop out-of-range. Loop range is 0 to 159.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFD009**

Invalid TN. Shelf out-of-range. Shelf range is 0 to 3.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFD010**

Invalid TN. Card out-of-range. Card range is 1 to 10.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFD011**

Invalid TN. Unit out-of-range. Unit range is 0 to 1.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFD012**

Wrong Argument. Digit out-of-range. Digit range is 1 to 30.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFD013**

Wrong Argument. Level out-of-range. Level range is 0 to 7.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MFD014**

Specified TN is not equipped to be MFC or MFE channel.

**ACTION:** Ensure that this is the command you wanted to use.

**MFD015**

MFC/MFE/MFK channel is busy.

**ACTION:** Try later.

**MFD016**

MFC/MFE/MFK channel found faulty but has not been disabled.

Given after ATST command or in response to test initiated by system.

TN and failed digit are both output.

**ACTION:** Replace the MFE or MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFD017**

MFC/MFE/MFK channel found faulty and has been disabled. Given

after ATST command or in response to test initiated by system. TN and failed digit are both output.

**ACTION:** Replace the MFE or MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFD018**

MFC/MFE/MFK channel found faulty but has not been disabled.

Given after MTST command. TN, failed digit, and signal level received are all output.

**ACTION:** Replace the MFE or MFC card following the steps following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFD019**

MFC/MFE/MFK channel found faulty and has been disabled. Given

after MTST command. TN, failed digit, and signal level received are all output.

**ACTION:** Replace the MFE or MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.



**MFD020**

Time-out, no response. Channel not disabled. Given after ATST, MTST commands and midnight test.

**ACTION:** For repeated failures, replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFD021**

Time-out, no response. Channel is disabled. Given after ATST, MDST commands and midnight test.

**ACTION:** For repeated failures, replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFD022**

Time-out, no response. Card level, channel or channels are not disabled. Given after initialization.

**ACTION:** For repeated failures, replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFD023**

Time-out, no response. Both channels are disabled. Given after initialization.

**ACTION:** For repeated failures, replace the MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFD024**

MFC/MFE/KD3 packages not equipped. Overlay not loaded.

**ACTION:** Contact your technical support group and ask if you can do this test.

**MFD030**

Corrupted data, loop density out-of-range. Loop density range is 0 to 2.

**ACTION:** Check to make sure your data is correct and re-enter the command.

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### MFD031

Corrupted data, unit information out-of-range. Unit information range is 0 to 15.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MFD032

Self-test failed. Channel was not disabled.

**ACTION:** Use DISU l s c u in LD 54 to disable the channel.

### MFD033

Self-test failed. Channel was disabled.

**ACTION:** Use ENLU l s c u in LD 54 to enable the channel.

### MFD034 l s c

Self-test Failed, and XMFC/XMFE card disabled (all units) l s c = TN information (loop, shelf, card).

**ACTION:** Replace the MFE or MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### MFD035 l s c

Time-out due to no response. The XMFC/XMFE card missing or disabled (all units).

l s c = TN information (loop, shelf, card)

**ACTION:** Replace the MFE or MFC card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared

### MFD037

New MFC/MFE/MFK5/MFK6 units on Card 0 can only be enabled using ENLX in LD 34.

**ACTION:** To enable these units, go into LD 34 and perform ENLX0. 

## MFE — LD 54 Multifrequency Signaling

### In this chapter

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## How the MFE works

Multifrequency Compelled Signaling (MFC) or Multifrequency Signaling (MFE) provides a handshaking facility between the Meridian 1 and the Central Office (CO) or Public Exchange (PE) or between other PBXs over network and Tie trunks.

The MFD overlay program is used to diagnose, display or change the status of the MFC or MFE send/receive (S/R) cards.

LD 54 resets all available MFC or MFE cards (both channels idle) and performs loop-back tests during the midnight routines. After every SYSLOAD or power-up, all available MFC or MFE cards are initialized.

The overlay can be loaded by the system after every power-up (or SYSLOAD), as part of the daily routines, or loaded manually to enter commands.

### Hardware initialization after SYSLOAD

After system power-up, every idle MFC or MFE card is initialized (self-tested). During this test the card is disabled (the LED on the faceplate is ON) and the S/R card microprocessor executes sequential loop-back tests on both channels.

These tests entail looping the sender output of each card to the receiver input. The sender transmits all thirty tone pairs (1 to 15 digits for both DOD/DID modes) with a default signal level of zero. Each time the receiver detects a tone pair, the microprocessor verifies the digit received. At the end of the test a command to enable the card is issued and the microprocessor sends the test results to the CPU.

## Loop-around test during daily routines

This loop-around test is conducted by the system during the daily routines. The loop-around test is identical to the one conducted after power-up except for the following points:

- ◆ the test is conducted on one channel at a time for all available MFC or MFE cards
- ◆ the MFC or MFE S/R card remains enabled (the LED on the faceplate is OFF)
- ◆ the self-test can also be loaded manually by issuing a command on the specified channel

## Loop-around test by command

The loop-around tests are performed by maintenance personnel on a specified channel of the MFC or MFE S/R card. There are two types of tests:

- ◆ the first is identical to the daily routine test which is conducted on the specific channel
- ◆ the second is conducted on a specific channel for a specified digit and signal level

LD 54 also performs the following functions:

- ◆ resets all idle MFC or MFE cards once a day during the midnight routines
- ◆ enables and disables the MFC or MFE card or channel
- ◆ determines the status of the MFC card or the channel
- ◆ lists all disabled MFC or MFE channels
- ◆ handles other common overlay operations (such as clearing alarms)

**Note 1:** Use the DISL command to force-disable the MFC or MFE channel or card.

**Note 2:** Use the DISI command in LD 32 to disable the card when idle.

**Note 3:** No more than 50% of MFC channels can be disabled at one time as a result of system or manually initiated tests. However, this constraint does not apply when using disable commands.

## MFC/MFE Error Handler and counter

The MFC/MFE Error Handlers are resident programs that monitor the number of MFC or MFE signaling errors. A one-word error field in the MFC or MFE block is initialized to zero. The Error Handler program allows a maximum of 10 errors. After every successful use of the MFC or MFE channel, the error field is decremental by one, if it is not already at zero. After every failure of the MFC or MFE channel the error field is incremental by one.

With X11 software, the Error Handler program generates only the **ERR700 L S C U** message. When an Error Handler code is output, the MFD overlay must be loaded manually and the MFC or MFE channels tested.

| MFE common commands        |                                                                                                                                                                                                          |         |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                    | Description                                                                                                                                                                                              | Release |
| <b>Clear display/alarm</b> |                                                                                                                                                                                                          |         |
| <b>CDSP</b>                | Clear the maintenance display on active CPU.                                                                                                                                                             | basic-1 |
| <b>CMAJ</b>                | Clear major alarm, reset power fail transfer and clear power fault alarm.                                                                                                                                | basic-1 |
| <b>CMIN ALL</b>            | Clear minor alarm indication on all attendant consoles.                                                                                                                                                  | basic-1 |
| <b>CMIN c</b>              | Clear minor alarm indication on attendant consoles for customer c.                                                                                                                                       | basic-1 |
| <b>Status</b>              |                                                                                                                                                                                                          |         |
| <b>STAT</b>                | List all disabled MFC channels in the system.                                                                                                                                                            | basic-1 |
| <b>STAT I s c (u)</b>      | Get status of specified MFC or MFE card or unit. Status is one of IDLE, BUSY, MBSY, DSBL or UNEQ for both channels.                                                                                      | basic-1 |
| <b>Disable device</b>      |                                                                                                                                                                                                          |         |
| <b>DISC I s c</b>          | Disable specified MFC or MFE card.<br>LED on card is ON when disabled.                                                                                                                                   | basic-1 |
| <b>DISU I s c u</b>        | Disable specified MFC or MFE channel.<br>When the other unit on the card is also in a disabled state in the software, a message is sent to disable the MFC or MFE card. LED on card is ON when disabled. | basic-1 |
| <b>Enable</b>              |                                                                                                                                                                                                          |         |
| <b>ENLC I s c</b>          | Enable specified MFC or MFE card.<br>Response is <b>OK</b> . A message is sent to the MFC or MFE card to turn off the LED.                                                                               | basic-1 |
| <b>ENLU I s c u</b>        | Enable specified MFC or MFE channel.<br>Response is <b>OK</b> . A message is sent to the MFC or MFE card to turn off the LED.                                                                            | basic-1 |

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| MFE common commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Release |
| Reset/Initialize                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>MIDN 0</b>                   | Reset all idle MFC or MFE cards.<br><br>Resets all idle MFC or MFE cards and performs loop-around tests on all idle channels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | basic-1 |
| <b>MIDN 1</b>                   | Initialize all idle MFC or MFE cards (recommended after installation).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | basic-1 |
| Test                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>ATST I s c u</b>             | Test automatic loop-around for specified unit.<br><br>Performs automatic loop-around test on specified unit with default signal level of zero.<br><br>All 30 tone pairs are tested and verified by the card microprocessor. Digits 1 to 15 signify Forward Signals 1 to 15 (DOD mode) and digits 16 to 30 signify Backward Signals 1 to 15 (DID mode).<br><br>The response is <b>OK</b> when the unit passes the test and is enabled. If the receiver sends no message within a predefined time period, an error message indicating timeout is printed. If the receiver indicates it has received a different signal than that sent, the failed signal, an error message and the TN are printed. | basic-1 |
| End                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>END</b>                      | Stop further testing or cancel active command.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | basic-1 |



**MFE common commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Manual loop-around**

**MTST I s c u  
dl** Manual loop-around test on unit with specified digit level. basic-1

MFC-30 tone pairs are tested and verified by the CPU. Digits 1 to 15 indicate forward signals 1 to 15 (DOD Mode) and digits 16 to 30 indicate backward signals 1 to 15 (DID mode).

MFE-15 tone pairs are tested and verified. Digits 1-15 represent Forward Signals 1-15 (DID mode). Digit 0 represents the control frequency.

The MFC signal levels require a +3 dBm gain at the trunk end. The following list shows the level codes, their value at the S/R card output, and their value at the trunk.

| Digit level | Level Values<br>(at S/R card) | Level Values<br>(at trunk) |
|-------------|-------------------------------|----------------------------|
| 0           | 8 dBm                         | 5 dBm                      |
| 1           | 11 dBm                        | 8 dBm                      |
| 2           | 12 dBm                        | 9 dBm                      |
| 3           | 13 dBm                        | 10 dBm                     |
| 4           | 14 dBm                        | 11 dBm                     |
| 5           | 15 dBm                        | 12 dBm                     |
| 6           | 16 dBm                        | 13 dBm                     |
| 7           | 35 dBm                        | 32 dBm                     |

The MFE signal level 0=-10.5 dBm level with skew -7.0 dBm control frequency level. Signal levels 1-7 are used for internal test purposes.

The response is OK when the unit passes the test and is enabled. If the unit fails the test, the appropriate error message and the TN are printed.

## MFE message format

The MFE messages identify software and hardware errors during call processing. Output is in the following format:

**MFExxx MFETN TRKTN**

The mnemonics description is as follows:

**xxx** = the Error code number

**MFETN** = the MFE register TN (packed format)

**TRKTN** = the Trunk TN associated with the MFETN (packed format)

## MFE messages

### MFE001

Noisy Multifrequency Signaling (MFE) card hardware.

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### MFE002

Large twist (hardware).

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### MFE003

Three frequencies (hardware).

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFE004**

No inter-digit pause (hardware).

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFE005**

Invalid decision (hardware).

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFE006**

MFE card firmware fault (hardware).

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFE007**

Illegal signal 11 to 15 not supported (hardware).

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFE008**

Signal sent is invalid at this time (hardware).

**ACTION:** Replace the MFE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFE009**

Software time-out (software).

**ACTION:** Contact your technical support group.

**MFE010**

Undefined/invalid signal received (software).

**ACTION:** Contact your technical support group.

**MFE011**

Signal not expected (software).

**ACTION:** Contact your technical support group.

# MFE

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### MFE012

Undefined function (software).

**ACTION:** Contact your technical support group.

### MFE013

Outgoing calls not allowed (software).

**ACTION:** Contact your technical support group.

### MFE014

MFE table not defined (software).

**ACTION:** Contact your technical support group.

### MFE015

Not ready to send (software).

**ACTION:** Contact your technical support group. 

## MFK — Multifrequency Signaling for KD3

### MFK messages

Multifrequency Signaling for KD3 is a resident program. MFK does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

#### MFK001

Noisy MFK card.

**ACTION:** Replace the MFK card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### MFK002

Large twist.

**ACTION:** Contact your technical-support group.

#### MFK003

Three frequencies.

**ACTION:** Contact your technical-support group.

#### MFK004

No interdigit pause.

**ACTION:** Contact your technical-support group.

#### MFK005

Invalid decision.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## MFK006

MFK card firmware fault.

**ACTION:** Replace the MFK card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## MFK007

Illegal signal.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## MFK008

Signal sent is invalid at this time.

**ACTION:** Contact your technical-support group.

## MFK009

Software timeout.

**ACTION:** Contact your technical-support group.

## MFK010

Undefined signal received.

**ACTION:** Contact your technical-support group.

## MFK011

Signal not expected.

**ACTION:** Contact your technical-support group.

## MFK012

Undefined function.

**ACTION:** Contact your technical-support group.

## MFK014

MFK table not defined.

**ACTION:** Contact your technical-support group.

## MFK015

Not ready to send.

**ACTION:** Contact your technical-support group. 

## MFR — LD 34 Multifrequency Receiver

The Multifrequency Receiver card receives multifrequency signals for the Feature Group D package.

| MFR commands                       |                                                                                       |         |
|------------------------------------|---------------------------------------------------------------------------------------|---------|
| Command                            | Description                                                                           | Release |
| <b>Test all MFR Units</b>          |                                                                                       |         |
| <b>MFR</b>                         | Test all Automatic Number Identification (ANI) Multifrequency receiver units.         | fgd-17  |
| <b>Test MFR Units on this loop</b> |                                                                                       |         |
| <b>MFR loop</b>                    | Test all Automatic Number Identification (ANI) Multifrequency receivers on this loop. | fgd-17  |
| <b>Test MFR Card or unit</b>       |                                                                                       |         |
| <b>MFR I s c u</b>                 | Test Automatic Number Identification (ANI) Multifrequency receiver card or unit.      | fgd-17  |

## MFR Messages

### MFR001 l s c u

MFR unit did not respond. The specified MFR unit has been disabled.

**ACTION:** Replace the indicated MFR card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### MFR002 l s c u

MFR card self-test failed. N is the failure. The specified MFR card has been disabled.

1 = EPROM failed

2 = Processor failed

3 = Invalid result

**ACTION:** Replace the indicated MFR card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### MFR003 l s c u n1 n2 nn

MFR unit failed MF tones test, where **n1**, **n2**, etc. is the list of input messages received by the MFR. In a successful test, 30 input messages are received, corresponding to KP, 0-9, ST, ST', ST'' and ST'''. Each tone input messages is followed by an interdigit silence input message. The specified card has been disabled. Suspect faulty MFS if fault persists or if MFR units on more than one card are shown faulty.

**ACTION:** Replace the indicated MFR card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared. 



## MFS — LD 46 Sender Diagnostic for ANI

### In this chapter

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| MFS common commands. ....          | 813 |
| MF Sender diagnostic for ANI ..... | 815 |
| MFS messages .....                 | 815 |

Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter of this guide.

## How the MFS works

LD 46 is used to maintain the Multifrequency Sender (MFS) card. The MFS card provides multifrequency signals of Automatic Number Identification (ANI) digits over Centralized Automatic Message Accounting (CAMA) trunks to a toll switching CAMA, Traffic Operator Position System (TOPS) or Traffic Service Position System (TSPS).

The MFS diagnostic overlay can be run manually to enter commands, or it can be run in the background, during the daily routines. It performs the following tests:

- ◆ checks that the MFS card responds to system I/O functions
- ◆ tests the 30-channel memory locations, the 480 (30 x 16) digit buffer memory locations and the 64 First-in, First-out locations
- ◆ exercises all 15-digit codes with digit strings from 2 to 16 digits long and verifies both the 68 ms pulse width and whether each string outpulses to completion

| MFS common commands  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Release |
| <b>Clear display</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>CDSP</b>          | Clear the maintenance display on the active CPU.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | basic-1 |
| <b>CMAJ</b>          | Clear major alarm and resets power fail transfer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | basic-1 |
| <b>CMIN ALL</b>      | Clear minor alarm indication on all Attendant Consoles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | basic-1 |
| <b>CMIN c</b>        | Clear minor alarm indication on Attendant Consoles for customer c.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | basic-1 |
| <b>MFS Status</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>STAT loop</b>     | <p>Get status of MFS loop.</p> <p>Response is:</p> <p><b>UNEQ</b> — loop is unequipped</p> <p><b>DSBL</b> — loop is disabled</p> <p><b>CHAN xx</b> — number of channels busy</p> <p><b>xx DSBL xx BUSY</b> — number of channels disabled and busy</p> <p><b>NOT MFS</b> — loop is not an MFS loop</p> <p><b>FAULTY HW: NO RESPONSE</b> = loop identified as faulty by the LRIP function. Refer to the FHW chapter.</p>                                                                                                                                                                                                             | basic-1 |
| <b>Disable MFS</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>DISL loop</b>     | <p>Disable MSF loop.</p> <p>For NT8D17 Conference/TDS cards see note with ENLL command.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | basic-1 |
| <b>DISX loop</b>     | <p>Disable NT8D17 Conference/TDS card on loop L and L + 1.</p> <p>Disables all functions on the NT8D17 Conference/TDS card. Both the even numbered TDS/MFS loop and adjacent conference loop are disabled. Loop = 0, 2, 4...158</p> <p><b>Note 1:</b> The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions provided the card has not been hardware disabled by the faceplate switch. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card.</p> <p><b>Note 2:</b> This command can be used in LD 34, LD 38 and LD 46.</p> | xct-15  |

# MFS

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| MFS common commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Release |
| <b>Enable MFS</b>               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| <b>ENLL loop</b>                | <p>Enable loop.</p> <p><b>Note:</b> For Conference/TDS cards the DISX and ENLX commands must be used whenever the faceplate switch of the card has been toggled. ENLL will software enable the card but the card will not reset properly.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | basic-1 |
| <b>ENLX loop</b>                | <p>Enable NT8D17 Conference/TDS card on loop L and L + 1. Enables all functions on the NT8D17 Conference/TDS card. Both the even numbered TDS/MFS loop and adjacent conference loop are enabled. Loop = 0, 2, 4...158</p> <p>If one of the loops is already enabled, it is disabled and then both loops are enabled.</p> <p>This command initiates card tests and downloads software.</p> <p><b>Note 1:</b> The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions, provided the card has not been hardware disabled by the faceplate switch. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card.</p> <p><b>Note 2:</b> This command can be used in LD 34, LD 38 and LD 46.</p> <p><b>Note 3:</b> The Conf/TDS card is not enabled automatically when it is inserted.</p> <p><b>Note 4:</b> Enabling more than 16 conference loops may cause system to lock-up.</p> | xct-15  |
| <b>MF Tone</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| <b>TONE loop</b>                | Enter input mode to provide MF tone bursts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | basic-1 |
| <b>TONE loop ALL</b>            | <p>Provide MF tone bursts for all digits on specified loop.</p> <p>Provides MF tone bursts for all digits 1 to 9, 0, 11 to 15, in that order.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | basic-1 |
| <b>Test MFS</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| <b>MFS loop</b>                 | Test and enable MFS loop.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |
| <b>End</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| <b>END</b>                      | Stop all current testing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |

## MF Sender diagnostic for ANI

The Multifrequency Sender card provides multifrequency signals of Automatic Number Identification (ANI) digits over Centralized Automatic Message Accounting (CAMA) trunks to a toll switching CAMA, Traffic Operator Position System (TOPS) or Traffic Service Position System (TSPS).

## MFS messages

### **MFS000**

Program identifier.

**ACTION:** The MFS program is loaded and ready for you to input commands.

### **MFS001**

Invalid command. Only the commands listed are allowed.

**ACTION:** Ensure that this is the command you wanted to use.

### **MFS002**

Incorrect use of command.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### **MFS003**

The customer specified does not exist or is out-of-range.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### **MFS004**

Loop specified is out of range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## MFS005

This command is only allowed to be used from an SL-1 maintenance set.

**ACTION:** Use END to abort the program. Reload the program from a maintenance telephone. If you need help with maintenance telephone functions, refer to the *You should know this* chapter in this guide.

## MFS006

Could not establish a channel connection between the maintenance telephone and the MF sender.

**ACTION:** Use LOOP x in LD 30 to run a signaling test. Replace the component or card causing the faulty condition following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## MFS020 loop

MF sender failed to respond.

**ACTION:** Ensure that the faceplate switch is set to ENB and that the card is inserted properly. If the MFS card still fails to respond, replace the MFS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## MFS021 loop

MF sender has a channel memory fault.

**ACTION:** Replace the MFS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## MFS022 loop

MF sender has a digit buffer memory fault.

**ACTION:** Replace the MFS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFS023 loop d**

MF sender does not output pulse for the digits **d** listed.

Applications with NT or XT machine types only can disregard this message. Operation of the MFS card is unaffected.

**ACTION:** Replace the MFS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFS024 loop**

MF sender has a fault in the FIFO stack memory. This fault is not service affecting.

**ACTION:** Replace the MFS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**MFS100**

On ENLX (enable Conference/TDS/MFS card) did not receive the message verifying download completion within six seconds.

**ACTION:** Use DISX to disable the card and use the ENLX command to enable the MFS card.

**MFS101**

Time out on Digit Interrupt for Conference/TDS/MFS card.

**ACTION:** Use DISX to disable the card and then use ENLX to re-enable the card. If the problem persists, replace the card following the *Hardware replacement* guide.

**MFS102**

Cannot use the ENLX (Enable) or DISX (Disable) commands on a non-Conference/TDS/MFS card.

**ACTION:** Ensure that this is the command you wanted to use.

**MFS103**

The Conference/TDS/MFS card is already enabled/disabled.

**ACTION:** Ensure that this is the command you wanted to use.

**MFS104**

Received an unexpected message from a Conference/TDS/MFS card.

**ACTION:** Replace the card following the steps in the *Hardware replacement* guide. 

# MFS

**818** LD 46 MF Sender Diagnostic for ANI

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## Multi-purpose ISDN Signaling Processor

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Basic Rate Interface Northern Telecom Publications for details. 

# MISP

**820** Multi-purpose ISDN Signaling Processor

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## MPH — Meridian Packet Handler

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Northern Telecom Publications for details. 



## MRB — Message Registration Block

### How the MRB works

Message Registration Block is a resident program. MRB does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

Message Registration Block messages are output in response to commands or prompts/responses related to the Message Registration feature.

### MRB messages

#### MRB028

The unit to be tested is not message waiting PBX type.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

#### MRB029

The unit to be tested is not idle.

**ACTION:** Wait for the unit to become idle and re-enter the command.

#### MRB030

The unit to be tested is not lamp equipped.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

#### MRB900

Wrong number of input fields to prompt 'FUNT'.

**ACTION:** Check the database and re-enter the command

**MRB901**

Unable to match input with stored mnemonics for prompt.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB910**

Wrong number of input fields for prompt 'REQ' when function 'MRBK', 'CRST', or 'DISP' has been invoked.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB911**

Unable to match input with stored mnemonics.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB912**

Warning: Unprotected data store below safety limit.

**ACTION:** Reallocate or add memory.

**MRB913**

Warning: Protected data store below safety limit.

**ACTION:** Reallocate or add memory.

**MRB920**

Wrong input type for prompt DBGN, BFNO.

**ACTION:** Check the database and re-enter the command.

**MRB921**

MR data block number out-of-range (0-99)

**ACTION:** Check the database and re-enter the command.

**MRB922**

Block already exists.

**ACTION:** Ensure that this is the command you wanted to use.

**MRB923**

Block does not exist.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**MRB930**

Wrong input type for prompt DLST, LSRM.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB931**

Entry for prompt DN out-of-range (0-99).

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB932**

Last room number illegal (0-99).

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB940**

Wrong input type for prompt DN, RMNO.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**MRB941**

DN or room number out of assigned range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB950**

Input parameter must be between 0 and 24, inclusive.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB951**

Input parameter must be between 0 and 7, inclusive.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**MRB952**

CRT/TTY has not been allocated for MR in the configuration record.

**ACTION:** Check the database in LD 17, correct and if applicable, re-enter the command.

# MRB

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### MRB961

Enter parameter between 0 and 31, inclusive.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MRB962

Customer does not have any MR blocks allocated.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### MRB963

Password does not have access to this customer data.

**ACTION:** Contact your technical support group and obtain the proper password to continue.

### MRB971

Enter parameter between 0 and 31 inclusive.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MRB980

Wrong number of input fields to prompt **all**.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MRB981

Unable to match input with stored mnemonics for prompt **all**.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MRB990

Wrong input data type.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### MRB991

Number of input characters greater than four.

**ACTION:** Check to make sure your data is correct and re-enter the command. 



## MSDL — LD 48 Multi-purpose Serial Data

### In this chapter

|                                                |     |
|------------------------------------------------|-----|
| How the MSDL works . . . . .                   | 828 |
| MSDL — Multipurpose Serial Data Link . . . . . | 829 |
| MSDL commands . . . . .                        | 830 |
| MSDL messages . . . . .                        | 837 |

# MSDL

## 828 Multi-purpose Serial Data Link

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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter of this guide.

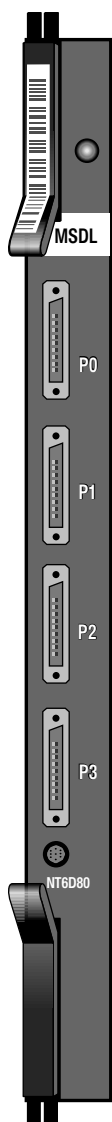
### How the MSDL works

The commands used to provide enable, disable, status, and test functions on the Multi-purpose Serial Data Link cards are provided in LD 48 - Link Diagnostic, LD 96 - D-channel Maintenance, and LD 37 I/O Diagnostic.

Problems on the Multi-purpose Serial Data Link cards are indicated by MSDL and IOD messages.

For additional information, refer to the *IDSN PRI description and administration* or the *Multi-purpose Serial Data Link description* or the *Fault Clearing Guide Book 3 of 3, Managenent Applications*.

## MSDL — Multipurpose Serial Data Link



553-0194T MSE

A Meridian 1 system can support up to 16 Multipurpose Serial Data Link (MSDL) cards to a maximum of 64 ports.

### Purpose

One MSDL card provides a serial interface for four D-channels (DCH), one Application Module Link (AML), and one SDI terminal (DTE or DCE).

TTY and printer asynchronous applications can only be configured on port 0. All ports can be configured for synchronous applications, such as DTE or DCE, and RS232 or RS422.

### Function

The MSDL MPU provides the following:

- ◆ self-tests
- ◆ communicates with the Meridian 1 CPU
- ◆ downloads peripheral software from the Meridian 1 CPU to control MSDL parameters
- ◆ coordinates data flow in conjunction with the Meridian 1 CPU
- ◆ management of the data link layer and network layer signaling to control connection and disconnection
- ◆ control of its own operation, initialization, and addressing

### Features

The MSDL card faceplate includes the following:

- ◆ an LED, when lit indicating a disabled MSDL card
- ◆ four I/O ports using 26 pin female SCSI II connectors
- ◆ a proprietary port for monitoring MSDL functions

On the component side of the card, switches S9 and S10 set the device number to match DNUM in LD 17. Switches S1 to S8 set ports to DTE or DCE, and RS232 or RS422.

# MSDL

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### MSDL commands

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Status of MSDL

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>STAT MSDL (x) (FULL)</b> | Get the status of MSDL card (x) (additional information).<br><br>This command outputs the status of MSDL cards. Without any optional parameters (no card number, etc.), the status of all MSDL cards in the system is output.<br><br>When a card number alone is provided with the command, the status of the card is output along with additional information regarding the applications configured on the card.<br><br>Specifically, for each D-channel or AML configured on the card, the application name, logical number and port status is output.<br><br>For example:<br><br><b>MSDL x: ENL</b><br><b>AML 11 DIS PORT 1</b><br><b>DCH 25 OPER PORT 2</b><br><b>AML 03 OPER PORT 3</b><br><br>If the FULL option is entered along with the MSDL number, the Meridian 1 outputs all the information for the STAT MSDL x command along with the following additional information:<br><br>— card ID<br>— bootload firmware version<br>— basecode version<br>— basecode state<br>— when the basecode was activated (if it is active)<br>— each application version<br>— each application state<br>— when each application was activated (if it is active) | msdl-18 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**MSDL commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Status of MSDL**

The card status is output on the first line and can be any one of the following:

**MSDL x: ENBL - card is enabled**

**MSDL x: MAN DSBL - card disabled by the DIS MSDL command**

**MSDL x: SYS DSBL reason - card has been disabled by the system**

The system disabled state may be due to any of the following:

**1. SYS DSBL - NOT RESPONDING**

If the MSDL is in this state, the implication is that the Meridian 1 has attempted to communicate with the MSDL and was not successful. It is possible that the card is not present in the shelf. If it is present, then it is possible that the software on the card is unable to respond to messages from the Meridian 1.

**Action:** Check to see if the card is properly inserted in its slot. If it is (and has been for more than a few minutes), then check the maintenance terminal for MSDL or ERR messages and take the appropriate action for the error message.

It may be that the rotary switch setting on the MSDL card is not set properly. To keep the Meridian 1 from continuously attempting recovery of the MSDL, use the DIS MSDL x command to put the card in the Manually Disabled (MAN DSBL) state.

**2. SYS DSBL - SELF-TESTING**

If the MSDL is in this state, self-tests are in progress.

**Action:** Wait for the self-tests to complete and for the Meridian 1 to examine the results. Under normal circumstances, the self-tests take less than one minute to complete. However, when an erasable EPROM on the card has been cleared, the self-tests may take between five and six minutes to complete. Do not to take any action at this time.

## MSDL commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Status of MSDL

#### 3. SYS DSBL - SELF-TESTS PASSED

This is a transient state. A card in a transient state has successfully completed the self-tests and the Meridian 1 is either beginning to download the MSDL base software, or has just completed downloading the MSDL base software and is about to attempt to enable the card.

**Action:** Wait for the Meridian 1 to begin the next step of recovery. If a more immediate recovery is desired, use the DIS MSDL x command followed by the ENL MSDL x command. This causes essentially the same recovery action to be taken. However, it may be faster (since it is being done as a result of input from the craftsman).

#### 4. SYS DSBL - SELF-TESTS FAILED

If the MSDL is in this state, the self-tests have executed and failed on this card.

**Action:** Use the STAT MSDL x command to determine reason for self-test failure. Disable the MSDL card using the DIS MSDL x command, then use the SLFT MSDL x command to execute the self-tests again.

If the self-tests pass, attempt to enable the card using the ENL MSDL x command. If the card fails the self-tests again, record the results and replace the card.

#### 5. SYS DSBL - SRAM TESTS FAILED

If the MSDL is in this state, the self-tests have been run and passed. However when the Meridian 1 attempted to perform read/write tests to the shared RAM on the MSDL, it detected a failure.

**Action:** This is the same as for a self-test failure. If the attempt to enable the card fails, record the results and replace the card.

**MSDL commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Status of MSDL****6. SYS DSBL - OVERLOAD**

The Meridian 1 has received too many messages from the MSDL. This is unacceptable as excessive demand can interfere with other system functions.

**Action:** If the MSDL is left in this state, the Meridian 1 will attempt to bring the card back into service within a few minutes. If this is not required, disable the card using the DIS MSDL x command.

It is also advisable to identify a specific port or application that may be responsible for the overload. The identification can be made by disabling individual links/ports on the MSDL and letting the remaining links/ports operate normally.

**7. SYS DSBL - RESET THRESHOLD**

If the MSDL is in this state, the Meridian 1 has detected more than four resets within ten minutes. A normal, operating card should not reset so often.

It is possible that the card may be in this state due to a Fatal Error or Self-test failure from which no recovery was successful. (As the recovery from Fatal Errors and Self-test failures begins with resetting the card, repeated attempts at recovery may cause the reset threshold to be reached.)

**Action:** Disable the card using the DIS MSDL x command and execute the SLFT MSDL x command. If the self-tests pass, attempt to enable the card using the ENL MSDL x command. If the problem recurs, try a forced downloading of the software to the MSDL using the ENL MSDL x FDL command.

If the problem continues to recur and resets continue because of a repeated fatal error, attempt to isolate the problem by disabling all links/ports controlled by one application (e.g., all D-channels or all AMLs). If no manual intervention is taken by the craftsperson, the Meridian 1 will attempt to bring the card back into service beginning at midnight.

## MSDL commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Status of MSDL

#### 8. SYS DSBL - FATAL ERROR

If the MSDL is in this state, the card encountered a fatal condition from which it could not recover. In response to the STAT command, the cause of the fatal error will be displayed.

If the STAT command is not entered while the card is in this state, the MSD302 message printed at the time of the state transition will indicate the cause of the fatal error.

**Action:** The Meridian 1 will attempt to bring the card back into service automatically. While the card is in this state, no action is required. If the Meridian 1 is unable to recover the card, the system disabled substate will be changed to indicate the reason recovery was not possible. The craftsperson should then take the recommended action for that new substate.

#### 9. SYS DSBL - NO RECOVERY ATTEMPTED UNTIL MIDNIGHT

When this is output after the SYS DSBL message, the Meridian 1 has attempted to recover the card but has repeatedly failed. One example of this condition is when the background recovery mechanism has failed to download the MSDL Base Code five times in a row.

**Action:** Disable the card using the DIS MSDL x command. Test the card using the SLFT MSDL x command, and if the self-tests pass, enable the card using the ENL MSDL x command.

If the downloading of the MSDL Base Code is necessary, it will be attempted in response to the enable command. If no manual intervention is taken, the Meridian 1 will attempt recovery again beginning at midnight.



**MSDL commands (continued)**

| Command                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Release |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Disable</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |
| <b>DIS MSDL x (ALL)</b> | <p>Disable MSDL device x (card).</p> <p>When entered without the optional parameter, the disable MSDL command attempts to disable the MSDL card. Disabling the card via this command is permitted from either the Enabled (ENBL) state or the System Disabled (SYS DSBL) state.</p> <p>When attempted on an MSDL that does not have any ports enabled, this command will succeed. The only exception to this is when the disable card message needs to be sent to the card, and there is no buffer currently available for building the message (MSDL015 is output to the TTY). In this unusual situation, attempting the command again will most likely result in success.</p> <p>Application Overlays are not erased when the MSDL is disabled.</p> <p>If there are any ports that are still running in the MSDL card, the ALL option must be used to force disable the active ports. As an alternative to this command, the craftsman can use the commands provided by the applications to disable the ports (D-channels or AML) individually, and then use the DIS MSDL x command.</p> <p>The command DIS MSDL x ALL is not allowed if the active TTY (the terminal from which the command was entered) is supported on the MSDL card in question.</p> <p>Software disable the logical channel prior to disabling the physical DNUM port.</p> | msdl-18 |

# MSDL

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### MSDL commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

#### Enable

|                                  |                                                                                                                                                                                                                                                                                              |         |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>ENL MSDL x<br/>(ALL, FDL)</b> | Enable MSDL device x (card, Forced Download).<br><br>When entered without any of the optional parameters, the enable MSDL command attempts to enable the MSDL card. Enabling the card via this command is only permitted if the card is currently in the Manually Disabled (MAN DSBL) state. | msdl-18 |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

The enable card succeeds if:

1. the card is resident in the shelf
2. it has passed all the self-tests
3. the MSDL base software has been downloaded and is responding

If the MSDL base software and any configured application software has not been downloaded, or if the version of the software on the card is different from the version on the system disk, software download occurs. While download is in progress, a series of dots (. . .) are output.

If the FDL (forced download) option is entered, the MSDL base software and all the configured applications will be downloaded regardless if the application already exists on the card. Following the download, the card will be enabled.

If the ALL option is entered, the card will be enabled (provided the three conditions mentioned above are met), all the applications will be downloaded if necessary and then an attempt will be made to enable all the links/ports configured on the card.

Additionally, the enable command with the ALL option can be entered when the card is already in the enabled state. This allows you to enable any disabled links/ports through one command. It is not possible to use both the ALL and the FDL options in the same command.

#### Reset MSDL

|                   |                      |         |
|-------------------|----------------------|---------|
| <b>RST MSDL x</b> | Reset MSDL device x. | msdl-18 |
|-------------------|----------------------|---------|

This command causes a power-on reset on the MSDL, followed by a series of short self-tests. Resetting the card via this command is only permitted if the card is in the Manually Disabled (MAN DSBL) state.

**MSDL commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Test MSDL**

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SLFT MSDL<br/>x</b> | <p>Execute a self-test for MSDL device x.</p> <p>This command causes a power-on reset on the MSDL, which will be followed by a complete set of self-tests. This command only executes the self-tests if the card is in the Manually Disabled (MAN DSBL) state.</p> <p>If the self-tests pass, a message indicating this and card id is output.</p> <p>If the self-tests fail, a message is output describing which self-test failed. It is useful to note that the first test that fails will abort the self-test sequence, so this command only indicates one test failure, even if multiple tests might fail.</p> |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**MSDL messages****MSDL001**

The number of parameters for the MSDL command is incorrect.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation.

**MSDL002**

The card number in the command is out-of-range or invalid.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation.

**MSDL003**

Since this command is only valid for use on the MSDL card in this Overlay, the first parameter must be MSDL.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation.

## MSDL004

Cannot reset the card or execute self-tests right now because the card is not in Manually Disabled state (MAN DSBL).

**ACTION:** Use DIS MSDL x to disable the card.

## MSDL005

Failed to reset; could not write command to card, due to the following:

1. Card is probably not present.

**ACTION:** Check to make sure the card is seated in the backplane.

2. The address switch settings on the card do not agree with the database.

**ACTION:** Check that the switch settings of S9 and S10 match the DNUM in the configuration record. To get the DNUM, refer to the *administration input/output guide* and use LD 22 PRT CFN.

## MSDL006

Cannot enable the card unless it is in Manually Disabled (MAN DSBL) state.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation. If your data is correct, use DIS MSDL x to disable the card.

## MSDL007

Cannot disable card unless it is in the Enabled (ENBL) state.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation. If your data is correct, use ENL MSDL x to enable the card.

## MSDL008

Cannot reset the card (or execute self-tests) on the card right now since the device enabled bit is set, meaning a message response is currently pending.

**ACTION:** Attempt the self test command again. Assuming the card is Manually Disabled and when the response pending condition clears, the reset and self tests should run.

**MSDL011**

No response received to the enable card command.

**ACTION:** To find out why the card did not respond to ENL MSDL x, use RST MSDL x, or use the SLFT MSDL x to start a self test. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**MSDL012**

The response message from the card to the Overlay indicates failure to enable/disable.

**ACTION:** To find out why the card did not respond, use RST MSDL x, or use the SLFT MSDL x to start a self test. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**MSDL014**

No response received to the disable card command. The card is set to the Manually Disabled (MAN DSBL) state anyway.

**ACTION:** Information only, no action required. However to find out why the card did not respond to DIS MSDL x, you may want to use RST MSDL x, or use the SLFT MSDL x to start a self test.

**MSDL015**

The command entered requires that a message be sent to the MSDL. The Meridian 1 was unable to build the message since the buffer was not free.

**ACTION:** Try again later. If this message continues to be generated and if the card is enabled, wait for a few minutes, as the card may have encountered a problem that warrants recovery. If the card is manually disabled, reset the card using the RST MSDL x, or execute self tests using the SLFT MSDL x. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**MSDL016**

Failed enable attempt. If this message is not accompanied by any other error message, the card may be in the process of performing self-tests or the self-tests may have already failed.

**ACTION:** Wait a few minutes, then execute the self-tests with the SLFT MSDL x command. If the self-tests pass, use ENL MSDL x to

enable the card again. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**MSDL017**

At least one of the ports on the MSDL is currently enabled. Disabling the card is disallowed when ports are enabled unless the DIS MSDL x ALL command is used.

**ACTION:** To disable the card, use DIS MSDL x ALL.

**MSDL018**

The fourth parameter of the command is unrecognized or not implemented.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation.

**MSDL019**

The command entered required that information be read from the MSDL. The specified MSDL is not present in the system, and the information could not be read.

**ACTION:** Check to make sure the card is seated in the backplane. Check that the switch settings of S9 and S10 match the DNUM in the configuration record. To get the DNUM, refer to the *administration input/output guide* and use LD 22 PRT CFN.

**MSDL020**

The command entered required that the application information block on the MSDL be read by the Meridian 1. The block is currently being updated by the MSDL, and the system could not read the block.

**ACTION:** Try again.

**MSDL021**

Began to download the MSDL basecode but stopped before finishing. There should be an accompanying SDL error message, so refer to the information on that message for the failure reason.

**ACTION:** See the accompanying SDL error message.

**MSDL022**

The rest of the information output in response to this command is resident on the card. The card is not enabled, and the information cannot be read.

**ACTION:** To enable the card, use ENL MSDL x.

**MSDL024**

The Meridian 1 began to download an MSDL application but stopped before finishing.

**ACTION:** There should be an accompanying SDL error message, so refer to the information on that message for the failure reason.

**MSDL025**

There is currently maintenance activity on the application in question.

**ACTION:** Wait a few minutes and try again.

**MSDL026**

Disabling the MSDL when the active TTY is supported by it, is not allowed.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation.

**MSDL027**

Time out waiting for the self tests to complete.

**ACTION:** Wait at least five minutes, then try again.

Under certain unusual circumstances, the self-tests can take approximately five minutes, but this should only occur when the flash EPROM on the card is new or has been completely erased.

**MSDL028**

Cannot enable the card because it is not present in the system.

**ACTION:** If the card in question is believed to be present, check if the switch settings on the card agree with the device number entered in this command.

**MSDL029**

Incorrect password entered in response to the ENL MSDL x DBG command.

**ACTION:** Check to make sure that your data is correct and re-enter the command.

## MSDL030

The debug option for this card has already been turned on.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation.

## MSDL031

The ENL MSDL x ALL command is only valid when the MSDL is in the ENBL or MAN DSBL state.

**ACTION:** Check to make sure that your data is correct and that you have entered the right command for this situation.

## MSDL032

The MSDL card was removed from its slot, or the card reset itself during the self-tests.

**ACTION:** If the card was removed, execute the self-tests again and do not remove the card from its slot until the tests are complete. If the card was not removed, execute the self-tests again. If this message appears more than twice, replace the MSDL card.

## MSDL0033

Device locked by the Russian Call Monitoring feature. The MSDL card cannot be enabled or disabled.

**ACTION:** Action: Contact your technical support group.

## MSDL100 x

The CSTAT and CSUBSTAT fields on MSDL x indicate the card is Manually Disabled. The Meridian 1 believes the card is Enabled. The card is placed in the System Disabled - Self- tests Passed state, and within the next few minutes, the Meridian 1 will attempt to enable the card.

**ACTION:** Information only, no action required.

## MSDL101 x

The CSTAT field on MSDL x indicates the card is no longer Enabled. The Meridian 1 will attempt to return the card to an Enabled state within a few minutes. Under certain conditions, this message is output at the same time as MSDL302.

**ACTION:** Information only, no action required.



**MSDL102 x**

No response was received from MSDL **x** to a background polling message sent periodically to each MSDL card. The purpose of this message is to ensure that the card is capable of receiving and sending messages.

**ACTION:** To find out why the card did not respond, use RST MSDL **x**, or use the SLFT MSDL **x** to start a self test. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**MSDL103 x**

An Overlay was waiting for a message from MSDL **x**. Most likely, the Overlay is no longer loaded. The message the Overlay was waiting for was never received.

**ACTION:** Re-enter the command. If the card still does not respond, use RST MSDL **x**, or use the SLFT MSDL **x** to start a self test. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**MSDL104 x**

The MSDL background audit sent a message to MSDL **x**, and did not receive a response.

**ACTION:** To find out why the card did not respond, use RST MSDL **x**, or use the SLFT MSDL **x** to start a self test. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**MSDL105**

The CSTAT value read from the MSDL is invalid. This indicated one of two error conditions:

The card has encountered a severe hardware fault so that it is unable to report the error to the Meridian 1.

There may be multiple cards in the system with the same device number (switch settings) as the MSDL. When the CSTAT is read from the MSDL, it may not be the MSDL card that is responding.

**ACTION:** Be sure no other cards in the system share the device number. If so, change the device numbers. If not, replace the card.

**MSDL106 x appl**

The MSDL audit detected that there was no response to a maintenance message originated by an application **appl** on MSDL **x**.

**ACTION:** To find out why the card did not respond, use RST MSDL x, or use the SLFT MSDL x to start a self test. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

## **MSDL107 x appl y**

The Meridian 1 was unable to determine if downloading was necessary. An SDL error message should accompany this message and describe the reason for the failure. Three fields accompany this message: **x** = device number (LD 17 DNUM), **appl** = the application name, and **y** is for design use only.

**ACTION:** See the accompanying SDL error message.

## **MSDL108 x appl**

An application on MSDL x needs to be downloaded to the card. Downloading begins as soon as there is no Overlay loaded. Where: **x** = device number (LD 17 DNUM) and **appl** = the application name.

**ACTION:** Use END or \*\*\*\* to end the overlay.

## **MSDL112 x**

MSDL x has been reset in order to begin automatic recovery. Immediately following this message, the card is executing self tests. When they are finished, provided they pass, the Meridian 1 will attempt to enable the card. Where: **x** = device number (LD 17 DNUM).

**ACTION:** If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

## **MSDL201 x appl**

MSDL x sent a message to the Meridian 1 indicating an application data space has been corrupted. Where: **x** = device number (LD 17 DNUM) and **appl** = the application name.

**ACTION:** Contact your technical support group.

## **MSDL202 x appl**

MSDL x sent a message to the Meridian 1 indicating that an application on the card unexpectedly disabled itself (performed a “close”). Where: **x** = device number (LD 17 DNUM) and **appl** = the application name.

**ACTION:** Contact your technical support group.

**MSDL204 x appl**

The Meridian 1 searched the system disk to find a version of an application for MSDL x and found none. Where: **x** = device number (LD 17 DNUM) and **appl** = the application name.

**ACTION:** Contact your technical support group.

**MSDL205 x appl y z**

An error was encountered when searching the system disk to find a version of an application for MSDL x.

Where: **x** = device number (LD 17 DNUM) and **appl** = the application name. (**y** and **z** are for design use only)

**ACTION:** Refer to an accompanying SDL error message for the exact error reason. This message indicates that the Meridian 1 will attempt to enable the application in question if a version exists on the card.

**MSDL206 x appl y z**

An error was encountered when comparing a version of an application on the system disk with the version on MSDL x. Where: **x** = device number (LD 17 DNUM) and **appl** = the application name. (**y** and **z** are for design use only)

**ACTION:** Refer to the accompanying SDL error message for the exact error reason. This message indicates that the Meridian 1 will attempt to enable the application if a version exists on the card.

**MSDL207 x appl y z**

An error was encountered when downloading an application to MSDL x. Where: **x** = device number (LD 17 DNUM) and **appl** = the application name. (**y** and **z** are for design use only)

**ACTION:** Refer to the accompanying SDL error message for the exact error reason. The entire enable sequence has been aborted.

**MSDL208 x**

When preparing to download the base software to MSDL x, the card indicated that some kind of fatal error was encountered. Where: **x** = device number (LD 17 DNUM).

**ACTION:** To find out why the card did not respond, use RST MSDL x, or use the SLFT MSDL x to start a self test. If the test fails, replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

## **MSDL209 x y z**

Some memory was reclaimed within the MSDL for future use. An application on MSDL x requested that a buffer pool be freed. When this occurred, there was at least one outstanding buffer. The basecode waited for the buffer(s) to be returned to the pool before freeing the buffers, but it never returned. The buffer pool was forcibly freed by the basecode. Where: **x** = device number (LD 17 DNUM) (y and z are for design use only).

**ACTION:**

## **MSDL210**

Failed to enable the MSDL for one of the following reasons:

The card in question is not an MSDL card. For example, there may be a card in the system with switch settings that correspond to the MSDL, but is in fact not an MSDL card.

There is at least one other card in the system with switch setting identical to the MSDLS.

**ACTION:** Remove the card with the same device number as the MSDL.

## **MSDL0211 DO NOT PRINT**

An attempt to enable the T1E1 application during ENLL, timed out.

**ACTION:** Action: RST TMDI in overlay 96 and then try again.

## **MSDL0212 DO NOT PRINT**

The TMDI card could not enable the T1E1 application.

**ACTION:** Action: RST TMDI in overaly 96 and then try again.

## **MSDL0213 DO NOT PRINT**

The T1E1 application is in a transient stte and could note be enabled.

**ACTION:** Action: Wait and then try ENLL again.

## **MSDL0214 DO NOT PRINT**

A request to enable the DTI port has failed.

**ACTION:** Action: RST TMDI in overlay 96 and then try again.

## **MSDL0215 DO NOT PRINT**

A request to disable the DTI port on the TMDI failed.

**ACTION:** Action: RST TMDI in overlay 96 and then try again.

**MSDL300 data**

The MSDL background audit has changed the card state. In the cases where the card was previously enabled and now is no longer enabled, another MSDL message will indicate the reason for the state change. When making a state transition due to a fatal error on the card, the reason for the fatal error is displayed in this message. This is an informational message and requires no action by the craftsman.

Output data: **MSDL300 x FROM: aaaa TO: bbbb TIME time REASON cccc**

Where:

**x** = MSDL card number (in decimal)

**aaaa** = the status of the MSDL prior to the state change

**bbbb** = the state of the card after the state change

**time** = the time of the state change

**cccc** = reason for the error (only when **TO: SYS DSBL - FATAL ERROR**)

**ACTION:** Information only, no action required.

**MSDL301 x y z**

An expedited data unit was received. The Meridian 1 is not expecting MSDL **x** to generate any messages in its current state. However, immediately following a state transition to a disabled state, a pending message may cause this message to be displayed. This informational message indicates that the incoming message from the card was not processed due to the state change. No action is required.

Where: **x** = device number (LD 17 DNUM) and **appl** = the application name. (**y** and **z** are for design use only)

**ACTION:** Information only, no action required.

**MSDL302 x y**

Access to the memory space shared by the Meridian 1 and the MSDL (Shared RAM) has been momentarily suspended by MSDL **x**. There is no specific action to be taken as a result of this message; however, it indicates that message transfer between the Meridian 1 and the card ceased momentarily.

Where: **x** = device number (LD 17 DNUM) and **y** = the reason for the suspension. Currently the only reason supported is the value "1," which indicates that some kind of buffer corruption was detected.

**ACTION:** Information only, no action required.

**MSDL303 x y**

The Meridian 1 detected corruption in either the receive ring or the transmit ring or both, causing access to the memory space shared by the Meridian 1 CPU and MSDL **x** (Shared RAM) to be momentarily suspended.

Take no action because of this message; however, it indicates that message transfer between the Meridian 1 and the card ceased momentarily.

Where: **x** = device number (LD 17 DNUM) and **y** = a decimal number indicating where the corruption was detected. 1 means receive ring, 2 means transmit ring, and 3 means both receive and transmit rings.

**ACTION:** Information only, no action required.

**MSDL305 x y**

The Meridian 1 received 100 or more messages from MSDL **x** within two seconds. At this level of message transfer, there may be some impact to the overall system performance. The level of message transfer does not warrant removing the card from service.

Where: **x** = device number (LD 17 DNUM) and **y** = the rate of message transfer from the card to the Meridian 1 (in terms of messages per second)

**ACTION:** Information only, no action required.

**MSDL306 x y**

The Meridian 1 has received 100 or more messages from MSDL **x** within one second. At this level of message transfer, there may be some impact to the overall system performance. The level of message transfer warrants removing the card from service.

Where: **x** = device number (LD 17 DNUM) and **y** = the rate of message transfer from the card to the Meridian 1 (in terms of messages per second)

**ACTION:** Information only, no action required.

**MSDL307 x data**

MSDL **x** encountered a fatal error. Where: **x** = device number (LD 17 DNUM). The data following **x** is information read from the card regarding the error and is intended for design use only.

**ACTION:** Replace the card as per steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

---

## MSDL — LD 48 Multi-purpose Serial Data Link

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### MSDL308 x y appl data

MSDL x reported that it received a message with an invalid (bad) socket ID. Where:

**x** = device number (LD 17 DNUM)

**y** = the socket ID

**appl** = the application name

**data** = up to eight words of hex data representing the message sent

**ACTION:**

### MSDL0309 DO NOT PRINT

The TMDI output buffer is still in queue.

**ACTION:** Action: Try the operation again, or RST TMDI in overlay 96.

### MSDL0310 DO NOT PRINT

The TMDI output has not been sent to the card.

**ACTION:** Action: Try the operation again or RST TMDI in overlay 96.

### MSDL450

When an SDI port is configured on an MSDL and the Meridian 1 initializes, it may be discovered, during initialization, that the MSDL basecode or SDI application needs to be downloaded. If so, there will be a period of time following the INIT (1 to 5 minutes) where the SDI port will not function. The port automatically enables itself once downloading has completed.

**ACTION:** Information only, no action required. 

### MSDL0485

The Meridian1 recieved 200 or more messages from the MSDL port. Port put into Lockout for overload protection.

**ACTION:** Action: Identify the cause of the problem. Manually disable the AML, SDI or DCH configured on the MSDL port with one of the following commands: DIS AML x; for an AML Link, DIS TTY x; for an SDI or DIS DCH x; for a D channel. Enable the port with one of the following commands: ENL AML x; for an AML Link, ENL TTY x; for an SDI or ENL DCH x; for a D channel.

## **MSDL — LD 48 Multi-purpose Serial Data Link**

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## MWL — LD 61 Message Waiting Lamps

### How the MWL works

The program can be invoked automatically by the system as part of the daily routine or manually from an input device. It deactivates all active message waiting lamps on user telephones and resets the associated status in the system. MWL messages identify problems.

#### **Reset lamp status**

Only when message centers close and attendant consoles enter Night Service, does the program reset lamp status.

#### **How applied to digital sets**

This program does not work on digital sets.

#### **Input when manually loaded**

After manually loading LD 61, type **G** to initiate the program.

## MWL messages

### MWL000

Program has been loaded.

**ACTION:** The MWL program is loaded and ready for you to enter commands.

### MWL001

Invalid command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### MWL002

Cannot deactivate MW lamps until all MC agents out-of-service.

**ACTION:** Operate each Night Key on all MC attendant consoles to take them out-of-service.

### MWL003

Cannot deactivate MW lamps until all attendants in Night Service.

**ACTION:** Operate each Night Key on all MC attendant consoles to take them out-of-service.

### MWL500 dn tn

The TN specified has been flagged as having a faulty lamp. The unit status has been set to normal.

**ACTION:** Use PBXT in LD 32 to check the lamp(s) or check them visually. If you need help with the commands or system responses go to the *NPR* chapter in this guide. 

## NACD — Network Automatic Call

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ACD and ESN Northern Telecom Publications for details. 

# NACD

## NCT — Network Call Trace

For messages and descriptions, refer to the *maintenance input/output guide*.

Refer to ISDN Northern Telecom Publications for details. 

# NCT

## NPR — LD 32 Checking loops, shelves,

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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter in this guide.

## How the NPR works

The Network Peripheral Replacement (NPR) Overlay (LD 32), performs checks and maintenance functions on Network and Peripheral Signaling Equipment.

You can use LD 32 commands on XTD cards. The STAT command will append XTD, LDC or LGD where required.

LD 32 has the following uses:

- ◆ printing the status of Peripheral Signaling (PS), Controller and
- ◆ Network cards
- ◆ printing the status of Peripheral Equipment (PE) shelves cards and units
- ◆ disabling and enabling PS, Controller and Network cards
- ◆ disabling and enabling PE shelves, cards and units
- ◆ testing Message Waiting Lamps on 500 and 2500 sets
- ◆ listing TNs of 500 and 2500 sets with faulty Message Waiting Lamps on a specified shelf (not applicable from X11 Release 5.24 and later)
- ◆ testing Message Waiting Lamps on 2500 sets during midnight routines from Release 8 and later
- ◆ printing set and card IDs on superloops
- ◆ converting TNs in hex format to the loop, shelf, card, unit format

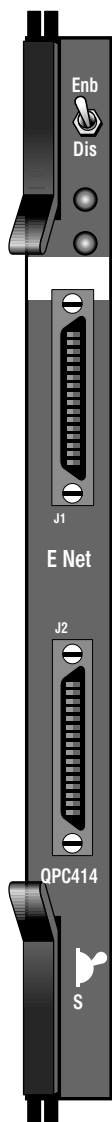
## Overlay link enhancement

With Release 19 and later software, Overlay programs 10, 11, 20 and 32 are linked, making it possible to add, print and get the status of a set without having to exit one overlay and load another.

The input processing has also been enhanced for prompts ending with a colon (:) allowing the user to enter either of the following:

- ◆ A question mark (?) followed by a carriage return (<cr>) to get a list of valid responses to that prompt.
- ◆ An abbreviated response, where the system then responds with the nearest match. For example, N for NEW. If there is more than one possible match, the system responds with **SCH0099** and the input, followed by a question mark and a list of possible responses. The user can then enter the valid response.

## ENET — Network



553-0195T ENET(

### Purpose

Dual Loop Network cards for matching timeslots are used on the Meridian SL-1S, SN and MS systems. Enhanced Network cards for random timeslots are used for Meridian SL-1N, NT, ST, XT, and can also be used in Options 21, 51, 51C, 61, 61C, 71 and 81.

### Function

Each network shelf or module can contain up to six network cards, or 12 multiplex loops. Each loop has 30 timeslots available for speech.

When specified as single density, these loops can drive up to four Peripheral Equipment (PE) modules or shelves equipped with single-density line cards. Double-density loops can drive up to two PE modules or shelves equipped with double-density line cards. Quad-density loops can drive one PE module or shelf equipped with quad-density line cards.

The network card establishes connections to its Peripheral Equipment, to provide the time and space switching of voice and data PCM between telephones, analog trunks, digitone receivers.

### Features

The faceplate includes:

- ◆ two 36-pin faceplate connectors: J1 for even numbered loops, J2 for odd numbered loops. J1 and J2 are used for interconnection with 18-pair cables to carry PCM, data, clock signals and line circuit enables to the peripheral buffer on the PE shelf
- ◆ two LEDs. When lit, the LEDs indicate that even or odd loops are disabled
- ◆ an ENB/DIS switch to hardware enable or disable both loops on the card

The network cards are slot addressed.

## Reflected fault tip

As some PE faults can reflect back to the network equipment and disable the network loop, it may be wise to check the status of the loop involved as a first step in troubleshooting a PE fault.

### Network loop commands

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Check status of network loop

|                    |                                  |         |
|--------------------|----------------------------------|---------|
| <b>STAT (loop)</b> | Give status of one or all loops. | basic-1 |
|--------------------|----------------------------------|---------|

Response is one of the following:

**x BUSY, y DSBL** = loop enabled with **x** channels busy and **y** channels disabled.

**UNEQ** = loop unequipped; not programed in LD 17.

**CTYF: I1 I2** = loop specified in STAT command is unable to receive data from loops I1, I2, etc. (i.e., continuity test failed in most recent LD 45 loop test). Probable fault in network card.

**DSBL: NOT RESPONDING** = loop disabled. Network card not responding. Card missing, disabled by switch or faulty.

**DSBL: RESPONDING** = loop disabled but the network card responds. Loop may have been disabled due to:

- manual request (DISL)
- associated Peripheral Signaling card being disabled
- overload condition on associated loop

See OVD chapter for conditions indicated by OVD messages. An attempt to enable a loop which was disabled due to overload may result in a recurrence of the overload condition: the system's service may be impaired for about 2 minutes.

**FAULTY HW: NO RESPONSE** = loop identified as faulty by the LRIP function. Refer to the FHW chapter.

**FAULTY HW: OVERLOAD** = loop identified as faulty by the LOIP function. Refer to the FHW chapter.

**Network loop commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Disable a network loop**

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>DISL loop</b> | <p>Disable network loop. When operation is complete system responds with a line feed and a dot.</p> <p>All units on a loop go into maintenance busy mode when disabled using the DISL command. The shelves on a loop must be individually re-enabled through the ENLS command. Any telephones that were in lockout mode show as idle, then go into lockout mode again 30 seconds after any unit on the shelf requests dial tone.</p> | basic-1 |
| <b>DISN loop</b> | <p>Disables a network card, where loop is the number of the even or odd loop. Not applicable to superloops. When operation is complete system responds with a line feed and a dot.</p>                                                                                                                                                                                                                                               | basic-1 |

**Enable a network loop**

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>ENLL loop</b> | <p>Enable network loop. When operation is complete system responds with OK line feed and a dot. Past releases respond with line feed and a dot.</p> <p>The shelves on a loop must be individually re-enabled through the ENLS command. Any telephones that were in lockout mode show as idle, then go into lockout mode again 30 seconds after any unit on the shelf requests dial tone.</p> <p>When enabling a network loop serving ISDLC cards, the ISDLC cards must be individually disabled then re-enabled to ensure that service is restored to digital telephones. Service may also be restored to digital telephones by disconnecting, and then connecting the telephone line cord.</p> | basic-1 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

## PB — Peripheral Buffer

### Purpose

The Peripheral Buffer (PB) provides interface between the network card and the PE circuits. The PB also supplies power for the PE cards, much the same as the 5/12V converter does for the CE cards.

### Function

The PB provides the PE cards with the following:

- ◆  $\pm 6V$ ,  $+5V$ , and  $+2.5V$  derived from  $-48V$  and  $\pm 10V$  supply
- ◆ card enable signals used to enable 10 PE cards
- ◆ unit enable signals used to enable 16 units

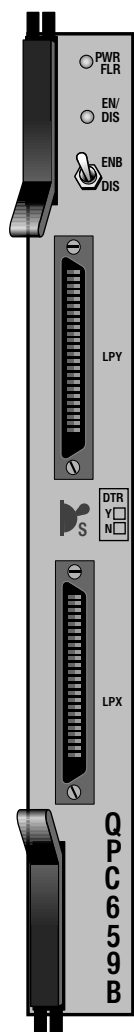
### Features

The PB faceplate includes:

- ◆ a LED, labeled SIG FLR. When lit the LED indicates that timing or sync signals have failed
- ◆ a LED, labeled PWR. When lit, the LED indicates that there is no output from the PB power supplies
- ◆ an ENB/DIS switch to hardware enable or disable the card. Signal and Voltage Monitor circuitry check for  $\pm 6V$  power transients, ensures power is applied in the proper sequence, and that clock and sync signals are present; if not LEDs are lit. Toggling the switch will manually restore the circuitry
- ◆ a bottom connector (J3) which interconnects the shelf 0 PB card to the network loop
- ◆ a top connector (J4) which interconnects the shelf 0 PB card to the shelf 1 PB card (J3)

A switch on the component side of the card allows you to change the frequency and level of the ringing voltage, and the line-card density supported by the PB card.

## DL LP BFR — Dual Loop Peripheral Buffer



553-0196T DLPB

### Purpose

The Dual Loop Peripheral Buffer (DLPB) provides interface and supplies power to the PE cards.

The card can be optioned in two modes:

- ◆ Single-loop mode, where one loop can drive all the cards on a PE shelf. It can be daisy-chained to the buffer card in a second PE shelf, provided the shelves are configured for single or double-density PE cards.
- ◆ Dual-loop mode, where one loop can drive the left half of the PE shelf cards and another loop can drive the right half. The dual-loop mode is used when quad-density PE cards are configured.

The card can hold a dual or quad Digitone Receiver Daughterboard, used on a 10-card PE shelf optioned for dual-loop mode, or on an eight-card PE shelf optioned for either the dual or single-loop mode.

### Function

Except for the Digitone Receiver, the DLPB functions as the aforementioned Peripheral Buffer.

### Features

The DLPB faceplate includes:

- ◆ a LED, labeled PWR FLR. When lit the LED indicates that timing or sync signals or power have failed
- ◆ a LED, labeled EN, DIS. When lit the LED indicates an enabled or disabled card
- ◆ an ENB, DIS switch to hardware enable or disable the card
- ◆ a connector labeled LPY in the single loop mode, is used to daisy-chain loop control to a second PE shelf. In the dual loop mode, it allows a loop to drive the last five cards, labeled Y, on a shelf. For a SL-1ST QCA66 PE shelf, the connector labeled LPY is used to drive the last four cards

- ◆ a connector labeled LPX, used in the single-loop mode to allow a loop to drive PE shelf 0. Used in the dual-loop mode to allow a loop to drive the first five cards labeled X on a PE shelf, or the first four cards on a SL-1ST QCA66 PE shelf

A connector, P2, on the component side of the card allows a dual or quad Digitone Receiver daughterboard to be mounted.

## About Peripheral Equipment shelf commands

When you enable or disable the PE shelf, the Peripheral Buffer is responding to the commands.

| PE shelf commands               |                                                                                                                                                                                                                 |         |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                         | Description                                                                                                                                                                                                     | Release |
| <b>Check status of PE shelf</b> |                                                                                                                                                                                                                 |         |
| <b>STAT I s</b>                 | Get idle, busy or disabled status of units on specified shelf.<br>Where I = loop and s = shelf<br><br>Displays number of units idle, busy, disabled and maintenance busy for the specified shelf.               | basic-1 |
| <b>Disable a PE shelf</b>       |                                                                                                                                                                                                                 |         |
| <b>DISS I s</b>                 | Disable specified shelf. Where I = loop and s = shelf. When operation is complete system responds with a line feed and a dot.                                                                                   | basic-1 |
| <b>Enable a PE shelf</b>        |                                                                                                                                                                                                                 |         |
| <b>ENLS I s</b>                 | Enable specified shelf. Where I = loop and s = shelf. When operation is complete system responds with a line feed and a dot.<br><br>If the shelf is disabled by overload, the overload status entry is cleared. | basic-1 |



**PE shelf commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**List TNs of units on PE shelf**

|                 |                                                                                                                                                                                                                                                                   |         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>LBSY I s</b> | List TNs of all busy units on specified shelf. Where <b>I</b> = loop and <b>s</b> = shelf                                                                                                                                                                         | basic-1 |
| <b>LDIS I s</b> | List TNs of all disabled units on specified shelf. Where <b>I</b> = loop and <b>s</b> = shelf                                                                                                                                                                     | basic-1 |
| <b>LIDL I s</b> | List TNs of all idle units on specified shelf. Where <b>I</b> = loop and <b>s</b> = shelf                                                                                                                                                                         | basic-1 |
| <b>LLBD I s</b> | List TNs of 500/2500 sets with defective MWLs. Where <b>I</b> = loop and <b>s</b> = shelf<br><br>Lists TNs of all 500/2500-type units for specified loop and shelf with message waiting lamps seen by the system as defective. Not available after Release 5. 24. | basic-1 |
| <b>LMNT I s</b> | List TNs of all maintenance busy units on specified shelf. Where <b>I</b> = loop and <b>s</b> = shelf                                                                                                                                                             | basic-1 |

## About Peripheral Equipment card commands

Included are telephone set line cards and analog trunk cards. Although Digitone Receivers are housed in PE shelves, and they are not included with this chapter as they function in a different manner from line and trunk cards. For Digitone Receivers refer to the *TDS* chapter (LD 34) in this guide.

| PE card commands               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Release |
| <b>Check status of PE card</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>STAT I s c</b>              | <p>Get status of specified card. Where <b>I</b> = loop, <b>s</b> = shelf and <b>c</b> = card</p> <p>When getting the status of a card relating to a trunk error (STAT), the term RVSD may appear with the trunk information. RVSD indicates that the software detected a reversed wired trunk for that unit.</p> <p>Response example as follows:</p> <p><b>00</b> = UNIT 00 is IDLE - no active call</p> <p><b>01</b> = UNIT 01 is BUSY - active with a call</p> <p><b>02</b> = UNIT 02 is MBSY - maintenance busy</p> <p><b>03</b> = UNIT 03 is DSBL - disabled</p> <p><b>04</b> = UNIT 04 is UNEQ - unequipped</p> <p><b>05</b> = UNIT 05 is UNEQ - unequipped</p> <p><b>06</b> = UNIT 06 is UNEQ - unequipped</p> <p><b>07</b> = UNIT 07 is UNEQ - unequipped</p> | basic-1 |
| <b>Disable a PE card</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>DISC I s c</b>              | <p>Disable specified card. When operation is complete system responds with a line feed and a dot.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | basic-1 |

**PE card commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Disable a PE card**

|                   |                                                                                                                |         |
|-------------------|----------------------------------------------------------------------------------------------------------------|---------|
| <b>DISI l s c</b> | Disable specified card when it is idle. When operation is complete system responds with a line feed and a dot. | basic-1 |
|-------------------|----------------------------------------------------------------------------------------------------------------|---------|

Disabled DID trunks are placed in the answer state while disabled.

If Recorded Telephone Dictation (RTDT) cards are to be software enabled or disabled, the Out-of-Service (OS) lead should be connected to ground. On completion of the task, ground can be removed.

**Enable a PE card**

|                   |                                                                                               |         |
|-------------------|-----------------------------------------------------------------------------------------------|---------|
| <b>ENLC l s c</b> | Enable specified card. When operation is complete system responds with a line feed and a dot. | basic-1 |
|-------------------|-----------------------------------------------------------------------------------------------|---------|

If the card resides on a disabled shelf, the status is output and enable is not performed. If card has been disabled by overload, the overload status entry is cleared.

After making any changes to the route data block, IPE TRUNK CARDS MUST BE DOWNLOADED by issuing the ENLC l s c command.

When the Trunk Failure Monitor (TFM) cardage is enabled, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit (it stays in the BUSY state).

## About Peripheral Equipment unit commands

The number of units on a PE card is known as density. There is a different number of units on the same density of line and trunk cards. Refer to *Equipment Ordering Information* for a description of the cards including number of units.

| PE unit commands       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Release |
| Check status of a unit |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
| <b>STAT I s c u</b>    | Get status of specified unit.<br>Response is one of the following:<br><b>IDLE</b> = idle<br><b>MBSY</b> = Maintenance Busy<br><b>DSBL</b> = Disabled<br><b>BUSY</b> = In use by Call Processing<br><b>UNEQ</b> = terminal not defined in software<br><b>L500</b> = line is 500/2500 type<br><b>MBCS</b> = Maintenance Set<br><b>BCS</b> = Business Communication Set or Meridian 1 proprietary telephone set<br><b>TRK</b> = Trunk<br><b>ATTN</b> = Attendant Console<br><b>DTR</b> = Digitone Receiver | basic-1 |

**PE unit commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Check status of a unit**

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>STAT I s c u</b> | <p><b>PWR</b> = Console Power unit</p> <p><b>SIG FAULT</b> = Outgoing signal circuitry fault detected on PS card under examination.</p> <p>Abnormal responses:</p> <p><b>CARD x DSBL (OVD)</b> = Card x disabled due to overload.</p> <p><b>DND xxx xxx</b> = Do-Not-Disturb feature is active.</p> <p><b>SHELF DSBL (OVD)</b> = Shelf Disabled due to overload.</p> <p>WARNING: CRPTR NOT IN RANGE = TN's data is corrupted. Check BUG messages relating to the TN. BUG messages indicate software faults.</p> <p>See Convert a carded TN, after the next list.</p> <p>Responses caused by invalid equipment choice:</p> <p><b>EXT DSBL</b> = extender disabled</p> <p><b>LOOP NOT TERM</b> = loop is not a terminal loop</p> <p><b>LOOP UNEQ</b> = loop is unequipped</p> <p><b>SHELF UNEQ</b> = shelf is unequipped</p> <p><b>SHELF UNEQ W/PBX CARDS</b> = no 500 cards on shelf</p> <p><b>CARD UNEQ</b> = card is unequipped</p> <p><b>CARD NOT PBX</b> = card is not a PBX card</p> <p><b>UNIT UNEQ FOR MW</b> = unequipped for Message Waiting</p> <p><b>PER UNEQ</b> = PS card is unequipped</p> <p><b>UNIT UNEQ</b> = unit is unequipped</p> | basic-1 |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**Convert a carded TN**

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>CONV tn,</b>     | Convert carded TN to I s c u.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | xpe-15 |
| <b>CONV I s c u</b> | Convert I s c u to carded TN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | xpe-15 |
|                     | <p>TN formats are associated with BUG messages. BUG messages indicate software errors, and are generally beyond the scope of on-site technicians. The second line of some BUG messages has a TN after the colon (:). These TNs appear in many formats, uncarded or normal TN, e.g., 10 0 1 0, carded TN, e.g., 0A04, and carded and uncarded hexadecimal formats. The carded TN is not necessarily a hexadecimal number, as its makeup is dependent upon the density of the PE cards assigned to the loop.</p> | xpe-15 |

**PE unit commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

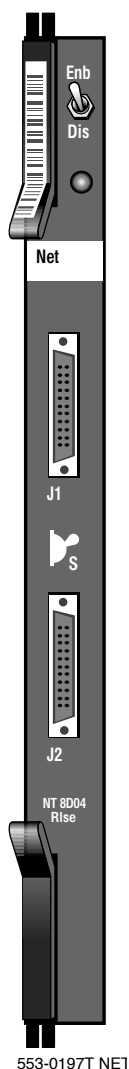
**Disable a unit**

|                     |                                                                                                                                                                                                                                                                                                                                                                                           |         |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>DISU I s c u</b> | <p>Disable specified unit. When operation is complete system responds with a line feed and a dot.</p> <p>Disabled DID trunks are placed in the answer state while disabled.</p> <p>If Recorded Telephone Dictation (RTDT) cards are to be software enabled or disabled, the Out-of-Service (OS) lead should be connected to ground. On completion of the task, ground can be removed.</p> | basic-1 |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**Enable a unit**

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>ENLU I s c u</b> | <p>Enable specified unit.</p> <p>If the unit resides on a disabled shelf or card, the status is output and enable is not performed. If the unit to be enabled is a 500/2500 message waiting telephone, test the unit prior to enabling.</p> <p>When the Trunk Failure Monitor (TFM) cardage is enabled, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit (it stays in the BUSY state).</p> | basic-1 |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

## NET — Superloop network



A Superloop card can be installed in a NE UEM or an existing enhanced network shelf of a Meridian SL-1ST, NT, or XT, and requires a minimum of Release 15 software. Release 15 software is not supported on SL-1 N, XN systems.

The Superloop occupies one card slot on the shelf, and will provide four consecutive network loops, starting at loop 0. This means that some card slots used by superloops are not physically occupied by a Superloop card. These unoccupied card slots can be utilized for non-loop network cards, such as SDI or DTI cards.

Superloop cards can be placed to physically cover off the first pair of consecutive loops (left-hand side) or the second pair of the consecutive loops (right-hand side). Software identifies the location of the Superloop card.

If an ENET card is inadvertently placed into an empty consecutive slot of a Superloop, the ENET card does not respond to PS polling. To address the four loops of a superloop, the PS polls the even loop of the slot into which the Superloop card is plugged.

### Purpose

The Superloop provides the time and space switching between any two PE terminals, and loop-to-CPU interface through the PS card. It interfaces the network through a 2.048 M bps bit interleaved PCM bus and Signaling (SSD) bus to byte-interleaved DS-30Y protocol used by the IPE.

### Features

The Superloop card faceplate includes:

- ◆ Two 24-pin faceplate connectors (J1 and J2), with J2 used to connect the Superloop to an Intelligent Peripheral Equipment (IPE) module, and J1 used to connect a second IPE module to the same Superloop card.

- ◆ One red LED, which when lit steadily indicates that the card switch is in the Dis position. When the switch is set to Enb the MPU does a self test. A passed self test causes the LED to blink three times, remaining on until the software turns it off. A failed test causes the CPU to run a maintenance diagnostic and blink the LED at a one Hz. rate.
- ◆ An Enb/ Dis switch to enable or disable the card.

The Superloop cards are slot addressed in groups of four, starting at loop 0.



## About Superloop commands

The following commands are available for Meridian 1 STE, NT, XT, Options 21, 21E, 51, 61, and 71 equipped with Superloop Network cards and Intelligent Peripheral Equipment (IPE).

| Superloop commands                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Release |
| <b>Check status of a Superloop</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
| <b>STAT (loop)</b>                 | <p>Give status of one or all Superloops.</p> <p>Response is one of the following:</p> <p><b>x BUSY, y DSBL</b> = loop enabled with x channels busy and y channels disabled.</p> <p><b>UNEQ</b> = loop unequipped; not programed in LD 17.</p> <p><b>CTYF: I1 I2</b> = loop specified in STAT command is unable to receive data from loops I1, I2, etc. (i.e., continuity test failed in most recent LD 45 loop test). Probable fault in network card.</p> <p><b>DSBL: NOT RESPONDING</b> = loop disabled. Network card not responding. Card missing, disabled by switch or faulty.</p> <p><b>DSBL: RESPONDING</b> = loop disabled but the network card responds. Loop may have been disabled due to:</p> <ul style="list-style-type: none"> <li>— manual request (DISL)</li> <li>— associated Peripheral Signaling card being disabled</li> <li>— overload condition on associated loop</li> </ul> <p>For overload conditions are indicated by OVD messages. An attempt to enable a loop which was disabled due to overload may result in a recurrence of the overload condition: the system's service may be impaired for about 2 minutes.</p> | basic-1 |

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## Superloop commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Test a Superloop

|                  |                                                       |        |
|------------------|-------------------------------------------------------|--------|
| <b>XNTT loop</b> | Do self-test of Network card for specified superloop. | xpe-15 |
|------------------|-------------------------------------------------------|--------|

The Network card must be disabled before the self-test.

Response as follows:

**TEST PASSED**

**XPE0 CONNECTED**

**XPE1 NOT CONNECTED**

### Print Superloop data

|                    |                                               |        |
|--------------------|-----------------------------------------------|--------|
| <b>SUPL (loop)</b> | Print data for all or specified superloop(s). | xpe-15 |
|--------------------|-----------------------------------------------|--------|

Response as follows:

**TYPE = XNET**

**XPE<sub>x</sub> = c ss es**

**x** is module 0 or 1,

**c** is the PEC,

**ss** is the starting IPE segment and

**es** is the ending IPE segment.

**SLOT** = RIGHT or LEFT

### Print MISP or Superloop card ID

|                 |                                  |        |
|-----------------|----------------------------------|--------|
| <b>IDC loop</b> | Print MISP or superloop card ID. | bri-18 |
|-----------------|----------------------------------|--------|

|                  |                            |        |
|------------------|----------------------------|--------|
| <b>IDC I s c</b> | Print MISP or XPE card ID. | bri-18 |
|------------------|----------------------------|--------|

**Superloop commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Print MISP or Superloop card ID**

The Superloop card ID output format is:

```

XNET VERS => xxx
RUNNING FROM yyy
FW IS SANE
CCCCCCCC-RRSSSS

XPEC0 VERS => xxx
RUNNING FROM yyy
FW IS SANE
XPECz CCCCCCCC-RRSSSS

XPEC1 VERS => xxx
RUNNING FROM yyy
FW IS SANE
XPECz CCCCCCCC-RRSSSS

```

where:

```

xxx = loadware version
yyy = RAM or ROM
z = 2 or 4
CCCCCCCC = order code
RR = release number
SSSS = is the serial number

```

The MISP card ID output format is:

```

CARDID: xxx. . . x
BASECODE VERSION: xxx. . . x
BRI LINE/TRUNK VERSION: xxx. . . x
BOOTCODE VERSION: xxx. . . x

```

**Disable a Superloop**

|                  |                                                                                                                                                                                                              |         |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>DISL loop</b> | Disable Superloop. System responds by listing XPE modules connected to the superloop and the IPE cards programed for that XPE module. When operation is complete system responds with a line feed and a dot. | basic-1 |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**Superloop commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Enable a Superloop**

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>ENLL loop</b> | <p>Enable network loop. When operation is complete system responds with <b>OK</b>, line feed and a dot. Past releases respond with line feed and a dot.</p> <p>When enabling a network loop serving ISDL cards, the ISDL cards must be individually disabled then re-enabled to ensure that service is restored to digital-telephones. Service may also be restored to digital-telephones by disconnecting, and then reconnecting the telephone line cord.</p> <p>Response as follows:</p> <p><b>TEST PASSED</b></p> <p><b>XPE0 CONNECTED</b></p> <p><b>XPEC1 NOT CONNECTED</b></p> <p><b>XNET HAS RECEIVED ENABLE MSG</b></p> <p><b>PROCESSING TN. . . .</b></p> <p><b>XPE0</b></p> <p><b>CARD00</b></p> <p><b>CARD01</b></p> <p><b>OK</b></p> | basic-1 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

## Cont 2/4 — Peripheral Equipment Controller



553-0198T CONT2(CL)

The Peripheral Equipment Controller (PEC) is available in two versions: the PEC2, which will control up to two Superloop cards and the PEC4 which will handle up to four Superloop cards. Both versions use the same printed circuit board, with the PEC2 having a partially populated board and the PEC4 using a fully assembled board.

The PEC and IPE cards sit on a DS-30X bus, consisting of 16 TX buses for line cards to the PEC, and 16 RX buses for PEC to line cards. Each IPE card position has a unique hard wired slot address so the PEC can determine the card position. Also on this backplane are clock buses and a serial bus used by the CARD LAN.

### Purpose

A PEC is used to interface the DS-30Y loop protocol used by the Superloop cards and the DS-30X PE bus protocol used by the IPE cards.

The PEC will recognize and support the signaling format as well as perform the format conversion for signaling messages between the PEC and the following:

- ◆ Digital Line card, [VVVVVVVVSSDDDDDDDDSS] X11 format. V = a voice bit. S = a signaling bit. D = a data bit.
- ◆ Message Waiting Analog Line card, Universal card and E&M Trunk card, [VVVVVVVVSSxxxxxxxxxx] A10 format. x = a blank bit

The PEC also provides up to 64 gain or loss pads, and maintenance functions.

### Features

The PEC faceplate includes:

- ◆ a LED, when lit indicating a disabled card
- ◆ a DB9 connector, J1, as a proprietary maintenance port for use with a data scope
- ◆ a two digit alphanumeric display which has two modes
- ◆ normal operation will display alternately the controller number and the port on which the controller clock is tracking
- ◆ self testing, where if a test fails the code is displayed for 0.5 seconds and the test sequence is repeated until all tests pass.

## Peripheral Controller faceplate code information

The NT8D01 Controller faceplate has a two-digit hexadecimal display. The display has two modes of operation: normal operation and power on reset self-test.

### Normal operation

During normal operation the display alternately shows:

- ◆ The Controller number (1-95) in hexadecimal.
- ◆ The port on which the Controller clock is tracking. The tracking is indicated by the decimal points before and after the digit. The possible tracking modes are:

**C0** = Controller tracking to the network connected to port 0.

**C1** = Controller tracking to the network connected to port 1.

**C2** = Controller tracking to the network connected to port 2.

**C3** = Controller tracking to the network connected to port 3.

**CF** = Controller not tracking any network.

Refer to LD 30 in this guide for the following commands:

CPED — clear Peripheral Controller maintenance displays

RPED — read Peripheral Controller maintenance displays

### Self-tests

During the self-tests, the display quickly shows the following:

**02 to 09**

**0A to 0F**

**10 to 19**

**1A to 1F**

**20 to 28**

and **EE**

### Self-test failures

The Controller card indicates faults by displaying any of the following codes at 0.5 second intervals.

## PEC faceplate hex codes

### 02 to 0F

Integrated circuit A31 failed a test.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### 10 to 16

Integrated circuit R72 failed a test.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### 17 to 1A

Integrated circuit R71 failed a test.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### 1B to 1C

DUART integrated circuit failed a test.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### 1D to 23

Integrated circuit R72 failed a test.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### 24 to 27

Integrated circuit R71 failed a test.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## 28

Checksum error.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## EE

Bus error, exception errors and various other errors.

**ACTION:** Replace the Peripheral Controller following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.



## About Peripheral Equipment Controller commands

The Peripheral Equipment Controller (PEC) controls the IPE shelf and the superloop. Both the PEC and IPE shelf have separate commands.

| PEC commands               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Release |
| <b>Check status of PEC</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>XPEC (x)</b>            | Print data for all or specified Controller(s).<br><br>Displays the IPE segments controlled by the PEC, physical location of the PEC in the column and tier, and the enable/disable status of the PEC.                                                                                                                                                                                                                                                                 | xpe-15  |
| <b>Test a PEC</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>XPCT x</b>              | Do self test on Controller x. Response is TEST PASSED<br><br><b>Note:</b> The NT8D01 Controller must be disabled before the self-test.                                                                                                                                                                                                                                                                                                                                | xpe-15  |
| <b>Disable a PEC</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>DSXP x</b>              | Disable specified PEC. System responds by listing the IPE cards programed for that PEC. When operation is complete system responds with a line feed and a dot.                                                                                                                                                                                                                                                                                                        | basic-1 |
| <b>Enable a PEC</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| <b>ENXP x (v)</b>          | Enable Controller x and associated PE cards, download software version v.<br><br>Enable all PE cards connected to Controller x and the Controller itself. If version v is not specified, the software downloaded to the Controller is current (c) or latest (l) version as defined in LD 97.<br><br>Response as follows:<br><br><b>TEST PASSED</b><br><b>XPEC HAS RECEIVED ENABLE MSG</b><br><b>PROCESSING TN. . .</b><br><b>CARD00</b><br><b>CARD01</b><br><b>OK</b> | xpe-15  |

**PEC commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Enable a PEC**

|                       |                                                                                          |        |
|-----------------------|------------------------------------------------------------------------------------------|--------|
| <b>ENXP XPC x (v)</b> | Enable Controller x, do not enable the associated PE cards, download software version v. | xpe-15 |
|-----------------------|------------------------------------------------------------------------------------------|--------|

The cards connected to the Controller are not enabled by this command. If version v is not specified, the software downloaded to the Controller is current (c) or latest (l) version as defined in LD 97.

Response same as ENXP x (v).

|                   |                                                                           |        |
|-------------------|---------------------------------------------------------------------------|--------|
| <b>ENXP x (v)</b> | Enable Controller x and associated PE cards, download software version v. | xpe-15 |
|-------------------|---------------------------------------------------------------------------|--------|

Enable all PE cards connected to Controller x and the Controller itself. If version v is not specified, the software downloaded to the Controller is current (c) or latest (l) version as defined in LD 97.

Response same as ENXP x (v).

## About Intelligent Peripheral Equipment shelf commands

The IPE shelf is controlled by the Peripheral Equipment Controller (PEC).

| IPE shelf commands               |                                                                                                                                                                                                                               |         |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                          | Description                                                                                                                                                                                                                   | Release |
| <b>Check status of IPE shelf</b> |                                                                                                                                                                                                                               |         |
| <b>STAT I s</b>                  | Get idle, busy or disabled status of units on specified shelf. Where <b>I</b> = loop and <b>s</b> = shelf.<br><br>Displays number of units idle, busy, disabled and maintenance busy for the specified shelf.                 | basic-1 |
| <b>Disable an IPE shelf</b>      |                                                                                                                                                                                                                               |         |
| <b>DISS I s</b>                  | Disable specified shelf. Where <b>I</b> = loop and <b>s</b> = shelf. When operation is complete system responds with a line feed and a dot.                                                                                   | basic-1 |
| <b>Enable an IPE shelf</b>       |                                                                                                                                                                                                                               |         |
| <b>ENLS I s</b>                  | Enable specified shelf. Where <b>I</b> = loop and <b>s</b> = shelf. When operation is complete system responds with a line feed and a dot.<br><br>If the shelf is disabled by overload, the overload status entry is cleared. | basic-1 |

## Intelligent Peripheral Equipment cards

### IPE card segments

An IPE module will house up to 16 analog or digital or trunk cards. Cards are located in the shelf slots 0 to 15.

The IPE is arranged into segments of four cards each, starting with card slot 0, for a total of four segments per IPE UEM. The segments are numbered from 0 to 3.

### TNs per IPE Line card

The NT8D02AA Digital Line Card supports 16 voice and 16 data TNs, making a total of 32.

The NT8D09AA Analog Message Waiting Line Card supports 16 voice TNs.

### **TNs per IPE Trunk card**

The NT8D14AA Universal Trunk Card supports 8 TNs.

The NT8D15AA E&M Trunk Card supports 4 TNs.

### **Maximum TN Density**

The maximum TN Density per segment is 128 TNs.

The maximum TN Density per IPE module is 512 TNs.

The maximum TN density assumes all slots are equipped with digital line cards with 16 voice and 16 data TNs provisioned. A typical mix of line and trunk cards yields a nominal density of 64 TNs per segment, and 256 TNs per IPE module.

## About Intelligent Peripheral Equipment card commands

Included are telephone set line cards and analog trunk cards. Although Digitone Receivers are housed in PE shelves, they are not included with this section as they function in a different manner than line and trunk cards.

| IPE card commands |             |         |
|-------------------|-------------|---------|
| Command           | Description | Release |

### Check status of IPE card

|                   |                                                                                           |         |
|-------------------|-------------------------------------------------------------------------------------------|---------|
| <b>STAT I s c</b> | Get status of specified card. Where <b>I</b> = loop, <b>s</b> = shelf and <b>c</b> = card | basic-1 |
|                   | Response example as follows:                                                              |         |
|                   | <b>00</b> = UNIT 00 is IDLE - no active call                                              |         |
|                   | <b>01</b> = UNIT 01 is BUSY - active with a call                                          |         |
|                   | <b>02</b> = UNIT 02 is MBSY - maintenance busy                                            |         |
|                   | <b>03</b> = UNIT 03 is DSBL - disabled                                                    |         |
|                   | <b>04</b> = UNIT 04 is UNEQ - unequipped                                                  |         |
|                   | <b>05</b> = UNIT 05 is UNEQ - unequipped                                                  |         |
|                   | <b>06</b> = UNIT 06 is UNEQ - unequipped                                                  |         |
|                   | <b>07</b> = UNIT 07 is UNEQ - unequipped                                                  |         |

### Print card ID

|                  |                                             |        |
|------------------|---------------------------------------------|--------|
| <b>IDC I s c</b> | Print MISP or XPE card ID.                  | bri-18 |
|                  | The MISP card ID output format is:          |        |
|                  | <b>CARDID: xxx. . . x</b>                   |        |
|                  | <b>BASECODE VERSION: xxx. . . x</b>         |        |
|                  | <b>BRI LINE/TRUNK VERSION: xxx. . . x</b>   |        |
|                  | <b>BOOTCODE VERSION: xxx. . . x</b>         |        |
|                  | The XPE card ID output format is:           |        |
|                  | XXXX CCCCCCCC-RRSSSS                        |        |
|                  | where:                                      |        |
|                  | <b>XXXX</b> = card type (, XDTR, XUT, etc.) |        |
|                  | <b>CCCCCCCC</b> = order code                |        |
|                  | <b>RR</b> = release number                  |        |
|                  | <b>SSSS</b> = is the serial number          |        |

| IPE card commands (continued) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Release |
| <b>Print card ID</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>IDCS x</b>                 | <p>Print card ID for all cards on shelf controlled by Controller x.</p> <p>The card ID for all cards in shelf controlled by Controller x is output.</p> <p>The XPE card ID output format is:</p> <p><b>XXXX CCCCCCCC-RRSSSS</b></p> <p>where:</p> <p><b>XXXX</b> = card type (i.e., XDTR, XUT, etc.)</p> <p><b>CCCCCCCC</b> = order code</p> <p><b>RR</b> = release number</p> <p><b>SSSS</b> = is the serial number</p>                                                                           | xpe-15  |
| <b>Disable an IPE card</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>DISC I s c</b>             | Disable specified card. When operation is complete system responds with a line feed and a dot.                                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |
| <b>DISI I s c</b>             | Disable specified card when it is idle. When operation is complete system responds with a line feed and a dot.                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |
| <b>Enable an IPE card</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |
| <b>ENLC I s c</b>             | <p>Enable specified card. When operation is complete system responds with a line feed and a dot.</p> <p>If the card resides on a disabled shelf, the status is output and enable is not performed. If card has been disabled by overload, the overload status entry is cleared.</p> <p>When the Trunk Failure Monitor (TFM) cardage is enabled, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit (it stays in the BUSY state).</p> | basic-1 |

## About Intelligent Peripheral Equipment unit commands

| IPE unit commands                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Release |
| <b>Check status of an IPE unit</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
| <b>STAT I s c u</b>                | <p>Get status of specified unit.<br/> Response is one of the following:<br/> <b>IDLE</b> = Idle<br/> <b>MBSY</b> = Maintenance Busy<br/> <b>DSBL</b> = Disabled<br/> <b>BUSY</b> = in use by Call Processing<br/> <b>UNEQ</b> = terminal not defined in software<br/> <b>L500</b> = line is 500/2500 type<br/> <b>MBCS</b> = maintenance set<br/> <b>BCS</b> = Business Communication Set or Meridian 1 proprietary telephone set<br/> <b>TRK</b> = Trunk<br/> <b>ATTN</b> = Attendant Console<br/> <b>DTR</b> = Digitone Receiver<br/> <b>PWR</b> = console power unit<br/> Abnormal responses:<br/> <b>CARD x DSBL (OVD)</b> = Card x disabled due to overload<br/> <b>DND xxx xxx</b> = Do not disturb feature is active<br/> <b>SHELF DSBL (OVD)</b> = Shelf disabled due to overload<br/> <b>SIG FAULT</b> = Outgoing signal circuitry fault detected on PS card under examination<br/> <b>WARNING: CRPTR NOT IN RANGE</b> = TN's data is corrupted. Check BUG messages relating to the TN. BUG messages indicate software faults.<br/> See Convert a carded TN, after the next list.<br/> Responses caused by invalid equipment choice:<br/> <b>EXT DSBL</b> = Extender Disabled<br/> <b>LOOP NOT TERM</b> = loop is not a terminal loop<br/> <b>LOOP UNEQ</b> = loop is unequipped<br/> <b>SHELF UNEQ</b> = shelf is unequipped<br/> <b>SHELF UNEQ W/PBX CARDS</b> = no 500 cards on shelf<br/> <b>CARD UNEQ</b> = card is unequipped<br/> <b>CARD NOT PBX</b> = card is not a PBX card<br/> <b>UNIT UNEQ FOR MW</b> = unequipped for Message Waiting<br/> <b>PER UNEQ</b> = PS card is unequipped<br/> <b>UNIT UNEQ</b> = unit is unequipped</p> | basic-1 |

**IPE unit commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Print set ID**

**IDU l s c u** Print set ID. Non-Option 11 format xpe-15

Print ID applies to the following set types: M2006, M2008, M2016, M2216 and M2616.

The output format of the set ID (M2008 for example) is:

**ARIES TN: l s c u**  
**TN ID CODE: M2008**  
**NT CODE: NT2K08WC**  
**COLOR CODE: xx**  
**RLS CODE: xx**

The color codes are:

03 = black  
 35 = chameleon ash  
 93 = dolphin

**Convert a carded TN**

**CONV tn,** Convert carded TN to l s c u. xpe-15

**CONV l s c u** Convert l s c u to carded TN xpe-15

TN formats are associated with BUG messages. BUG messages indicate software errors, and are generally beyond the scope of on-site technicians. The second line of some BUG messages has a TN after the colon (:). These TNs appear in many formats, uncarded or normal TN, e.g., 10 0 1 0, carded TN, e.g., 0A04, and carded and uncarded hexadecimal formats. The carded TN is not necessarily a hexadecimal number, as its makeup is dependent upon the density of the PE cards assigned to the loop.

**Disable an IPE unit**

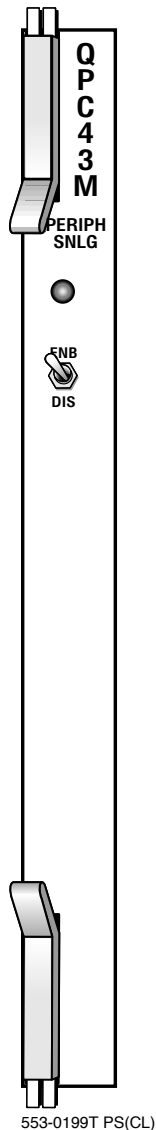
**DISS l s** Disable specified shelf. Where l = loop and s = shelf. basic-1  
 When operation is complete system responds with a line feed and a dot.



**IPE unit commands (continued)**

| Command                                  | Description                                                                                                                                                                                                            | Release |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Enable an IPE unit</b>                |                                                                                                                                                                                                                        |         |
| <b>ENLS I s</b>                          | <p>Enable specified shelf. Where I = loop and s = shelf. When operation is complete system responds with a line feed and a dot.</p> <p>If the shelf is disabled by overload, the overload status entry is cleared.</p> | basic-1 |
| <b>List TNs of units on an IPE shelf</b> |                                                                                                                                                                                                                        |         |
| <b>LBSY I s</b>                          | <p>List TNs of all busy units on specified shelf.</p> <p>Where I = loop and s = shelf</p>                                                                                                                              | basic-1 |
| <b>LDIS I s</b>                          | <p>List TNs of all disabled units on specified shelf.</p> <p>Where I = loop and s = shelf</p>                                                                                                                          | basic-1 |
| <b>LIDL I s</b>                          | <p>List TNs of all idle units on specified shelf.</p> <p>Where I = loop and s = shelf</p>                                                                                                                              | basic-1 |

## PS/Periph Snlg — Peripheral Signaling



The CPU communicates with the terminal equipment through the Peripheral Signaling card. One Peripheral Signaling card is required per network shelf, each controlling up to 16 loops in a 32 loop group. The Peripheral Signaling circuitry is combined with other circuitry on some single group systems.

### Purpose

The Peripheral Signaling card has two functions:

- ◆ to provide a signaling interface between the parallel CPU bus and the serial bit stream required by the PE equipment
- ◆ to generate and distribute timing signals for synchronous PCM transmission throughout the system

### Function

Signaling a change of state such as Off-Hook or dialing, on a PE card generates a 16 bit MESSIN, setting a flag. During TS 0 the network loop scans each of its terminals for flags and enables the flagged terminal during subsequent TS 0s. The PS enables each network loop in turn during TS 0 and when it detects a MESSIN, locks on and receives the 16 bits. It takes 29 successive TS 0s to gather the MESSIN and generate an interrupt. The CPU recovers the 16 bits by reading the MESSIN Register of the PS card, and this action allows the PS card and the network card to resume scanning.

When the CPU writes into the PS MESSOUT Register, the PS card serially shifts out the 16 bit MESSOUT through the network loop to the PE card.

**Timing** a 16.384 m Hz oscillator on the PS card is divided down to obtain the 2.048 m Hz clock and 4 k Hz for CODEC synchronization. In a single-group enhanced SL-1, the PS card associated with the active CPU is the master clock source. In multi-group systems, each PS card obtains its master clock from the System Clock Generator through the Intergroup Switch card.

### Features

The Peripheral Signaling card faceplate includes the following features:

- ◆ a LED, when lit indicating a disabled card
- ◆ an ENB/ DIS switch to hardware enable or disable the card

### Group, Loop and Peripheral Signaling card relationship

| Group | Shelf | PS | Loops      |
|-------|-------|----|------------|
| 0     | 0     | 0  | 0 to 15    |
| 0     | 1     | 1  | 16 to 31   |
| 1     | 0     | 2  | 32 to 47   |
| 1     | 1     | 3  | 48 to 63   |
| 2     | 0     | 4  | 64 to 79   |
| 2     | 1     | 5  | 80 to 95   |
| 3     | 0     | 6  | 96 to 111  |
| 3     | 1     | 7  | 112 to 127 |
| 4     | 0     | 8  | 128 to 143 |
| 4     | 1     | 9  | 144 to 159 |

## Peripheral Signaling commands

| Peripheral Signaling commands |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Release |
| <b>Check status of PS</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>STAT PER x</b>             | <p>Get status of PS card x (0 to 9).</p> <p>Possible responses:</p> <p><b>DSBL: NOT RESPONDING</b> = Peripheral Signaling card is disabled and not responding. The PS is either missing, disabled through its faceplate switch or faulty.</p> <p><b>Note:</b> If there is a fault in the extender pair for the network shelf, the status of the PS card will also be DSBL: NOT RESPONDING.</p> <p><b>DSBL: RESPONDING</b> = The PS card is disabled and responding to the CPU. The PS may have been disabled by manual request (DSPS) or the associated extender pair may have been manually disabled. If neither of these conditions exist, the card may have been disabled because of an overload condition on the associated loop.</p> <p>Check for OVD messages appearing in previous TTY output. An attempt to enable a PS card which was disabled because of an overload may result in a recurrence of the</p> | basic-1 |
| <b>Disable PS</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>DSPS x</b>                 | Disable PS card x (0 to 9).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | basic-1 |
| <b>Enable PS</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>ENPS x</b>                 | Enable PS card x (0 or 1).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | basic-1 |
| <b>Stop test</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <b>END</b>                    | Stop current operation or test.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | basic-1 |

## NPR Message makeup

The NPR Messages fall into the three following categories:

- ◆ Interactive messages that report non-admissible user input.
- ◆ Peripheral Equipment messages that report on the condition of the PE.
- ◆ Network messages that report on the condition of the equipment located in the network shelves.

### Using the NPR message table to clear faults

To clear most network and peripheral faults, the NPR action suggests that you use the LD 32 overlays found in this chapter. A few NPR actions refer you to overlay loads located outside this chapter.

## NPR Messages

### NPR000

LD 32 program identifier.

**ACTION:** The NPR program is loaded and ready for you to enter commands.

### NPR001

An illegal character is in the command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### NPR002

Wrong number of input parameters for command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### NPR003

An illegal command. The command cannot be used in this situation.

**ACTION:** Ensure that this is the command you wanted to use.

### NPR004

A loop or group parameter is out-of-range. Loops on multi-group systems range from 0 to 159. Loops on single group systems range from 0 to 31.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### NPR005

A shelf parameter is out-of-range. Units 0 to 3 only are allowed.

**ACTION:** Check to make sure your data is correct and re-enter the command. Refer to the *Network card* in this guide.

### NPR006

A card parameter is out-of-range. Cards are numbered from 1 to 10 on PE shelves. IPE shelf cards are numbered from 0 to 15.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**NPR007**

A unit parameter is out-of-range. Single density line units are 0 to 3. Double density line units are 0 to 7. Quad density line units are 0 to 15.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**NPR008**

A command is valid from a Meridian 1 proprietary telephone set (BCS) only and cannot outpulse from a TTY.

**ACTION:** Use a Meridian 1 proprietary telephone set (BCS). Refer to the *You should know this* chapter in this guide.

**NPR009**

The unit requested is not a trunk.

**ACTION:** Ensure that this is the command you wanted to use. Enter the STAT l s c command.

**NPR010**

A command is ignored as an active input device would be disabled.

**ACTION:** Abort the program and enter the command again from the TTY.

**NPR011**

A requested card is no longer busy and has been disabled. This is an indication that the DISI L S C command has been completed.

**ACTION:** Information only, no action required.

**NPR012**

A requested trunk is busy.

**ACTION:** Try the command later.

**NPR013**

A serious data error has been detected.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**NPR014**

The seizure of a RAN or AIOD trunk is not allowed by this program.

**ACTION:** Refer to the *TRK* chapter in this guide and use LD 36 TRK command.

**NPR015**

1. Specified loop not responding.

**ACTION:** Ensure that the card faceplate switch is in the Enb position.

If the fault persists, start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

2. A network, or conference or tone and digit switch card(s) may be faulty.

**ACTION:** Use STAT I to get the status of the network loops, STAT L of LD 34 for TDS loops and STAT L of LD 38 for conference loops. Use ENLL I to enable network loops, ENLL L of LD 34 for TDS loops and ENLL L of LD 38 for conference loops. Run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *TDS* chapter for tone and digit switch help or the *CFN* chapter in this guide for conference help.

3. The CE EXT may be faulty.

**ACTION:** Check and replace the Segmented Bus Extender card or the 3 Port Extender card following the steps in the *Hardware replacement* guide, or the cable between the two extenders associated with the standby CPU and the network shelf, where the IGS card indicated in the message is located. Run TEST in LD 45 to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

4. Other network, or conference or Tone and Digit switch (TDS) cards on the same shelf, may be faulty.

**ACTION:** Use STAT I to get the status of the network loops, STAT L of LD 34 for TDS loops and STAT L of LD 38 for conference loops. Use ENLL I 32 to enable network loops, ENLL L of LD 34 for TDS loops and ENLL L of LD 38 for conference loops. Run TEST in LD 45 to verify that the fault is cleared. If the loop does not enable and the fault does not clear, replace the card(s) following the steps in the



*Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses *TDS* chapter for Tone and Digit switch help or the *CFN* chapter in this guide for conference help.

**NPR016**

Loop already enabled.

**ACTION:** Information only, no action required.

**NPR017**

Specified loop is a tone and digit switch.

**ACTION:** Refer to the *TDS* chapter in this guide and use the LD 34 commands.

**NPR018**

A DISI command is still pending. Only one request is allowed at a time.

**ACTION:** Enter END to cancel the last DISI and enter a new DISI command.

**NPR0019**

Carrier Remote superloop (LCI) did not respond to the request to disable/enable the RTE superloop.

**ACTION:** Ensure that the LCI is installed and that the faceplate switch is in the enabled position.

**NPR020**

A specified Peripheral Signaling card is out-of-range. Cards 1 to 10 only, are allowed.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**NPR021**

The specified Peripheral Signaling card did not respond.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** Check the enable switch on the faceplate of the Peripheral Signaling card.

**ACTION:** The switch should be in the ENB position.

2. If the fault still exists then suspect the Peripheral Signaling card.

**ACTION:** Use STAT PER x to get the status of the PS cards. Use ENPS x to enable the PS card and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

3. Suspect a CPU, or CMA, card which connect the two CPUs.

**ACTION:** Use STAT CPU in LD 35 to check the status of the CPU or FN card. Use TCPUR in LD 35 to test the idle CPU or FN card. Use STAT CMA x in LD 35 to check the CMA card. If a CPU or FN shows faulty or if the CMAs do not enable, replace the appropriate card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

## NPR022

The Peripheral Signaling card is already enabled. No action is required.

**ACTION:** Ensure that this is the command you wanted to use.

## NPR023

The clock on a specified Peripheral Signaling card is not responding.

**ACTION:** Refer to the action for code NPR021 in this chapter.

## NPR024

The specified Peripheral Signaling card is being used by the active CPU for a clock.

**ACTION: Caution:** *Use of the following command during heavy traffic periods can cause the system to reload.* Use SCPU in LD 35 to switch the CPU, then return to LD 32 and try the command again.

## NPR025

1. It cannot be determined which CPU is active.

**ACTION:** Use STAT CPU in LD 35 to check the status of the CPU or FN card. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

2. Indicates either a fault on bus 0.

**ACTION:** If the CPU and CMA cards are not faulty, replace the backplane following the steps in the *Hardware replacement* guide.

3. A faulty CMA which must be repaired before continuing.

**ACTION:** Use STAT CMA x in LD 35 to check the CMA card. If the CMA card does not enable, replace it following the steps in the *Hardware replacement* guide that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

#### NPR026 n

An interrupt fault is present on Peripheral Signaling card **n**. If there is no card identified, the system cannot determine the fault source. No PS cards may be enabled while this fault persists. Probable fault causes are as follows:

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. Peripheral Signaling card(s) (card **n**, if specified) may be faulty.

**ACTION:** Use STAT PER x to get the status of the PS cards. Use ENPS x to enable the PS card and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

2. An active MISC card may be faulty.

**ACTION:** Use STAT CPU in LD 35 to check status of MISC or IF card when this card is not active. *The use of the SCPU command during heavy traffic periods can cause the system to reload.* Use SCPU in LD 35 to switch CPU. Use TCPU in LD 35 to verify that the fault is cleared. If the MISC or IF card does not enable and the fault does not clear, replace the MISC or IF card following the steps in the *Hardware replacement* guide.

3. The CE extender may be faulty.

**ACTION:** Use STAT SBE in LD 35 to check the Segmented Bus Extender cards and 3 Port Extender cards. Enable any disabled cards and run TEST in LD 45 to verify that the fault is cleared. If the SBE or 3PE cards do not enable and the fault does not clear, replace the card(s) following the steps in the *Hardware replacement* guide. If the cards are good and the fault does not clear, replace the cable between the two extenders. If you need help with commands or system responses refer to the *CED* chapter in this guide.

## NPR027

A fault in the outgoing signaling on the Peripheral Signaling card is being examined.

**ACTION:** Use STAT PER x to get the status of the PS cards. Use ENPS x to enable the PS card and run TEST in LD 45 to verify that the fault is cleared. If the PS card does not enable and the fault does not clear, replace the PS card(s) following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

## NPR028

The unit to be tested must be a PBX set with a Message Waiting Lamp.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## NPR029

The unit specified is either maintenance busy or busy.

**ACTION:** Try the command later.

## NPR030

The unit to be tested is unequipped. You are trying to test a unit that does not exist in the database.

**ACTION:** Ensure that this is the command you wanted to use. If this is the correct command, refer to the *administration input/output guide* to program the unit.

## NPR031

1. The requested PS card cannot be disabled until all associated loops have been disabled.

**ACTION:** Use DISL to disable all loops on the same shelf as the PS card and then re-enter the command. If you need help with the commands or system responses refer to the *TDS* chapter for tone and digit switch help or the *CFN* chapter in this guide for conference help.

2. Loop is a remote loop. ENLL and DISL not allowed.

**ACTION:** Use LD 53 (2.0 Mb/s RPE) to bring loop L up and down.

## NPR032

The card does not respond.

**ACTION:** Try again. If the card still does not respond, use the STAT l s c command to obtain the status.

**NPR036**

Peripheral Signaling card is already disabled.

**ACTION:** Information only, no action required.

**NPR050**

That command is only valid for superloops.

**ACTION:** Ensure that this is the command you wanted to use.

**NPR051**

That command is not valid for superloops.

**ACTION:** Ensure that this is the command you wanted to use.

**NPR070**

Specified equipment could not be enabled due to the extender being disabled.

**ACTION:** Use STAT SBE in LD 35 to check the Segmented Bus Extender cards and the 3 Port Extender cards. Enable any disabled cards and run TEST in LD 45 to verify that the fault is cleared. If the SBE or 3PE cards do not enable and the fault does not clear, replace the card(s) following the steps in the *Hardware replacement* guide. If the cards are good and the fault does not clear, replace the cable between the two extenders. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**NPR080**

The Peripheral Controller number is out-of-range. Peripheral Controllers range from 1 to 95.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**NPR081**

The Peripheral Controller requested is not defined. You are trying to test a unit that does not exist in the data base.

**ACTION:** Ensure that this is the command you wanted to use.

**NPR082**

The Peripheral Controller is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

## NPR083

An enabled Network Card that is connected to the Controller cannot be found.

**ACTION:** Use ENLL to enable one or both of the Network Cards and try again.

## NPR084

A message cannot be sent to a Network Card. Wait and retry the command later.

**ACTION:** Try the command later. If this error occurs again check the Network Card and the associated cabling.

## NPR085

This command is not valid for Network/DTR Card (NT8D18).

**ACTION:** Use the DISL or ENLL commands instead.

## NPR086

Superloop numbers must be a multiple of 4, starting at loop 0.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## NPR087

The NT8D PE shelf is either unoccupied by superloops or contains incorrect superloop numbers. There is a possible data corruption in the Controller block.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

## NPR209

1. A nonexistent customer.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

2. The Command, CMIN ALL, will clear all minor alarms.

**ACTION:** This action is optional. If attendant minor alarms are an annoyance, refer to the *administration input/output guide*. Use LD 17 prompt ALRM and input NO.

**NPR210**

A TTR unit request is out-of-range (SD=0, DD=0,2, QD=0,2,4,6).

**ACTION:** Check to make sure your data is correct and re-enter the command.

**NPR300 l s c (u)**

The specified loop, shelf, card and/or unit cannot be tested because it is disabled.

**ACTION:** Use ENLL, ENLS, ENLC and/or ENLU to enable the card(s) and try again.

**NPR301 loop**

Loop is a Digital Trunk Interface or Primary Rate Interface; use LD 60.

**ACTION:** Information only, no action required.

**NPR302**

Conference loop. Use LD 38.

**ACTION:** Information only, no action required.

**NPR303**

An unrecognizable status code has been sent. Undefined Link/DCHI state.

**ACTION:** Refer to the *maintenance input/output guide*, use LD 60 and the *BRI Maintenance Guide*.

**NPR310**

Receive micro of ISDL memory fault.

**ACTION:** Try the test again. If the results are the same, use DISC and ENLC to replace the card.

**NPR311**

Receive micro of ISDL lost a message.

**ACTION:** Try the test again.

**NPR314**

Transmit micro of ISDL memory fault.

**ACTION:** Try the test again. If the results are the same, use DISC and ENLC to replace the card.

## NPR315

Transmit micro of ISDLIC output queue problem lost messages.

**ACTION:** Try the test again.

## NPR317

ISDLIC card reset.

**ACTION:** Information only, no action required.

## NPR318

No response from ISDLIC card.

**ACTION:** Try the test again. If the results are the same, use DISC and ENLC to replace the card.

## NPR319

All units on the card are enabled. A self test of the ISDLIC card is not performed as one or more units on the ISDLIC card are busy.

**ACTION:** If a self-test is mandatory, disable the card first.

## NPR320

This command is only allowed for the ISDLIC card.

**ACTION:** Ensure that this is the command you wanted to use.

## NPR321

This command is only allowed for M3000 sets.

**ACTION:** Ensure that this is the command you wanted to use.

## NPR325

A card self test cannot be performed, because one or more units are busy.

**ACTION:** Try again later.

## NPR326

There is no response from the card.

**ACTION:** Try the test again. If the results are the same, use DISC and ENLC to replace the card. Release 19.25 software sends an NPR318 and fully enables all ports on the card.



**NPR327**

There is no response from the Network Card.

**ACTION:** Retry the command several times. If the problem persists, use STAT NWK 1 to get the status of the Network card. If the card does not respond and the fault does not clear, replace the Network card or the associated cabling following the steps in the *Hardware replacement* guide. Verify that the fault is cleared.

**NPR328**

The superloop must be disabled before using that command.

**ACTION:** Use DISL 1 to disable the superloop and re-enter the command.

**NPR329**

The card self test failed. The card was not enabled.

**ACTION:** Try to enable the card again, using ENLC. If the problem persists, use DISC and ENLC to replace the card.

**NPR330**

No acknowledgment returned for a message sent to the Network Card/Controller (NT8D04/NT8D01). The command has been terminated.

**ACTION:** Retry the command later. If the problem persists, contact your technical support group.

**NPR331**

Time-out waiting for Peripheral Software Download (PSDL) to complete the download function.

**ACTION:** Check the maintenance terminal for SDL messages. If messages are present refer to the *SDL* chapter in this guide.

**NPR332**

Specified Peripheral Software (PSW) version number is out-of-range (1-99).

**ACTION:** Check to make sure your data is correct and re-enter the command.

## NPR333

Specified Peripheral Software (PSW) version (1-99) was not found on the mass storage device.

**ACTION:** Refer to the *administration input/output guide*.

Use LD 22 command PRT PSWV to determine the available software versions.

## NPR334

There is a Peripheral Software Download (PSDL) failure.

**ACTION:** Try again. If the problem persists, contact your technical support group.

## NPR500 dn l s c u

The unit has failed the PBXT test.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. There are several set states that would prevent successful completion of the test. For example, ringing or set is Off-Hook.

**ACTION:** Try again. If the problem persists, contact your technical support group.

2. Check for ERR500 messages that indicate the same unit.

**ACTION:** Refer to the *ERR* chapter in this guide.

3. ERR500 messages do not indicate this unit to be in trouble.

**ACTION:** Try the test again.

4. If the fault indicates only one unit, suspect a faulty lamp in the telephone.

**ACTION:** Replace the telephone.

5. If all units are on one card, suspect a faulty line card.

**ACTION:** Use DISC and ENLC to replace card.

## NPR501

The telephone ID cannot be printed because the TN is not equipped, or the TN is not a voice TN on a Meridian Modular set.

**ACTION:** Ensure that this is the command you wanted to use.

**NPR502**

No call registers available for IDU.

**ACTION:** Try again later.

**NPR503**

The response timeout from IDU is 2 seconds.

**ACTION:** Try again. If the problem persists, contact your technical support group.

**NPR504**

This Command is not allowed for Conference/TDS/MFS cards.

**ACTION:** Determine if the hardware you are testing is a Conference/TDS/MFS card and refer to those chapters in this guide for commands.

**NPR505**

The Superloop Network or the Controller card may be faulty.

**ACTION:** Use XNTT 1 to self-test the Superloop card. Use XPCT x to self-test the Controller card. If the tests do not pass, replace the Superloop or Controller card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If the problem persists, check the associated cable and repeat the command.

**NPR506**

The Extended shelf is not equipped.

**ACTION:** Ensure that this is the command you wanted to use.

**NPR508**

The APNSS virtual loops cannot be disabled.

**ACTION:** Refer to the *DPNSS1 Maintenance Guide*.

**NPR509**

The DSL configuration download failed.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

**NPR510**

The DSL is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

## NPR511

This shelf contains at least one BRI line card.

**ACTION:** You must wait 45 seconds before enabling the shelf or loop.

## NPR512

A command is in progress. No input is allowed except aborting.

**ACTION:** Wait until the command action is finished or abort the command.

## NPR514

The software failed to enable the unit.

**ACTION:** Try again. If the problem persists, try replacing the card and if this fails, contact your technical support group.

## NPR515

The BRI line card did not send an activation acknowledgment for the DSL(s).

**ACTION:** Try again. If the problem persists, contact your technical support group.

## NPR516

The BRI line card self test failed to be invoked.

**ACTION:** Try again. If the problem persists, contact your technical support group.

## NPR517

The line card self test failed. The line card enabling sequence is aborted.

**ACTION:** Try to enable the card again, using ENLC. If the problem persists, use DISC and ENLC to replace card.

## NPR519

There is no response from the ISDN BRI line card.

**ACTION:** Try the test again. If the results are the same use DISC and ENLC to replace card.

## NPR522

The MISP is not responding. Aborting command.

**ACTION:** Refer to the *input/output maintenance guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR533**

The MISP application did not acknowledge the requested “Line Card State Change”.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR534**

The MISP application did not acknowledge the requested “DSL State Change”.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR551**

Invalid message or invalid environment in which to send the message to the MISP.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR555**

The expedited output queue is full.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR556**

The MISP output buffer is not available, possibly because the MISP has not read off the previous output message yet.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR561**

Only valid for MISP and superloops.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR562**

Cannot send a message to the line card.

**ACTION:** Try again. If the problem persists, try replacing the card and if that fails, contact your technical support group.

## NPR570

Cannot read the applications' information blocks from the MISP card.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

## NPR600

The Peripheral Signaling card cannot be disabled if DTCS is enabled.

**ACTION:** Refer to the *DPNSS1 Maintenance Guide*.

## NPR601

A non-terminal loop TN, cannot be converted.

**ACTION:** This command is intended for terminal loops only.

## NPR605

That application is not configured on this MISP.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

## NPR606

The DSL needs to be in RELEASED state.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

## NPR607

The DSL needs to be in ESTABLISHED state.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

## NPR608

The DSL needs to be in TEST mode.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

## NPR609

The DSL needs to be in REMOTE LOOPBACK mode.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

## NPR610

The DSL needs to be ENABLED.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

**NPR611**

The DSL configuration is not a TIE trunk type, nor a Meridian 1 interface type.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

**NPR612**

The Application on MISP is disabled.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR620**

This is not a BRI Line Card.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR621**

This not a valid Trunk DSL.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

**NPR622**

The MISP loop is disabled.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR623**

The Trunk DSL is enabled but released (is in code already).

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

**NPR624**

A command in LD 32 is pending completion.

**ACTION:** Wait for the command to finish, or enter two asterisks (\*\*) to abort the overlay completely.

**NPR626**

An invalid case value for example, INTPM, PARPM.

**ACTION:** Contact your technical support group.

**NPR627**

Failed to get the Interface Type.

**ACTION:** Contact your technical support group.

## NPR628

Failed to get the Interface TN.

**ACTION:** Contact your technical support group.

## NPR629

MPH OVL PTR is NIL.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

## NPR630

The protected loop PTR is NIL.

**ACTION:** Contact your technical support group.

## NPR631

MPH NET IFC PTR is NIL.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

## NPR632

The USID number is out-of-range (enter 0-15).

**ACTION:** Check to make sure your data is correct and re-enter the command.

## NPR633

The B-channel number is out-of-range (enter 1 or 2).

**ACTION:** Check to make sure your data is correct and re-enter the command.

## NPR634

The protected card PTR is NIL.

**ACTION:** Contact your technical support group.

## NPR635

This must be a BRI line card.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

## NPR636

The protected line PTR is NIL.

**ACTION:** Contact your technical support group.



**NPR637**

That must be a digital telephone.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**NPR638**

FUNC DATA PTR returned NIL PTR.

**ACTION:** Contact your technical support group.

**NPR639**

BRI USID MAPPTR is NIL.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR640**

That must be an MISP loop.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

**NPR641**

An invalid MISP TN.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

**NPR642**

BRI USID TSPTR is NIL.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR643**

Invalid MPH terminal type.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR644**

That must be a superloop.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**NPR645**

An invalid channel type.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## NPR646

TOD2SEC Time-out waiting for message.

**ACTION:** Re-enter the command.

## NPR663

Cannot enable or disable this ISDN BRI line card or DSL because the line card is not associated with a BRSC or MISP.

**ACTION:** Refer to the *PRA/DCHI Maintenance Guide*.

## NPR664

BRSC Cards do not have units associated with them.

**ACTION:** Refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

## NPR665

This command is not valid on phantom loops, since phantom loops do not physically exist. When phantom TNs are used the loop cards are not installed. Therefore you cannot test hardware that is not in the system.

**ACTION:** For further information, refer to the *Software feature guide, Phantom TNs*.

## NPR666

The loop must be configured as a MISP.

**ACTION:** Re-enter the command with a valid MISP loop number.

## NPR667

A MISP basecode must be enabled.

**ACTION:** Enable the MISP card using the ENLL 111 command.

If you need help with commands or system responses refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

## NPR668

The BRIE Application is not configured on the MISP.

**ACTION:** Re-enter the command with a MISP loop that has the BRIE application configured. If you need help with commands or system responses refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR669**

There was no downloadable Interface defined on the MISP.

**ACTION:** Configure an UIPE Trunk DSL in Overlay 27 and then try the command again. If you need help with commands or system responses refer to the *maintenance input/output guide* and the *ISDN Basic Rate Interface, Maintenance*.

**NPR670**

All Interfaces are “active”; there are enabled DSLs of each Interface type. An Interface must be “inactive” before the data can be downloaded.

**ACTION:** Disable the corresponding DSLs, or the BRIE application by using the DISL BRIE 111 command. Enter the command again.

**NPR671**

An invalid selection.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter one of the choices offered.

**NPR672**

Interface is “active”; there are enabled DSLs of this Interface type. An Interface must be “inactive” before the data can be downloaded.

**ACTION:** Disable the corresponding DSLs, or the BRIE application by the DISL BRIE 111 command. Enter the command again.

**NPR673**

A UIPE BRI Trunk DSL/Line Card is expected for this command.

**ACTION:** Re-enter the command with UIPE BRI Trunk DSL/Line Card TN.

**NPR674**

The specified unit is out-of-service, or may be a console power unit. It cannot be enabled or disabled.

**ACTION:** To change a console power unit, you must remove it with an OUT command and re-enter it with a NEW command.

**NPR675**

DSL is not of the correct application type or the line card does not have a DSL of the correct application type for this command.

**ACTION:** Check the configuration in LD 27 and re-enter the command with a DSL/Linecard of the correct application

## **NPR678**

DSL does not have GF capability

**ACTION:** Contact your technical support group.

## **NPR679**

Invalid call reference number.

**ACTION:** Contact your technical support group.

## **NPR0686**

XCMC hardware pack self-test failed.

**ACTION:** Replace the XCMC hardware pack. 

## **NPR0688**

Device locked by the Russian Call Monitoring feature. The command was not executed.

**ACTION:** Action: Contact your technical support group.

## **NPR0705**

IDC/IDU is busy with another request.

**ACTION:** Contact your technical support group.

## NWS — LD 30 Network Signaling

### In this chapter

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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter.

## How the NWS works

LD 30 is used to test network loops. It may be run automatically in the background and daily routines, or loaded manually to enter commands. NWS messages report network signaling problems.

### NWS Run automatically as background or daily routine

When invoked automatically by the system, the program performs the following tests:

- ◆ tests the network memory of each enabled network card
- ◆ tests the continuity of the speech path to each PE shelf (for enabled loops only)
- ◆ tests the signaling channel to each line or trunk card (on enabled loops only)
- ◆ tests the signaling channel through each Integrated Services Digital Line Card (ISDLC) to each digital-telephone or data TN
- ◆ switches the system clocks

Digital telephones that pass the signaling test have their date and time updated to match the system clock.

Any Meridian 1 proprietary set or line card that fails the signaling test may be disabled by this program. Use LD 32 to re-enable them.

If two or more PE cards are disabled on a loop, an NWS101 message is printed without the associated NWS301 messages to indicate card failures. However, the shelves that failed are identified by a NWS201 message. Therefore, the state of the individual cards can be determined by manually re-testing using the SHLF command.

If NWS301 indicates a failure of the Peripheral buffer or Controller card, the message may not be correct. Therefore the card should be re-tested using the SHLF command.

This program does not test attendant consoles or Automatically Identified Outward Dialing (AIOD) trunks. Equipment which has been disabled due to overload or manual request is not tested.

## NWS Run manually

When manually invoked the program may be used for the following:

- ◆ to conduct a complete test, as when the program is invoked automatically, except for switching the clocks
- ◆ to conduct a test on a specific PE shelf
- ◆ to get the enable/disable status of network loops
- ◆ to enable or disable network loops
- ◆ to clear alarm indications and the maintenance display
- ◆ to download peripheral software on superloops
- ◆ to clear contents of the Controller maintenance display
- ◆ to read contents of the Controller maintenance display

**Note:** For systems running Release 15 and later, signaling tests are performed in LD 30. Including LD 30 is recommended if LD 45 is running as a background or midnight routine. By including LD 30, fault isolation improves as LD 30 detects network memory faults before LD 45 runs continuity tests.

## About the NWS commands

The following commands apply to both regular networks and superloops.

| NWS common commands    |                                                                                                                            |         |
|------------------------|----------------------------------------------------------------------------------------------------------------------------|---------|
| Command                | Description                                                                                                                | Release |
| Clear display - alarms |                                                                                                                            |         |
| <b>CDSP</b>            | Clear the maintenance display on active CPU to 00 or blank.                                                                | basic-1 |
| <b>CMAJ</b>            | Clear major alarm, reset power fail transfer and clear power fault alarm.                                                  | basic-1 |
| <b>CMIN c</b>          | Clear minor alarm indication on attendant consoles for customer c.                                                         | basic-1 |
| <b>CMIN ALL</b>        | Clear minor alarm indication on all attendant consoles.                                                                    | basic-1 |
| Check status of loop   |                                                                                                                            |         |
| <b>STAT</b>            | Gives status of network circuits indicating how many are enabled and how many are disabled. Response is:<br>x ENBL, y DSBL | basic-1 |



**NWS common commands** (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Clear display - alarms**

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>STAT loop</b> | <p>Get status of a network loop.</p> <p>Response is one of the following:</p> <ol style="list-style-type: none"> <li>1. <b>UNEQ</b> = loop is unequipped.</li> <li>2. <b>DSBL: RESPONDING</b> = loop is disabled and the Network card is responding. The loop may have been disabled because of: <ol style="list-style-type: none"> <li>a. DISL command</li> <li>b. associated Peripheral Signaling card is disabled</li> <li>c. overload condition on associated loop. In this case an OVD message is output. An attempt to enable the loop may result in a recurrence of the overload.</li> </ol> </li> <li>3. <b>DSBL: NOT RESPONDING</b> = loop is disabled and the Network card is not responding. The card is missing, disabled by the faceplate switch or is faulty.</li> <li>4. <b>x BUSY, y DSBL</b> = loop is enabled with x channels busy, y channels disabled.</li> <li>5. <b>CTYF 11, 12...</b> = loop specified in the STAT command cannot receive speech from one or more loops (I1, I2). This usually indicates the LD 30 continuity test failed. Probable fault is the network card.</li> <li>6. <b>FAULTY HW: OVERLOAD</b> = loop is identified as faulty by the LOIP function. Refer to the FHW chapter.</li> <li>7. <b>FAULTY HW: NO RESPONSE</b> = loop is identified as faulty by the LRIP function. Refer to the FHW chapter.</li> </ol> | basic-1 |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**Disable a loop**

|                  |                                                                                                                                                                                                                        |         |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>DISL loop</b> | <p>Disable network loop. When operation is complete system responds with a line feed and a dot. All calls in progress on this loop are disconnected. Peripheral cards remain software enabled and no LEDs are lit.</p> | basic-1 |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**NWS common commands** (continued)

| Command              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Release |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Enable a loop</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |
| <b>ENLL loop</b>     | Enable network loop. Enables the network, performs a network memory test and tests continuity and signaling to all shelves on the loop. If it passes the test, OK is output. This does not re-enable any disabled cards on the loop. Use LD32 ENLS or ENXP commands or enable each card individually. When enabling a network loop serving ISDL cards, the ISDL cards must be individually disabled, then re-enabled to ensure that service is restored to digital telephones. Service may also be restored to digital telephones by disconnecting and then reconnecting the telephone's line cord. | basic-1 |

**NWS common commands** (continued)

| Command                           | Description                                                                                                                                                                                                                                                                                                                                                     | Release |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>List disabled/enabled loop</b> |                                                                                                                                                                                                                                                                                                                                                                 |         |
| <b>LDIS</b>                       | List disabled loops. Response is:<br><b>l1, l2, ln</b> — l is a disabled loop, or<br>NONE — if no cards are disabled.                                                                                                                                                                                                                                           | basic-1 |
| <b>LENL</b>                       | List enabled loops. Response is:<br><b>l1, l2, ln</b> — l is an enabled loop, or<br>NONE — if no cards are enabled.                                                                                                                                                                                                                                             | basic-1 |
| <b>Test loop and memory</b>       |                                                                                                                                                                                                                                                                                                                                                                 |         |
| <b>LOOP loop,<br/>ALL</b>         | Test network memory on one or all loops. Performs a network memory test, continuity test and signaling test on the specified loop, which can be either a value from 0 to 159 or ALL. If ALL is specified, every loop currently enabled is tested. All shelves on each loop are tested (except for attendant consoles). If no errors are detected, OK is output. | basic-1 |
| <b>SHLF l s</b>                   | Test loop l, shelf s.                                                                                                                                                                                                                                                                                                                                           | basic-1 |
| <b>END</b>                        | Abort current test. If no test is in progress, message NWS002 is output.                                                                                                                                                                                                                                                                                        | basic-1 |

## About regular network commands

The following commands apply to non superloop networks:

| Regular network commands       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Release |
| <b>Test time switch memory</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |
| <b>TTSM loop x<br/>y z</b>     | <p>Test Time Switch Memory (TSM) of a loop. Tests the Time Switch Memory (TSM) of the network card, where:</p> <p><b>loop</b> = the network loop that may have a faulty TSM.</p> <p><b>x</b> = the network loop of the transmitting party.</p> <p><b>y</b> = the junctor used on the transmitting side of the call. Its value has a range of 0 to 7, unless the two loops are in the same group, in which case the junctor value to be entered is 15.</p> <p><b>z</b> = the timeslot used on the transmitting side of the call. Its value has a range of 2 to 31.</p> <p><b>Note:</b> The values normally used in this command are the same values that appeared in the ERR3036 or ERR3037 message during call processing.</p> | basic-1 |
| <b>Test time switch memory</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |
| <b>TTWI loop x<br/>y z</b>     | <p>Test TSM when the timeslot junctor is idle.</p> <p>The command is usually used if error message NWS800 is output in response to TTSM.</p> <p><b>loop</b> = the network loop that may have a faulty TSM.</p> <p><b>x</b> = the loop ID (range 0 to 159) of the transmitting party.</p> <p><b>y</b> = the junctor used on the transmitting side of the call. Its value has a range of 0 to 7, unless the two loops are in the same group, in which case the junctor value to be entered is 15.</p> <p><b>z</b> = the timeslot (2-31) used on the transmitting side of the call.</p> <p><b>Note:</b> This command waits for timeslot z and junctor y to become available and will then execute the command.</p>                | basic-1 |

## About superloop commands

The following commands are used with Controllers (NT8D01) and Network Cards (NT8D04 or NT8D18):

| Superloop commands              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Release |
| <b>Enable superloop</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |
| <b>ENLL loop (v)</b>            | Enable superloop, download peripheral software version v. If version v is not specified, the software downloaded is current (c) or latest (l) version as defined in LD 97.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | xpe-15  |
| <b>Clear controller display</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |
| <b>CPED I s</b>                 | Clear contents of Controller Maintenance Display on loop I shelf s. This also clears the buffer printed with the command RPED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | xpe-15  |
| <b>Read controller display</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |
| <b>RPED I s</b>                 | Read contents of the Controller Maintenance Display. This command lists the current and last 15 clock tracking states of the NT8D01 Controller. The tracking is indicated on the Controller maintenance display by decimal points before and after the digit. The possible tracking modes are:<br><br><b>C0</b> = Controller is tracking to the network connected to port 0.<br><b>C1</b> = Controller is tracking to the network connected to port 1.<br><b>C2</b> = Controller is tracking to the network connected to port 2.<br><b>C3</b> = Controller is tracking to the network connected to port 3.<br><b>CF</b> = Controller is not tracking any network. | xpe-15  |
| <b>Test card or unit</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |
| <b>UNTT I s c (u)</b>           | Do a signaling test on specified card or unit controlled or connected to this superloops.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | xpe-15  |

## NWS messages

### NWS000

Program 30 has been loaded.

**ACTION:** The NWS program is loaded and ready for you to enter commands.

### NWS002

An invalid command was entered.

**ACTION:** Ensure that this is the command you wanted to use.

### NWS003

The command contained an invalid parameter.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The loop, shelf or customer number is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

2. The loop or shelf specified is disabled.

**ACTION:** Check to ensure that the faceplate switch is in the re-enter position on network loop and peripheral buffer cards. Use ENLL 1 and ENLS 1 s in LD 32 to enable loops and shelves or controllers.

3. The loop or shelf specified is unequipped.

**ACTION:** If this is the correct command, refer to the *administration input/output guide*. Use LD 22 CFN to check the configuration record for loop programming. Check to make sure your data is correct and re-enter the command.

4. The customer number specified does not exist.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

### NWS004

Yellow alarm is set or a loop is being audited.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP* and use LD 60.

**NWS005**

There is no free channel for a signaling test.

**ACTION:** Try the command later.

**NWS006**

A loop is being audited or there is no channel equipped.

**ACTION:** Try the command later.

**NWS007**

Attempted to enter a command other than END, while the previous command was still being executed.

**ACTION:** Enter END to abort the current command.

**NWS008**

A serious data error has been detected.

**ACTION:** Contact your technical support group.

**NWS009**

Start at the first or most likely cause and refer down the list until the fault is cleared. If the fault does not clear, call your technical support group. An ENLL has been issued to:

1. An already enabled network loop.

**ACTION:** Ensure that this is the command you wanted to use.

2. A network loop associated with a disabled PS card. The command is ignored by the system.

**ACTION:** If the Peripheral Signaling card is disabled, use ENLPS in LD 32 to re-enable the PS card. If the PS card does not enable, replace the PS card following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**NWS010**

No response from Network card or no acknowledgment returned for previous message sent to the Network or Controller card (NT8D04/NT8D01).

**ACTION:** Try the command several times. If you get the same results, replace the listed cards one at a time following the steps in the *Hardware replacement* guide. After replacing each card, see if this message reappears. If it does reappear replace another card.

## NWS013

A serious data error has been detected by NWS.

**ACTION:** Contact your technical support group.

## NWS019

Carrier Remote superloop (LCI) did not respond to the request to disable/enable the RTE superloop.

**ACTION:** Ensure that the LCI is installed and that the faceplate switch is in the enabled position.

## NWS020

During execution of the signaling test, an input buffer overflow was detected and some input messages were lost.

**ACTION:** Check for OVD messages, and if present, go to the *OVD* chapter in this guide and follow the action for that OVD message. If there is no OVD message, the signaling test was terminated with no fault implied by this message and you may want to retry this test later.

## NWS023 loop

During the execution of the signaling test, a large number of line faults were detected, but storing the fault information required too much memory space. Testing of the PS card associated with this **loop** was terminated.

**ACTION:** Beginning with the specified loop, use LOOP x to separately test each of the remaining loops located on the same shelf as the PS card. Replace the cards one at a time following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card. This message does not necessarily imply a fault on the specified loop.

## NWS024

The Network Card fault list is full.

**ACTION:** Use DISL 1 in LD 32 to disable and ENLL 1 to enable the network card.

## NWS025

A serious data error has been detected by Network Card fault list management routines. The test is terminated.

**ACTION:** Contact your technical support group.



**NWS030**

The clock switching function was not performed as it could not be determined which clock was active. If you do not have DTI hardware, ignore this message.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The QPC411 SCG may be faulty.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*, and use LD 60.

2. The CE EXT connecting the active CPU to the network shelf may be faulty.

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

3. The cables connecting the above cards via the Junctor may be faulty.

**ACTION:** Replace the cables, one at a time, between the IGS cards and the junctor board following the steps in the *Hardware replacement* guide. After replacing each cable run the test again to verify that the fault is cleared.

**NWS031**

The clock switching function was not performed. One or both of the QPC411 SCG cards are disabled. No fault is implied.

**ACTION:** Re-enable the SCG using ENL SCG x in LD 39. If you need help with the commands or system responses refer to the *IGS* chapter in this guide.

**NWS031**

Receiving NWS031 error messages during midnight routines.

**ACTION:** Check to see if the package 75 (DTI) software is equipped, but no hardware is installed.

**NWS042**

The Network Card interface test failed and the PE continuity test was not performed

**ACTION:** Try the command several times. If you get the same results, use DISL x and ENLL x to test the cards one at a time. If the test fails, replace that card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

**NWS043**

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

The requested PE cannot be tested because:

1. The Peripheral Controller is disabled.

**ACTION:** Use ENXP in LD 32 to enable the controller. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

2. The PE is not defined for the superloop.

**ACTION:** If applicable, refer to the *administration input/output guide*, and use LD 10 or 11 to program the PE.

3. The PE shelf connected to the superloop is empty.

**ACTION:** Check the PE shelf for cards.

**NWS061 c p1 p2**

The clock switching function was not performed. One or both QPC411 SCGs are disabled. No fault is implied. Check for message ISR061.

**ACTION:** Refer to the *IGS* chapter in this guide and follow the action for message ISR061.

**NWS101 ps loop1 loop2 loopn**

The **loop1**, **loop2**, etc. associated with Peripheral Signaling card **ps** failed the signaling test. Error code NWS201 is implied for these loops.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The MISC card on the active CPU may be faulty.

**ACTION:** Replace the MISC or IF card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. Try the tests again. If this message reappears, replace the loops listed in the message one at a time following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card.

2. The CE EXT between the active CPU and affected network shelf may be faulty.

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

3. The network, conference and TDS cards in the same group may be faulty.

**ACTION:** Replace the listed cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card.

4. The CPU cards may be faulty. Loops may be tested separately using the LOOP L command.

**ACTION:** Replace the CPU or FN card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

## NWS102

The Real-time clock on the peripheral signaling card has failed.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The peripheral signaling card is may be faulty.

**ACTION:** Replace the peripheral signaling card following the steps in the *Hardware replacement* guide. After replacing the card run the test again to verify that the fault is cleared.

2. The MISC or IF card on the active CPU may be faulty.

**ACTION:** Replace the MISC or IF card following the steps in the *Hardware replacement* guide. After replacing the card run the test again to verify that the fault is cleared.

### NWS103 ps

A fault has been detected in outgoing signaling on the Peripheral Signaling card **ps**. The system is still able to signal using the bad card but the outgoing signaling rate may be reduced. Repeat the LOOP ALL test, or test any terminal loop associated with the **ps** card several times.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

If this message reappears, the probable fault is on:

1. the PS card

**ACTION:** Replace the Peripheral Signaling card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. the CPU card

**a)** If the fault indication appears when one CPU is active but not when the other is active and the fault affects all groups, on either CE EXT connecting the affected network shelf to the active CPU, or in the cable between the extenders, execute the following actions:

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) or cables following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses go to the *CED* chapter in this guide.

*b)* other PS cards

**ACTION:** Replace the peripheral signaling card following the steps in the *Hardware replacement* guide. After replacing the card run the test again to verify that the fault is cleared.

*c)* the MISC of the CPU which is active when the fault indication appears

**ACTION:** Replace the MISC or IF card following the steps in the *Hardware replacement* guide. After replacing the card run the test again to verify that the fault is cleared.

**NWS141 c**

The IGS card **c** failed to respond.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**1.** The IGS card **c** may be faulty.

**ACTION:** Replace the IGS card following the steps in the *Hardware replacement* guide. After replacing the card run the test again to verify that the fault is cleared.

**2.** The CE EXT connecting active CPU to network shelf may be faulty.

**ACTION:** . Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**3.** Other IGS cards may be faulty.

**ACTION:** Replace the IGS cards one at a time following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card.

**4.** Associated cables may be faulty.

**ACTION:** Replace the cables, one at a time, between the IGS cards and the junctor board following the steps in the *Hardware replacement* guide. After replacing each cable run the test again to verify that the fault is cleared.

**NWS142 c**

The clocks could not be switched when the System Clock Generator (SCG) was the providing clock.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The SCG may be faulty.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*, use LD 60.

2. The cables connecting the SCG cards via the Junctor, may be faulty.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*, use LD 60.

3. CE EXT connecting active CPU to network shelf

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) or cables following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

**NWS143 n**

You cannot switch the clock controllers because the standby clock controller **n** is software disabled.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*. Use LD 60 to enable it, provided it is operational.

**NWS201 loop s1 s2 sn**

Two or more shelves **s1**, **s2**, on the **loop** failed the signaling test. All cards failed the test on each shelf. Refer to the action provided for code NWS301 in this chapter. If the loop is an RPE loop, refer to the *maintenance input/output* guide. Use LD 33.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The network card for the **loop** may be faulty.

**ACTION:** Replace the Network card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

2. The **loop** cable to the PE shelves may be faulty.

**ACTION:** Replace the cables, one at a time, between the Network cards and the Peripheral Buffer cards following the steps in the *Hardware replacement* guide. After replacing each cable run the test again to verify that the fault is cleared.

3. There may be faults on shelves **s1** to **s4**, depending on card density.

**ACTION:** Replace the peripheral buffer cards, one at a time, following the steps in the *Hardware replacement* guide. After replacing each card run the test again to verify that the fault is cleared.

4. The network extenders may be faulty.

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) or cables following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses go to the *CED* chapter in this guide.

5. The CPU cards may be faulty.

**ACTION:** Replace the CPU or FN card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

### NWS202 loop s1 s2

Continuity test failed on this loop, shelves **s1**, **s2**. Signaling test was completed in spite of the fault.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The peripheral buffer or the controller on the shelves listed, may be faulty.

**ACTION:** Replace the peripheral buffer or controller cards, one at a time, following the steps in the *Hardware replacement* guide. After replacing each card run the test again to verify that the fault is cleared.

2. The interconnecting cable to the PE shelves may be faulty.

**ACTION:** Replace the cables, one at a time, between the network cards and the peripheral buffer cards following the steps in the *Hardware replacement* guide. After replacing each cable run the test again to verify that the fault is cleared.

3. The network card may be faulty.

**ACTION:** Replace the network card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

4. The peripheral signaling cards may be faulty.

**ACTION:** Replace the peripheral signaling cards, one at a time, following the steps in the *Hardware replacement* guide. After replacing each card run the test again to verify that the fault is cleared.

5. The network, conference and TDS cards in the same group may be faulty

**ACTION:** Replace the listed cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card.

6. The network extenders may be faulty.

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) or cables following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

7. The CPU cards may be faulty.

**ACTION:** Replace the CPU or the FN card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

**Note:** ERR3036 also occurs if a loop on the QPC414 Network card is not configured. This is not an error condition. To prevent ERR3036 occurring in this case, define the loop in LD 17. The unused loop should be disabled.

## NWS202

Receiving NWS202 10:0 codes every night after converting loop 16 from a TERD to a TERQ.

**ACTION:** Check the switch setting on the peripheral buffer card to match Quad Density format. Refer to the *Circuit Pack Installation and Testing* chapter in the *Installation Guide*.



**NWS203 loop**

The memory test on this **loop** has failed and timeslots associated with faulty memory locations are disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The network card is probably faulty.

**ACTION:** Replace the network card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

2. If a LOOP L command produces this response only in one of the CPUs, the fault may be in the CE EXT connecting the network group (in which loop is located) to the CPU which is active when this message appears, or in the cable connecting these extenders

**ACTION:** Replace the SBE or 3PE card(s) or cables following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

**NWS204 loop**

The network circuit for this **loop** failed to respond to an ENLL, DISL, LOOP or SHLF command.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. Check whether the network card is missing.

**ACTION:** If it is missing, install a network card by following the steps in the *Hardware replacement* guide.

2. Check whether the network card has been disabled from the faceplate switch.

**ACTION:** Set the Enb/Dis switch to Enb.

3. The network card may be faulty.

**ACTION:** Replace the network card by following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

4. The peripheral signaling card may be faulty.

**ACTION:** Replace the peripheral signaling card, following the steps in the *Hardware replacement* guide. After replacing the card, test again to verify that the fault is cleared.

5. The network, conference and TDS cards in the same group may be faulty.

**ACTION:** Replace the listed cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card.

6. The network extenders may be faulty.

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) or cables following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

7. The CPU card may be faulty.

**ACTION:** Replace the CPU or FN card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

#### NWS211 loop s1 s2 sn

One or more shelves **s1**, **s2**, failed the signaling test. At least one unit passed the signaling test. Refer to the action provided for code NWS301 in this chapter. If **loop** is an RPE loop, refer to LD 33.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The Network card may be faulty.

**ACTION:** Replace the network card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

2. The loop cable to the PE shelves may be faulty.

**ACTION:** Replace the cables, one at a time, between the network cards and the peripheral buffer cards following the steps in the *Hardware replacement* guide. After replacing each cable run the test again to verify that the fault is cleared.

3. There may be a fault on shelves **s1** to **s4**, depending on card density.

**ACTION:** Replace the peripheral buffer cards, one at a time, following the steps in the *Hardware replacement* guide. After replacing each card run the test again to verify that the fault is cleared.

4. The Network, Conference and TDS cards in the same group may be faulty.

**ACTION:** Replace the listed cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card.

5. The Network Extenders may be faulty.

**ACTION:** Use STAT EXT in LD 35 to determine which extender is faulty. Replace the SBE or 3PE card(s) or cables following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared. If you need help with the commands or system responses refer to the *CED* chapter in this guide.

6. The CPU cards may be faulty.

**ACTION:** Replace the CPU or FN card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

#### NWS301 **l s, c1, c2, cn**

Two or more PE cards **c1, c2**, on loop **l** shelf **s** failed the signaling test, or the results of the shelf test varied. LD 30 automatically tests each shelf two ways. If a card number is preceded by a minus sign, one or more units on that card were disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. There may be a fault in cards **c1** or **c2**, or other cards.

**ACTION:** Replace the listed cards one at a time for this group following the steps in the *Hardware replacement* guide. After replacing each card, run the test again to see if this message reappears. If it does reappear replace another card.

2. The Peripheral buffer or controller for shelf 2 may be faulty.

**ACTION:** Replace the peripheral buffer or controller cards, one at a time, following the steps in the *Hardware replacement* guide. After replacing each card run the test again to verify that the fault is cleared.

3. The loop cable to PE shelf 3 may be faulty.

**ACTION:** Replace the cable, between the network card and the peripheral buffer card following the steps in the *Hardware replacement* guide. After replacing the cable run the test again to verify that the fault is cleared.

4. The network card may be faulty.

**ACTION:** Replace the network card following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

5. If only one card is listed, an intermittent PE card fault is possible.

**ACTION:** Replace the PE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### NWS3021s

Less than half the cards on the specified shelf could not be tested because they were either busy or disabled, or there were no Meridian 1 proprietary sets on the shelf. This is not a fault condition.

**ACTION:** Repeat the test if desired.

#### NWS3031s

For single density loops, more than half the cards on specified shelf s could not be tested because they were busy or disabled. For double or quad density loops, “some” of the cards in the shelf could not be tested because they were busy or disabled.

**ACTION:** Use ENLC x in LD 32 to enable the cards and run the test again. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**NWS401 l s c: u1 u2 un**

A fault has been detected on PE card **l s c**, (**u1** and **u2**, do not appear in the message), or PE unit **l s c u1**, **u2**. If a card or unit number is preceded by a minus sign, the card or unit was disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The PE card **l s c** may be faulty.

**ACTION:** Replace the PE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. The peripheral buffer on the shelf 2 may be faulty.

**ACTION:** Replace the peripheral buffer or controller card, following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

3. Meridian 1 proprietary sets associated with units **u1** or **u2** or other units may be faulty.

**ACTION:** Replace the Meridian 1 proprietary sets, following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

**NWS501 l s c u**

The telephone at **l s c u** failed the signaling test. If the unit number is preceded by a minus sign, the set was disabled.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. The Peripheral Equipment card may be faulty.

**ACTION:** Replace the PE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. The Meridian 1 proprietary set may be faulty.

**ACTION:** Replace the Meridian 1 proprietary set, following the steps in the *Hardware replacement* guide. Run the test again to verify that the fault is cleared.

## NWS502

The network loop is not configured.

**ACTION:** Check to make sure your data is correct and then re-enter the command.

## NWS601 loop

The **loop** requested is a Digital Trunk Interface (DTI) or Digital Link Interface (DLI).

**ACTION:** Refer to the *ISDN Basic Rate Interface* NTP, use LD 60.

## NWS602

The DTI/DLI loop failed the signaling test.

**ACTION:** Refer to the *ISDN Basic Rate Interface* NTP.

## NWS603

A previously faulty DTI/DLI loop passed the signaling test.

**ACTION:** Information only, no action is required.

Refer to *ISDN Basic Rate Interface* NTP.

## NWS604

The DTI loop is in a waiting state. A reset red alarm message has been sent.

**ACTION:** Refer to the *ISDN Basic Rate Interface* NTP, use LD 60.

## NWS608

There has been a Peripheral Software Download (PSDL) failure.

**ACTION:** Check the SDL messages.

## NWS609

The XNET or XPND network card has a problem.

**ACTION:** Check the card and its associated cable and repeat the command. If the problem persists, pull the card out and plug it back in. If the problem persists with the same command again, replace the XNET or XPND network card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## NWS610

A time-out occurred while waiting for the PSDL to complete the download function.

**ACTION:** Repeat the command.

**NWS611**

You cannot use this command when the card is in an overload condition.

**ACTION:** Look for an OVD message and follow the action for that message in the *OVD* chapter in this guide.

**NWS612**

Command parameter error; for NT8D02 Digital Line Card use, UNTT l s c u, for all others use, UNTT l s c.

**ACTION:** Re-enter the command.

**NWS613**

The proper card is not equipped.

**ACTION:** Check the card slot for the proper hardware.

**NWS614**

That command cannot be completed.

Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. For the NT8D02 Digital Line card:

a) The unit is busy.

**ACTION:** Be patient.

b) The unit is manually disabled.

**ACTION:** Use ENLC x in LD 32 to enable the card. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

c) The unit is not defined.

**ACTION:** Ensure that this is the command you wanted to use. If this is the correct command, refer to the *administration input/output guide* to program the unit.

2. For all others,

a) The card is manually disabled.

**ACTION:** Use ENLC x in LD 32 to enable the card. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

*b)* No unit is defined on the card.

**ACTION:** Ensure that this is the command you wanted to use. If this is the correct command, refer to the *administration input/output guide* to program the unit.

## NWS615

Loop must be a superloop.

**ACTION:** Ensure that this is the command you wanted to use.

## NWS617

The expanded shelf is not equipped.

**ACTION:** Information only, no action required.

## NWS620

The express output queue is full and the CPU cannot send the message to the MISP.

**ACTION:** Wait and re-enter the command.

## NWS621

The MISP output buffer is not available, possibly because the MISP has not read off the previous output message yet.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS622

Invalid message or invalid environment in which to send the message to the MISP.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS623

The message cannot be sent to the line card.card.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS624

Since this shelf contains at least one BRI line card, you must wait 45 seconds before enabling the shelf/loop.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS625

A database error. Protected pointers are missing.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.



**NWS626**

The self test command only applies to the MISP network cards and BRI line cards. Make sure you specify the correct card.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS627**

The MISP card must be in the MANUAL DISABLED state to perform the self-test.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS628**

Line card must be disabled to invoke the self-test.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS630**

The loop is unequipped.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS631**

The loop is not responding.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS632**

The self-test failed.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS633**

The MISP status is undefined (MISP SLSTAT bit combination).

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS635**

There is no response from the line card.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS636**

A MISP self-test cannot be invoked.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

**NWS637**

The self-test passed.

**ACTION:** Refer to *ISDN Basic Rate Interface* NTP.

## NWS638

A unit is not equipped.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS639

The TEI test could not be performed.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS640

There is no response from the MISP.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS641

Cannot execute command on MISP.

**ACTION:** Refer to *ISDN Basic Rate Interface NTP*.

## NWS650

This command is not allowed for XCT loops.

**ACTION:** Ensure that this is the command you wanted to use.

## NWS652

This command is not valid on phantom loops, since phantom loops do not physically exist. When phantom TN's are used the loop cards are not installed; therefore, you cannot test hardware that is not in the system.

**ACTION:** For further information, refer to the *Phantom TNs* section in the *Software Feature Guide*.

## NWS653

The command cannot be executed the on BCS Phantom loop. When phantom TN's are used the loop cards are not installed. Therefore you cannot test hardware that is not in the system.

**ACTION:** For further information, refer to the *Phantom TNs* section in the *Software Feature Guide*.

## NWS654

No Memory Test on BCS Phantom Loop. When phantom TN's are used the loop cards are not installed. Therefore you cannot test hardware that is not in the system.

**ACTION:** For further information, refer to the *Phantom TNs* section in the *Software Feature Guide*.

**NWS800**

The timeslot or junctor is busy and the test was not completed.

**ACTION:** Try again later.

**NWS801**

The continuity test failed.

**ACTION:** Re-enter the command, and if the problem continues replace the card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**NWS802**

The Network Card (NT8D04) failed to respond.

**ACTION:** Replace the Network card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**NWS803**

Superloop number must be a multiple of 4.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**NWS804**

The shelf number is not equipped.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**NWS805**

The message cannot be sent to Network Card (NT8D04).

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**NWS888**

Invalid input. The loop or junctor number is out-of-range or the command is not allowed on superloops, or the terminating or transmitting party is disabled.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## NWS927

Network Card (NT8D04) failed to respond within 10 seconds after sending a request to read or clear a Peripheral Controller (NT8D01) maintenance display.

**ACTION:** If the command fails a second time, use STAT 1 in LD 32 to get the status of the superloop.

## NWS928

The superloop number must be a multiple of 4.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## NWS929

The shelf number is not equipped.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## NWS930

Cannot send CPED or RPED message to Network Card (NT8D04).

**ACTION:** Make sure the network card is installed and use STAT 1 in LD 32 to enable the network card.

## NWS931

Cannot determine if the XTRUNK value is a Universal Trunk or E&M/Dictation Trunk (NT8D14/NT8D15).

**ACTION:** Use DISC 1 s c in LD 32 to disable and then re-enable the trunk card. Next perform an IDC to determine the trunk value. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

## NWS940

Wrong number of parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## NWS941

The loop number is out of range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**NWS942**

The active input device will be disabled. The command is ignored.

**ACTION:** Enter END to abort the program and re-enter the command from the maintenance telephone.

**NWS943**

A serious data error has been detected by NWS.

**ACTION:** Contact your technical support group.

**NWS944**

The loop is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

**NWS945**

There is no response from the maintenance interface

**ACTION:** Verify that the proper hardware is installed in the shelf. Re-enter the command.

**NWS946**

No acknowledgment returned for a previous message sent to the Network or Controller. The current command has been terminated.

**ACTION:** Retry the command later. If the problem persists, contact the supplier.

**NWS947**

Time out from Peripheral Software Download (PSDL).

**ACTION:** Try the command again. If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**NWS948**

Specified Peripheral Software (PSW) version number is out-of-range (1-99)

**ACTION:** Try again.

**NWS949**

Specified Peripheral Software (PSW) version (1-99) not found on the mass storage device.

**ACTION:** Use LD 22 PRT and PSWV to determine the available PSW versions and try again.

## NWS950

Unrecoverable error from Peripheral Software Download (PSDL).  
The command is aborted.

**ACTION:** Try again. If the problem persists, replace the card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## NWS955

Peripheral Software (PSW) number in hardware and protected memory do not match.

**ACTION:** Use DISL 1 in LD 32 to disable the superloop and then enable it with the software download option (ENLL <pswid>). Use LD 22 to determine the correct software version.

## NWS956

The card type is not found.

**ACTION:** Use LD 22 to find the card type for the Peripheral Software (PSW) version and try again.

## NWS957

There is a disk access error.

**ACTION:** Check the disk for the fault and try again. 

## OHAS — Off-Hook Alarm Security

Off-Hook Alarm Security is a resident program. OHAS does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

These messages indicate the occurrence of an Off-Hook Alarm.

### OHAS messages

**OHAS000 dn l s c u hh:mm:ss**

Off-Hook Alarm has occurred due to dial tone or interdigit timeout.

**ACTION:** Contact your technical support group.

**OHAS001 dn l s c u hh:mm:ss**

Off-Hook Alarm has occurred due to forced out-of-service call treatment.

**ACTION:** Contact your technical support group. 





# OSM — Operating System Messaging

Operating System Messaging is a resident program. OSM does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

## OSM messages

### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by either xxx0008 or xxx008.

**OSM000 Example message for <string>.**

**ACTION:** Information only, no action is required.

**OSM001 Cannot create pipe, errno x.**

**ACTION:** Contact your technical-support group.

**OSM002 Cannot open pipe for read/write, errno x.**

**ACTION:** Contact your technical-support group.

**OSM003 Cannot create OSM File semaphore, errno x.**

**ACTION:** Contact your technical-support group.

**OSM004 Cannot open OSM file for appending, errno x.**

**ACTION:** Contact your technical-support group.

**OSM005 Cannot open save file for writing, errno x.**

**ACTION:** Contact your technical-support group.

**OSM006 Cannot get OSM Save file semaphore errno x.**

**ACTION:** Contact your technical-support group.

**OSM007 Cannot save OSM file (copy failed), errno x.**

**ACTION:** Contact your technical-support group.

**OSM008 Cannot get OSM write file semaphore, errno x.**

**ACTION:** Contact your technical-support group.

**OSM009 Cannot fprintf to osm File, errno x.**

**ACTION:** Contact your technical-support group.

**OSM010 Cannot read from pipe, errno x.**

**ACTION:** Contact your technical-support group.

**OSM011 OsmTask has died.**

**ACTION:** Contact your technical-support group.

**OSM012 Cannot spawn osm Task, errno x.**

**ACTION:** Contact your technical-support group.

**OSM013 Cannot spawn period task, errno x.**

**ACTION:** Contact your technical-support group.

**OSM014 Daily log file save failed. Check CMDU power on/off switch.**

**ACTION:** Be sure the IOP enable/disable switch is enabled (up).

**OSM015 Disk getting full. Only x bytes remain.**

**ACTION:** Contact your technical-support group.

**OSM016 x byte log file size limit exceeded. Disk getting full, only y bytes remain.**

**ACTION:** Contact your technical-support group.

**OSM017 Cannot flush to log file errno <x>.**

**ACTION:** Contact your technical-support group. 

## OVD — LD 77 Locating Overloads

### In this chapter

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| How the OVD works . . . . .                         | 958 |
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| LD 77 input format . . . . .                        | 960 |
| When to use LD 77 . . . . .                         | 961 |
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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in *Hardware maintenance tools* chapter.

## What you should know before you use LD 77

LD 77 Manual Print program is used to print the contents of the CPU high and low priority input buffers.

### How a set or analog trunk uses input buffers

When a set or analog trunk signals a change of state, for example Off-Hook, On-Hook or Dialing, its PE card generates a flag bit and a message or messin which is sent serially to its network loop. The Peripheral Signaller scans each loop and locks on to the loops flag, then gathers the messin and a Terminal Number or TN from the loop. It takes 29 successive time slots for the peripheral signaller to gather the TN/messin and pass it to the CPU. The CPU places this TN/messin into an input buffer. The TN/messin consists of four words, a loop identification, shelf-card-unit identification, messin and time stamp. You would recognize the first two words as a TN. The messin tells the CPU the set/trunk is Off-Hook, On-Hook or dialing. The CPU then returns dial tone to the set, or whatever action is required.

## How the OVD works

The overload monitor detects and disables peripheral equipment which is generating excessive input messages, causing the system input buffers to overflow.

The following is a brief description of how a telephone signals to the CPU that it wants service and what happens if this process becomes faulty and the signaling does not stop.

### Normal operation of telephone sending message to CPU

When a telephone goes Off-Hook or On-Hook or a key is pressed or released, an input message is generated and sent to the system input buffers notifying the CPU this set wants service or dial tone returned. This process takes 29 successive time slot 0 (zeros) to notify the CPU.

### Fault causes message stream not to stop

The hardware on the peripheral signaling card keeps track of how long the Peripheral Signaler scans a loop for input messages. If a stream of input messages has no break for approximately 128 consecutive time slot 0, causing an input buffer overflow, then a **PS STUCK** interrupt is sent to the CPU. The CPU will order the **PS FREE**. If the Peripheral Signaler becomes stuck again the CPU will free it and keep track of how long this stuck/ free takes place.

### CPU executes the overload monitor program

If the stuck/ free condition lasts longer than 1.5 to 2 minutes, the CPU executes the overload monitor program, which detects three types of overload as follows:

**Card overload** — Monitors excessive messages from PE cards. If a card is faulty and one unit is the cause, then the unit is disabled, otherwise the card is disabled. If the disabled card is a trunk card it will be re-enabled after 10 minutes. If it overloads again it will be disabled until the midnight or daily maintenance routines are run.

**System overload** — If excessive messages come from a nonspecific PE card, this indicates a faulty Peripheral Signaler, network loop or extender card. If one loop is causing the problem, it is disabled. If more than one loop on a shelf overloads, then the peripheral signaler will be disabled. Disabling is done by an initialization **INI006** or **INI007**.

**Unequipped card overload** — Results in an **ERR020** printout, due to a Peripheral Equipment card that is:

- ◆ responding to more than one address
- ◆ responding to an illegal address
- ◆ software unequipped and is overloading

## LD 77 message output format



All numerical output is in hexadecimal format. An example of someone pressing the prime DN key on a set of TN 10 0 1 4, is as follows:

- ◆ **0A 0 1 4 91C0 5AC0**
- ◆ **0A** = loop ten
- ◆ **0** = shelf zero
- ◆ **1** = card one
- ◆ **4** = unit four
- ◆ **91C0** = telephone set key 0 activated
- ◆ **5AC0** = time in milliseconds that CPU received message

## LD 77 input format

All input is in decimal form. Space and carriage return are automatically done by the overlay when the expected number of digits are input. Early releases require two digits for loop, and later releases require three digits. An easy way to tell, is when the required number of digits are entered, the cursor will automatically space for you. If the input is incorrect the system responds with **?SYNTAX**.

For example:

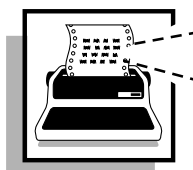
- ◆ for TN 1 0 2 0, enter: 001 0 02 00
- ◆ for TN 156 1 15 30, enter: 156 1 15 30

**Note:** Some software releases required a hexadecimal input for the loop.

This program has capabilities which are used by the software designers during development activities. The user is protected from accidental access to these commands, and resulting potential service

degradation, as a password is required. This password is not available to technicians. Users enter a “return” when the system asks for a password then enter the “P” commands.

When LD 77 is loaded into the overlay area the system responds with:



**MAN000**

.

**PASS**

.

## When to use LD 77

When an overload condition occurs, usually the OVD message has a TN included. With a TN it is a simple matter of changing out the offending card. In the example on the previous page it would be card 1 of PE shelf 0 of loop 10. In some cases there is no TN indicated. When this happens LD 77 can be very helpful as it will allow you to print out the TN causing the overload, from the input buffer.

Some overloads on PE cards can reflect back into the network loop causing the CPU to disable the loop or even the complete network shelf. These overloads usually do not have TNs indicated. This condition calls for the use of LD 77.

## How to use Manual Print LD 77

| STEP                 | ACTION                                                                                                                                                                                                                  |    |    |               |                |                      |        |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---------------|----------------|----------------------|--------|
|                      | A typical scenario.                                                                                                                                                                                                     |    |    |               |                |                      |        |
| <b>1</b>             | <b>System outputs OVDØ22 1Ø</b>                                                                                                                                                                                         |    |    |               |                |                      |        |
|                      | Note the system output.                                                                                                                                                                                                 |    |    |               |                |                      |        |
| <b>2</b>             | <b>Look up OVDØ22 1Ø in the OVD message section of this chapter.</b>                                                                                                                                                    |    |    |               |                |                      |        |
|                      | A large number of invalid input messages were received from more than one PE shelf on loop 10. Loop 10 is disabled. Probable fault on:                                                                                  |    |    |               |                |                      |        |
|                      | <ul style="list-style-type: none"> <li>a) Network card for loop 10</li> <li>b) Peripheral Buffer or Controller for loop 10</li> <li>c) PE cabling to loop 10</li> <li>d) any PE card associated with loop 10</li> </ul> |    |    |               |                |                      |        |
| <b>3</b>             | <b>Isolate loop 10 from the PE.</b>                                                                                                                                                                                     |    |    |               |                |                      |        |
|                      | Remove PE cable connector from network card loop 10.                                                                                                                                                                    |    |    |               |                |                      |        |
| <b>4</b>             | <b>Enable loop 10.</b>                                                                                                                                                                                                  |    |    |               |                |                      |        |
|                      | Use LD 32, ENLL 10. Then STAT 10, to make sure it is enabled.                                                                                                                                                           |    |    |               |                |                      |        |
| <b>5</b>             | <b>Check loop 10 for overload.</b>                                                                                                                                                                                      |    |    |               |                |                      |        |
|                      | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>loop disables</td><td>Replace card.</td></tr> <tr> <td>loop remains enabled</td><td>step 6</td></tr> </table>                                                         | If | Do | loop disables | Replace card.  | loop remains enabled | step 6 |
| If                   | Do                                                                                                                                                                                                                      |    |    |               |                |                      |        |
| loop disables        | Replace card.                                                                                                                                                                                                           |    |    |               |                |                      |        |
| loop remains enabled | step 6                                                                                                                                                                                                                  |    |    |               |                |                      |        |
| <b>6</b>             | <b>Isolate loop 10 cable from the PE</b>                                                                                                                                                                                |    |    |               |                |                      |        |
|                      | Remove PE cable connector from peripheral buffer or controller card associated with loop 10.                                                                                                                            |    |    |               |                |                      |        |
| <b>7</b>             | <b>Connect network card and cable.</b>                                                                                                                                                                                  |    |    |               |                |                      |        |
|                      | Reconnect PE cable to network card of loop 10.                                                                                                                                                                          |    |    |               |                |                      |        |
| <b>8</b>             | <b>Check loop 10 for overload</b>                                                                                                                                                                                       |    |    |               |                |                      |        |
|                      | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>loop disables</td><td>Replace cable.</td></tr> <tr> <td>loop remains enabled</td><td>step 9</td></tr> </table>                                                        | If | Do | loop disables | Replace cable. | loop remains enabled | step 9 |
| If                   | Do                                                                                                                                                                                                                      |    |    |               |                |                      |        |
| loop disables        | Replace cable.                                                                                                                                                                                                          |    |    |               |                |                      |        |
| loop remains enabled | step 9                                                                                                                                                                                                                  |    |    |               |                |                      |        |
| — continued —        |                                                                                                                                                                                                                         |    |    |               |                |                      |        |



| STEP                                                                                    | ACTION                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|-----------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------|-----------|---------|
| <b>9</b>                                                                                | <b>Isolate loop 10, cable and buffer/controller from the PE.</b>                                                                                                                                                                                                                                                                                                                                                                                                 |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
|                                                                                         | Unseat all PE cards from the first PE shelf or module backplane. If there is another PE shelf or module connected to loop 10, remove the cable that connects the first PE shelf or module to the next PE shelf or module.                                                                                                                                                                                                                                        |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| <b>10</b>                                                                               | <b>Connect loop 10, cable and first PE shelf.</b>                                                                                                                                                                                                                                                                                                                                                                                                                |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
|                                                                                         | Reconnect PE cable to first PE buffer or controller                                                                                                                                                                                                                                                                                                                                                                                                              |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| <b>11</b>                                                                               | <b>Check loop 10 for overload.</b>                                                                                                                                                                                                                                                                                                                                                                                                                               |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
|                                                                                         | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>loop disables</td><td>Replace buffer or controller.</td></tr> <tr> <td>loop remains enabled</td><td>step 12</td></tr> </table>                                                                                                                                                                                                                                                                                 | If | Do | loop disables                                                                           | Replace buffer or controller.                                    | loop remains enabled                              | step 12                                      |           |         |
| If                                                                                      | Do                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| loop disables                                                                           | Replace buffer or controller.                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| loop remains enabled                                                                    | step 12                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| <b>12</b>                                                                               | <b>Load overlay 77</b> (see <i>A tip for using LD 77</i> , following this table).                                                                                                                                                                                                                                                                                                                                                                                |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
|                                                                                         | <p>System responds with <b>MAN000 . PASS .</b></p> <p>Press <code>return</code></p> <p>Type <code>P 010</code> and press <code>return</code> (System will automatically enter a space for you after you type <code>P</code>.)</p> <p><i>Note:</i> Steps 13, 14 and 15 can be done without LD 77; however, you would have to wait five minutes to be sure each PE card is good. If checking four PE shelves this could take at least 200 minutes to complete.</p> |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| <b>13</b>                                                                               | <b>Replace PE card.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
|                                                                                         | Reseat one PE card into the PE shelf backplane.                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| <b>14</b>                                                                               | <b>Check each PE card for overload.</b>                                                                                                                                                                                                                                                                                                                                                                                                                          |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
|                                                                                         | <table> <tr> <th>If</th><th>Do</th></tr> <tr> <td>System responds with a rapid succession of <b>PS STUCK</b> and <b>PS FREE</b> messages.</td><td>Replace PE card and repeat this step for all remaining PE cards.</td></tr> <tr> <td>A few messages appear but not a rapid succession.</td><td>Repeat this step for all remaining PE cards.</td></tr> <tr> <td>last card</td><td>step 15</td></tr> </table>                                                     | If | Do | System responds with a rapid succession of <b>PS STUCK</b> and <b>PS FREE</b> messages. | Replace PE card and repeat this step for all remaining PE cards. | A few messages appear but not a rapid succession. | Repeat this step for all remaining PE cards. | last card | step 15 |
| If                                                                                      | Do                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| System responds with a rapid succession of <b>PS STUCK</b> and <b>PS FREE</b> messages. | Replace PE card and repeat this step for all remaining PE cards.                                                                                                                                                                                                                                                                                                                                                                                                 |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| A few messages appear but not a rapid succession.                                       | Repeat this step for all remaining PE cards.                                                                                                                                                                                                                                                                                                                                                                                                                     |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| last card                                                                               | step 15                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |
| <b>— continued —</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |                                                                                         |                                                                  |                                                   |                                              |           |         |

| STEP                                                                              | ACTION                                     |
|-----------------------------------------------------------------------------------|--------------------------------------------|
| 15                                                                                | <b>Check other PE shelves for overload</b> |
|                                                                                   | <b>If</b>                                  |
|                                                                                   | more PE shelves on loop 10                 |
|                                                                                   | one PE shelf on loop 10                    |
|                                                                                   | <b>Do</b>                                  |
|                                                                                   | step 9                                     |
|                                                                                   | end                                        |
|  |                                            |

### A tip for using LD 77

When a Meridian 1 is handling a lot of telephone calls, there will be a large number of valid messages generated from the peripheral equipment. Thus, the program will be most effective for troubleshooting when there is little system traffic and when the message address range is restricted to only at one loop, shelf or card.

**LD 77 input commands**

| <b>Command</b>                                 | <b>Description</b>                                                                                                                                                                                                                          | <b>Release</b> |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Print all messages</b>                      |                                                                                                                                                                                                                                             |                |
| <b>P</b>                                       | Print all messages. There may be a large number of valid messages generated by using the P command. The program will be more effective for troubleshooting when the message address range is restricted to only at one loop, shelf or card. | basic 1        |
| <b>Print all messages from specified loop</b>  |                                                                                                                                                                                                                                             |                |
| <b>P III</b>                                   | Print all messages from specified loop. Enter the exact number of loop digits. For example: for loop 4, enter 004.                                                                                                                          | basic-1        |
| <b>Print all messages from specified shelf</b> |                                                                                                                                                                                                                                             |                |
| <b>P III s</b>                                 | Print all messages from specified shelf. Enter the exact number of loop digits. For example: for loop 4, enter 004.                                                                                                                         | basic-1        |
| <b>Print all messages from specified card</b>  |                                                                                                                                                                                                                                             |                |
| <b>P III s cc</b>                              | Print all messages from specified card. Enter the exact number of loop and card digits. For example: for loop 4, enter 004; card 6 enter 06.                                                                                                | basic-1        |
| <b>Stop printing</b>                           |                                                                                                                                                                                                                                             |                |
| <b>N</b>                                       | Stop print.                                                                                                                                                                                                                                 | basic-1        |

## OVD — Overload monitor

This resident program detects and disables peripheral equipment that is generating excessive input messages, causing the system input buffers to overflow and output an OVD message.

## How the overload monitor works

The following is a brief description of how a telephone signals to the CPU that it wants service and what happens if this process becomes faulty and the signaling does not stop.

### Normal operation of telephone sending message to CPU

When a telephone goes Off-Hook or On-Hook or a key is pressed or released, an input message is generated and sent to the system input buffers notifying the CPU this set wants service or dial tone returned. This process takes 29 successive time slot 0 (zeros) to notify the CPU.

### Message stream faulty, does not stop

The hardware on the Peripheral Signaling card keeps track of how long the peripheral signaler scans a loop for input messages. If a stream of input messages has no break for approximately 128 consecutive time slot 0, causing an input buffer overflow, then a “PS STUCK” interrupt is sent to the CPU. The CPU will order the “PS FREE”. If the peripheral signaler becomes stuck again the CPU will free it and keep track of how long this takes place.

### CPU executes the overload monitor program

If the condition as described in the above paragraph lasts longer than 1.5 to 2 minutes, the CPU executes the overload monitor program, which detects three types of overload as follows:

**Card overload** — Monitors excessive messages from PE cards. If a card is faulty and one unit is the cause, then the unit is disabled, otherwise the card is disabled. If the disabled card is a trunk card it will be re-enabled after 10 minutes. If it overloads again it will be disabled until the midnight or daily maintenance routines are run.

**System overload** — If excessive messages come from a nonspecific PE card, this indicates a faulty PS, network loop or extender card. If one loop is causing the problem, it is disabled. If more than one loop on a shelf overloads, then the peripheral signaler will be disabled. Disabling is done by an initialization INI006 or INI007.

**Unequipped card overload** — Results in an ERR020 printout, due to a peripheral equipment card that is:

- ◆ responding to more than one address
- ◆ responding to an illegal address
- ◆ software unequipped and is overloading

## Procedure for OVD message without a TN

The CPU may be unable to identify a unit, card, or PE shelf. If this happens there may be no TN or an incomplete TN. For this condition see the Manual print LD 77 section of this book.

### Using the OVD Message table to clear faults

To clear most overload faults, the OVD action column suggests you use LD 32 overlays found in the *NPR* chapter. A few OVD actions require you to use overlay loads located in another guide.

## OVD messages

### OVD001 l s c (u)

A 500/2500 card or unit has been disabled.

**ACTION:** Use ENLC l s c in LD 32 to enable the card.

Use ENLU l s c u in LD 32 to enable the unit. If the card or unit does not enable, replace the line card by following the steps in the *Hardware replacement* guide. Verify the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

### OVD002 l s c (u)

A BSC line card or unit has been disabled.

**ACTION:** Use ENLC l s c in LD 32 to enable the card.

Use ENLU l s c u in LD 32 to enable the unit. If the card or unit does not enable, replace the line card by following the steps in the *Hardware replacement* guide. Verify the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

### OVD003 l s c (u)

A trunk card or unit has been disabled.

**ACTION:** Use ENLC l s c in LD 32 to enable the card.

Use ENLU l s c u in LD 32 to enable the unit. If the card or unit does not enable, replace the trunk card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

### OVD004 l s c (u)

1. A Digital set line card or unit has been disabled.

**ACTION:** Use ENLC l s c in LD 32 to enable the card. Use ENLU l s c u in LD 32 to enable the unit. If the card or unit does not enable, replace the line card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

2. Unterminated or unequipped units on QPC578 or NT8D02AA line cards may produce erroneous OVD004 messages.

**ACTION:** To avoid erroneous OVD004 messages, go to the *administration input/output guide*, use LD 11 to program these units.

Use DISU 1 s c u in LD 32 to disable the units you just programed. If you need help with the LD 32 commands or system responses go to the *NPR* chapter in this guide.

**OVD005 1 s c (u)**

A Digitone Receiver card or unit has been disabled.

**ACTION:** Use ENLR 1 s c (u) in LD 34 to enable the card or unit. If the card or unit does not enable, replace the DTR card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses go to the *TDS* chapter in this guide.

**OVD008 loop**

Overload detected from Local Carrier Buffer (LCB) card on specified loop. The carrier status monitoring function on the LCB has been disabled.

**ACTION:** Use ENLC 1 s c in LD 32 to enable the card.

Use ENLU 1 s c u in LD 32 to enable the unit. If the card or unit does not enable, replace the LCB card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

**OVD009 1 s c (u)**

An AIOD trunk card or unit has been disabled.

**ACTION:** Use ENLC 1 s c in LD 32 to enable the card. Use ENLU 1 s c u in LD 32 to enable the unit. If the card or unit does not enable, replace the AIOD card by following the steps in the *Hardware replacement* guide. Verify that the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

**OVD010 1 s c (u)**

A RAN trunk card or unit has been disabled.

**ACTION:** Use ENLC 1 s c in LD 32 to enable the card. Use ENLU 1 s c u in LD 32 to enable the unit. If the card or unit does not enable, replace the RAN card by following the steps in the *Hardware replacement* guide. Verify the fault is cleared. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

## **OVD021 loop**

Excessive input has been detected from specified loop. The loop was disabled. A minor alarm indication is given to all customers served by the loop.

This message indicates a probable fault in:

1. Network card for the loop.
2. Peripheral Buffer or Controller for the loop.
3. Interconnecting cables.
4. Any PE card.

**ACTION:** See *How to use manual print LD 77* in this chapter.

## **OVD022 loop**

A large number of invalid input messages were received from more than one PE shelf on the loop. The loop has been disabled.

A fault may exist on the following:

1. Network card for loop.
2. Peripheral Buffer or Controller for the loop.
3. PE cabling.
4. Any PE card.

**ACTION:** See *How to use manual print LD 77* in this chapter.

## **OVD023 l s**

A large number of invalid input messages was received from shelf s. Attempts to disable the offending PE card(s) failed; the loop has been disabled.

A fault may exist on the following:

1. Peripheral Buffer or Controller on the shelf.
2. Any PE card on indicated shelf.
3. Network card for the loop.
4. PE cabling.

**ACTION:** See *How to use manual print LD 77* in this chapter.

## **OVD024 l s**

Shelf s has been disabled due to overload.

A fault may exist on the following:

1. Peripheral Buffer or Controller on the shelf.
2. Any PE card on that shelf.

**ACTION:** See *How to use manual print LD 77* in this chapter.



**OVD031 ps**

Excessive or invalid input has been detected from Peripheral Signaling card. The card was disabled.

This message indicates a probable fault in:

1. Peripheral Signaling card.
2. One of the network card associated with the PS.
3. Conference card or its network cable. (Found only on SL-1 L, VL, LE and XL systems.)

**ACTION:** See *How to use manual print LD 77* in this chapter.

**OVD032 loop**

Too many messages from loop DTI2 loop. Loop is disabled.

**ACTION:** Refer to the *ISDN Primary Rate Interface guide*.

**OVD033 loop ch**

Channel **ch** of a DTI loop is disabled due to overload. A fault may exist in the DTI card, carrier or cables.

**ACTION:** Refer to the *ISDN Primary Rate Interface guide*. 

# OVD

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## OVL — Overlay Loader

### How the OVL works

After the Log In sequence and password, the Overlay Loader (OVL) becomes active and accepts commands keyed from the SDI terminals. The Overlay Loader will respond to the commands as follows:

- ◆ **LD xx** — loads non-resident administration and maintenance programs from tape or disk into the overlay area, and then the loaded program assumes control. The xx represents the number of the desired non-resident program.
- ◆ **ENLT** — enables the tape interface or the MSI or FDU or MDU card.
- ◆ **DIST** — disables the tape interface or the MSI or FDU or MDU card.
- ◆ **STAT** — prints the status of the tape interface or the MSI or FDU or MDU card.
- ◆ **END** — ends the control of the current non-resident program without aborting the overlay area, allowing the person who is logged in to maintain control.
- ◆ **\*\*\*\*** — aborts the current overlay program, allowing another program to be loaded into the overlay area. For example, if the Meridian 1 is in the midnight or daily routine phase, it will immediately put a diagnostic program into the overlay area, logging out the previous user.
- ◆ **LD xx D** — for systems running on Release 19 and later software, this command forces the overlay to load from the disk rather than from cache memory.

## OVL messages

### OVL000

Program identifier. It indicates that you are logged into the system.

**ACTION:** The overlay loader is ready for you to enter any of the six commands listed in the previous section.

### OVL001

Loading already in progress.

**ACTION:** Wait for completion of loading or enter \*\*\*\* to halt loading.

### OVL003 xx

Requested program **xx** is not in the tape directory.

**ACTION:** Contact your technical support group to see if the desired program should be in the directory. For example, if you request LD 29 Memory Management to loaded into the overlay area on a Meridian SL-1NT, XT, Options 51, 51C, 61, 61C, 71 or 81, this message appears, because Memory Management is not applicable to these systems.

### OVL004

1. Checksum failure. Re-enter load request.

**ACTION:** Use the LD 22 D command to force the overlay to load from the disk rather than the cache buffers, or turn off switch 4 on the MSI card and load overlay LD 22 from the floppy drive. If you choose the later option, remember to turn switch 4 on again when you are finished.

Enter PRT CFN (or CEQU, if applicable) to verify how many cache buffers are allocated.

Refer to the *administration input/output guide*. Use LD 17 CACH to reduce the number of cache buffers. Try only 20 cache buffers in the system as each buffer uses 19,000 words of memory. Consider the Multi-User feature as it requires a minimum of four cache buffers.

A possible restore to the hard disk may be required to have the hard disk load overlays properly. In this case use the RES command in LD 43 to copy the entire contents of the floppy to the hard disk. If you need help with the commands or system responses go to the *EDD* chapter in this guide.

Expand the memory if the option is available on your system and if the use of all 32 allowable cache buffers is required.

**2.** Receiving this message when loading overlays or when other users attempt to log on to the system.

**ACTION:** Load an overlay using the LD xx D command.

Load an overlay from the floppy drive instead of the hard disk (turn switch 4 off on the MSI). Use LD 22 and verify how many cache buffers are allocated and reduce or eliminate them.

A possible restore to the hard disk may be required to have the hard disk load the overlays properly.

The system hard drive may be faulty.

Check for insufficient memory to run the Multi-User feature and for too many overlays loaded for access.

Use only 20 cache buffers in the system. Each buffer uses 20K of memory.

Expand the memory if the option is available, and if the use of all 32 allowable cache buffers is required.

#### **OVL005**

Tape unit not ready for use.

**ACTION:** Confirm that the tape cartridge is properly seated.

#### **OVL008**

**1.** Unexpected or erroneous data found on tape.

**ACTION:** Interchange the active and backup tapes and re-enter the load command.

2. Receiving this message when loading overlays or when other users attempt to log onto the system.

**ACTION:** Load an overlay using the LD xx D command.

Load an overlay from the floppy drive instead of the hard disk (turn switch 4 off on the MSI). Use LD 22 and verify how many cache buffers are allocated and reduce or eliminate them.

A possible restore to the hard disk may be required to have the hard disk load the overlays properly.

The system hard drive may be faulty.

Check for insufficient memory to run the Multi-User feature and for too many overlays loaded for access.

Use only 20 cache buffers in the system. Each buffer uses 20K of memory.

Expand the memory if the option is available, and if the use of all 32 allowable cache buffers is required.

## OVL009

1. Tape contains software generic different from that resident in system memory. The programs are not compatible and overlay program requested was not loaded.

**ACTION:** Load the overlay from the target software instead of from the source software. If you need help refer to the *Software Conversion Procedures NTP*.

Refer to the *Circuit Pack Installation & Testing NTP* and following the steps verify that the switch settings on the MSI/FDI are set to access the proper source. If your system uses tape, replace the tape in the drive with the one that was used when the system was loaded.

2. Receiving this message when attempting to load LD 43 after upgrading to an Option 21E, Release 19.

**ACTION:** Load the overlay from the target software instead of the source software. Verify that the switch settings on the MSI/FDI are set to access the proper source.

**OVL010**

Overlay program exceeds allowed maximum size. A tape programming error has been made.

**ACTION:** Contact your technical support group.

**OVL011xx MID**

System is automatically executing maintenance Overlay xx. 32 PBXT— This output means that Overlay 32 is being run, and Message Waiting lamp tests are scheduled.

**ACTION:** DO NOT log in until these tasks are completed; they may be essential to maintain system integrity. After a few minutes, press the carriage return or enter key to recheck the system status.

**OVL012**

Incorrect command format.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**OVL013**

Invalid input command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**OVL014**

Incorrect parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**OVL015**

Password is incorrect.

**ACTION:** Check to make sure your data is correct and re-enter the correct password.

**OVL016**

Allowed limits of password exceeded.

**ACTION:** Wait and reattempt log in again.

**OVL017**

Overlay cannot be loaded from a TTY.

**ACTION:** Use the correct password and try again.

## OVL018

Password does not have access to this customer.

**ACTION:** Contact your technical support group.

## OVL020

System has aborted the current overlay program because:

1. A TTY has successfully logged in.

**ACTION:** Contact your technical support group to determine who will have priority access to the overlay area.

2. The overlay area is required because of a system alarm, a system audit, or daily routine.

**ACTION:** Wait until this condition is completed.

## OVL021 aaa

System requires the overlay area one of the following tasks. The codes for **aaa** are as follows:

**MID** = daily midnight routines are scheduled

**ALRM** = system alarm has been triggered

**AUD** = system requires software audit

**CDR** = system requires test of CDR facility

**SMFR** = soft memory failure recovery

**PBXT** = PBXT Message Waiting Lamp tests are scheduled

**ACTION:** Complete your present work as soon as possible and enter \*\*\*\* followed by LOGO.

## OVL022

Manual loading of this program is prohibited.

**ACTION:** Ensure that this is the command you wanted to use.

## OVL023

Loading overlay program from this TTY is not allowed.

**ACTION:** Check to make sure you are using the correct DTE and re-enter the command from the correct DTE.



**OVL058**

Permanent interrupt condition detected in primary tape. The tape unit has been disabled.

**ACTION:** Replace the drive unit by following the steps in the *Hardware Replacement guide*.

**OVL059**

Tape Interface card is not responding. Primary tape cannot be enabled until fault is cleared.

**ACTION:** Replace the tape interface card by following steps in the *Hardware Replacement guide*.

**OVL060**

History File package not equipped.

**ACTION:** Contact your technical support group.

**OVL061**

A user is active in the overlay.

**ACTION:** Do not log in. Contact your technical support group and determine if the present user should finish before you log in.

**OVL066**

X11 Release 1 to Release 2 conversion CR1R2 X09rl7 to X11R2 conversion C97R2.

**ACTION:** Information only, no action required.

**OVL068**

Add new NARS/BARS, CDP data to existing customer—BLD1.

**ACTION:** Information only, no action required.

**OVL069**

Build the DN. Translation base of the new data loaded via BLD1-BLD2.

**ACTION:** Information only, no action required.

**OVL070**

ATTN admin PBX set service change.

**ACTION:** Information only, no action required.

## OVL071

ATTN admin SL-1 set service change.

**ACTION:** Information only, no action required.

## OVL073

DTI service change.

**ACTION:** Information only, no action required.

## OVL086

S1ESN ESN Overlay 1.

**ACTION:** Information only, no action required.

## OVL087

S2ESN ESN Overlay 2.

**ACTION:** Information only, no action required.

## OVL088

SCAUT—Authcode overlay (removed from 24).

**ACTION:** Information only, no action required.

## OVL090

S3ESN ESN Overlay 3.

**ACTION:** Information only, no action required.

## OVL093

SCTEN service change tenant data blocks.

**ACTION:** Information only, no action required.

## OVL099

Software tool to replace one or more existing global procedure in core with load global.

**ACTION:** Information only, no action required.

## OVL111

The overlay area is being used. The data output with the OVL111 is defined below.

**1.** If **OVL111 = 00 IDLE**, System is idle. A login will result in a > prompt.

**ACTION:** Information only. Log in if you want to.

2. If **OVL111 = xx BKGD**, Overlay area is currently executing background task (Overlay nn). A login will result in a > prompt indicating that background task has been aborted and the overlay loader is ready for further commands.

**ACTION:** Information only. Log in if you want to.

3. If **OVL111 = 00 TTY x**, then TTY x has control of the overlay area. No Overlay program is loaded.

**ACTION:** Before you log in, contact your technical support group to determine who has access to the overlay area.

4. If **OVL111 = nn TTY x**, then TTY x or maintenance set has control of the overlay area. Overlay program nn is loaded.

**ACTION:** Contact your technical support group to determine who will have priority access to the overlay area before you log in.

5. If **OVL111 = 00 SL1**, maintenance set has control of the overlay area. No Overlay program is loaded.

6. If **OVL111 = nn yyy**, The system is automatically executing a maintenance task. DO NOT log in unless absolutely necessary, until these tasks are completed. They may be essential to maintain system integrity. Recheck system status by pressing the carriage return key again after a few minutes.

The value **yyy** may be:

**MID** = daily midnight routines are scheduled

**ALRM** = system alarm has been triggered

**AUD** = system requires software audit

**CDR** = system requires test of CDR facility

**PBXT** = PBXT message waiting tests

**SMFR** = soft memory failure recovery

If the input device is an SL-1 telephone, OVL111 is represented by a busy tone or overflow tone. The telephone can be returned to the call processing mode by going Off-Hook, then On-Hook. This procedure is useful if you do not wish to abort the current overlay activity.

**ACTION:** Information only, no action required.

## OVL202

The Route member does not exist.

**ACTION:** Refer to the *administration input/output guide*. To check the route members, use LD 21 RDB and re-enter command.

## OVL305

A bad message has been received from the System Monitor (NT8D22).

**ACTION:** Use the “STAT XSM” command in LD 37 to check the System Monitor status. Check the cabling between the System Monitor and the SDI port.

## OVL306

This overlay cannot be active during Peripheral Software Download (PSDL).

**ACTION:** Wait until the PSDL is complete and use the SUSP command to suspend the PSDL. Load the required program (LD xx SUSP), but use the SUSP command with caution.

## OVL307

You do not have access to the Resident Debugger (LD 8).

**ACTION:** Contact your technical support group.

## OVL308

Incorrect password entered for the Resident Debugger (LD 8).

**ACTION:** Obtain the correct password and try again

## OVL309

You do not have access to that overlay.

**ACTION:** The Limited Access Password (LAPW) is in effect.

## OVL310

With LAPW enabled, maintenance sets are not allowed to load this overlay.

**ACTION:** Information only, no action required.

## OVL352

List requested is not system speed call list (Network Speed Call).

**ACTION:** Check your database and re-enter the command.

**OVL353**

The security cartridge cannot be read, or the cartridge ID does not match the ID in the directory file. LD 135 and LD 137 can still be accessed.

**ACTION:** Contact your technical support group.

**OVL354**

The tape ID does not match the system ID. An incorrect tape or disk is being used, or there is a system ID cartridge malfunction on MSI. LD 135 and LD 137 can still be accessed.

**ACTION:** Contact your technical support group.

**OVL355**

The directory file cannot be read to obtain the ID for comparison to security and system IDs. LD 135 and LD 137 can still be accessed.

**ACTION:** Contact your technical support group.

**OVL400**

Failed logon attempts by incorrect password (PWD1 or PWD2).

Output data may be either of the following:

**x** = TTY x is locked out. Too many invalid passwords

**x y** = x failed logins on TTY y

**TTYx y** = TTYx was locked out y times.

**ACTION:** You must wait till the LAPW timer expires which could be up to 60 minutes, then attempt to log in again with the proper password.

**OVL401**

The Audit Trail buffer is full, and will now start to wrap.

**ACTION:** Information only, no action required.

**OVL402**

There is not enough memory for the Audit Trail, and it will now start to wrap.

**ACTION:** Check the available memory, and add more if necessary.

**OVL403 x**

You have logged on in HOST mode on TTY port x. Other ports will not receive any messages (CDR, BUG, ERR, MTC, SCH or TRF) output to this port.

**ACTION:** Information only, no action required.

**OVL404x aaa bbb**

The TTY port x is in HOST mode and this TTY will not receive message types: aaa bbb. MTC represents all maintenance messages when the message types can be CDR, BUG, ERR, MTC, SCH or TRF.

**ACTION:** Program the USER prompt in LD 17 to add Messages.

**OVL405 xx**

Attempt to load an Overlay program xx on A2 disk.

**ACTION:** Use LD 43 RES to copy contents of backup floppy diskettes to hard drive, or insert floppy diskette A2 to access LD xx.

**OVL406**

Low speed link is used by the other terminal.

**ACTION:** Information only, no action required.

**OVL407xx yy**

Requested number of cache buffers cannot be allocated. Protected data-store is below safety limit. Increase the memory before more cache buffers can be allocated. Where:

**xx** = the number of buffers requested

**yy** = the number of buffers allocated

**ACTION:** Unload the cache buffers and re-enter the overlays.

**OVL408 xx**

There are too many priority overlays. xx = number of priority overlays which have been removed automatically.

**ACTION:** Do not assign more priority overlays than allowed. For further information, refer to the *administration input/output guide*, LD 17 prompt CACH for limit.

**OVL409 xx**

Initialization of an OVL pipe failed.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**OVL410**

No pipe is available for use.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

**OVL411**

LD 135, and LD 137 are the only LDs available for task overlays.

**ACTION:** Information only, no action required.

**OVL412**

Cannot spawn the requested overlay task.

**ACTION:** Contact your technical support group.

**OVL413**

Cannot kill the overlay task.

**ACTION:** Re-enter the command, and if the problem still occurs contact your technical support group.

**OVL414**

Send character to overlay task through pipe failed.

**ACTION:** Contact your technical support group.

**OVL415**

Displayed after a successful login if the Last Login Identification feature is enabled. It contains the time and date of the last login and the number of failed login attempts. The format is **TTYxx nn PWD yyy mm/dd hh:mm**

**xx** = the TTY port number

**nn** = number of failed log in attempts count since the last login at this port

**yyy** = password identification

**yyy** = 1 for PWD1

**yyy** = 2 for PWD2

**00-99** = indicates LAPW password number between 00 and 99

**mm/dd** = last login date

**hh:mm** = last login time

**ACTION:** Information only, no action required.

## OVL416

You cannot monitor this port.

**ACTION:** Information only, no action required.

## OVL417

Password level is incorrect. Login with PWD2 password, or a LAPW password that allows the command.

**ACTION:** Contact your technical support group.

## OVL418

The monitor feature is already in use.

**ACTION:** Use MON OFF to turn off the monitoring feature before using it on another port.

## OVL419

Send Print (SPRT) is already in use.

**ACTION:** Use SPRT OFF to turn the feature off, then use SPRT xx to turn it on, on another port.

## OVL420

That port is busy, or already logged in.

**ACTION:** Information only, no action required.

## OVL421

That port does not physically exist.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 PRT to check the port programming.

## OVL422

That TTY port type is not SCH or MTC.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 PRT to check the port programming.



**OVL423**

This is not a logged in port.

**ACTION:** Information only, no action required.

**OVL424**

The maximum number of users are already logged in.

**ACTION:** Information only, no action required.

**OVL425**

You cannot force logout yourself.

**ACTION:** Check the port number when using the FORC command.

**OVL426**

**1.** There is not enough overlay memory available for the overlay data area.

**ACTION:** Use the LD 22 D command to force the overlay to load from the disk rather than the cache buffers, or turn off switch 4 on the MSI card and load overlay LD 22 from the floppy drive. If you choose the later option, remember to turn on switch 4 when you are finished.

Enter PRT CFN (or CEQU, if applicable) to verify how many cache buffers are allocated.

Refer to the *administration input/output guide*. Use LD 17 CACH to reduce the number of cache buffers. Try only 20 cache buffers in the system as each buffer uses 19,000 words of memory. Consider the multi-user feature also, as it requires a minimum of four cache buffers.

A restore to the hard disk may be required for the hard disk to load overlays properly. In this case use RES in LD 43 to copy the entire contents of the floppy to the hard disk. If you need help with the commands or system responses go to the *EDD* chapter in this guide.

Expand memory if the option is available on your system and if the use of all 32 allowable cache buffers is required.

**2.** Receiving this message when loading overlays or when other users attempt to log onto the system.

**ACTION:** Load an overlay using the LD xx D command.

Load an overlay from the floppy drive instead of the hard disk (turn switch 4 off on the MSI). Load OVL#22 and verify how many cache buffers are allocated and reduce or eliminate them.

A restore to the hard disk may be required for the hard disk to load the overlays properly.

The system hard drive may be faulty.

Check for insufficient memory to run the Multi-User feature and for too many overlays loaded for access.

Use only 20 cache buffers in the system. Each buffer uses 20K of memory.

Expand the memory if the option is available and if the use of all 32 allowable cache buffers is required.

**OVL427**

The disk unit is busy.

**ACTION:** Try again later.

**OVL428**

Login name and password combination is invalid.

**ACTION:** Check to make sure your data is correct and re-enter the command. If you still cannot log in, contact your technical support group.

**OVL429**

1. Overlay memory space is in use.

**ACTION:** Try again or load a different overlay.

2. Receiving this message when attempting to load an overlay.

**ACTION:** If Multi-User is available, type WHO on the TTY to show you who is logged into the system and FORCxx to force the terminal to show you who is using the overlay area to log off. If you do not know the second level password, contact your technical support group.

**OVL434**

Unable to initialize system message lookup.

**ACTION:** Contact your technical support group.

**OVL435 n**

Invalid lookup type received by help task: **n**.

**ACTION:** Contact your technical support group.

**OVL436 n m**

B-tree read failed for language **n**, **m** = rrn.

**ACTION:** Contact your technical support group.

**OVL437 n**

Unable to open message file for language **n**.

**ACTION:** Contact your technical support group.

**OVL438 n**

Could not open B-tree index file for language **n**.

**ACTION:** Contact your technical support group.

**OVL439 n**

Unable to read B-tree root page for language **n**.

**ACTION:** Contact your technical support group.

**OVL440 n**

B-tree initialization failed for language **n**.

**ACTION:** Contact your technical support group.

**OVL441**

Help text could not be found for the specified error code.

**ACTION:** Information only, no action required.

**OVL442**

The error code specified is not a valid error code.

**ACTION:** Information only, no action required.

**OVL443**

Unable to send request.

**ACTION:** Re-enter the command.

**OVL444**

Unable to create help task queue.

**ACTION:** Verify commands in the *input/output guide*.

**OVL446**

The LON and LOF commands are not applicable to MSDL TTY.

**ACTION:** Check the database and re-enter the commands.

**OVL447**

Use LD 135 for Option 81 Core Common Equipment Diagnostic.  
LD 35 does not apply.

**ACTION:** Information only, no action required.

**OVL448**

System message lookup is temporarily unavailable.

**ACTION:** Wait 30 seconds and repeat the request.

**OVL700**

Resident debug package is not equipped.

**ACTION:** Information only, no action required.

**OVL777**

Resident debug package is already loaded.

**ACTION:** Information only, no action required

**OVL778**

LSL with flow type of MAIL is not accessible from a pseudo TTY.

**ACTION:** Make sure that this is the command you wanted  
to use 

## PCH — System Patch Reports

System Patch Reports is a resident program. PCH does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### PCH messages

#### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

**PCH0100 Cannot create semaphore.**

**ACTION:** Contact your technical support group.

**PCH0101 An invalid semaphore ID or task timed out.**

**ACTION:** Contact your technical support group.

**PCH0102 Warning: failed to add symbol n to symbol table.**

**ACTION:** Contact your technical support group.

**PCH0103 Warning: failed to remove symbol n from symbol table.**

**ACTION:** Contact your technical support group.

**PCH0107 Cannot write back activate memory list. Patch data inconsistency might have occurred.**

**ACTION:** Contact your technical support group.

**PCH0108 Program corruption. Restore-memory list is null.**

**ACTION:** Contact your technical support group.

**PCH0109 Program corruption. Activate-memory list is null.**

**ACTION:** Contact your technical support group.

**PCH0110 PATCH x ACTIVATED. Name = a, Ref# = b, PRS# = c, File = d.**  
**ACTION:** Contact your technical support group.

**PCH0111 PATCH x DEACTIVATED. Name = a, Ref# = b, PRS# = c, File = d.**  
**ACTION:** Contact your technical support group.

**PCH0113 Cannot restore back memory. Patch data inconsistency might have occurred.**  
**ACTION:** Contact your technical support group.

**PCH0115 Error activating patch x. buildMemLists call failed.**  
**ACTION:** Contact your technical support group.

**PCH0116 Error writing memory. Cannot activate patch x.**  
**ACTION:** Contact your technical support group.

**PCH0117 Error writing memory. Cannot deactivate patch x.**  
**ACTION:** Contact your technical support group.

**PCH0119 Cannot load patch. System contains maximum number of patches already.**  
**ACTION:** A Patch must be removed before a new one can be added.

**PCH0120 Error writing to retention file. Retention info might be out of synch.**  
**ACTION:** Contact your technical support group.

**PCH0123 Error loading patch from n.**  
**ACTION:** Contact your technical support group.

**PCH0124 Internal error, cannot get summary patch status at this time.**  
**ACTION:** Check the report log file for further information.

**PCH0125 Internal error, cannot deactivate patch at this time.**  
**ACTION:** Check the report log file for further information.

**PCH0126 Internal error, cannot activate patch at this time.**  
**ACTION:** Check the report log file for further information.

**PCH0127 Internal error, cannot load patch at this time.**  
**ACTION:** Check the report log file for further information.

**PCH0129 Internal error, cannot get detailed patch status at this time.**

**ACTION:** Check the report log file for further information.

**PCH0130 Internal error, cannot remove patch at this time.**

**ACTION:** Check the report log file for further information.

**PCH0131 Error deleting patch status record. Record not found.**

**ACTION:** Contact your technical support group.

**PCH0132 Patch status tail pointer is null.**

**ACTION:** Contact your technical support group.

**PCH0133 Invalid patch level received in patchload.**

**ACTION:** Contact your technical support group.

**PCH0134 Full patch path length exceeded.**

**ACTION:** Contact your technical support group.

**PCH0136 Patch filename empty in patchload.**

**ACTION:** Contact your technical support group.

**PCH0137 Patch filename is not a full path in patchload.**

**ACTION:** Contact your technical support group.

**PCH0138 Patch handle out-of-range in patchload**

**ACTION:** Contact your technical support group.

**PCH0139 Cannot allocate memory for patchload.**

**ACTION:** Contact your technical support group.

**PCH0141 Error reading patch file during patchload.**

**ACTION:** Contact your technical support group.

**PCH0142 Patch Release x does not match the system Release y.**

**ACTION:** Recreate the patch for the system release.

**PCH0143 Cannot determine default patch directory from DLO.**

**ACTION:** Contact your technical support group.

**PCH0144 Patch retention array not initialized.**

**ACTION:** Contact your technical support group.

**PCH0200 Cannot initialize patch semaphore.**

**ACTION:** Contact your technical support group.

**PCH0201 Warning: cannot initialize patch retention. Patch retention will not be possible.**

**ACTION:** Contact your technical support group.

**PCH0202 Warning: patch retention at diskos level failed. Some or all diskos patches may not have been retained.**

**ACTION:** Contact your technical support group.

**PCH0203 Unable to open patch file n.**

**ACTION:** Contact your technical support group.

**PCH0204 Cannot allocate protected memory for patch**

**ACTION:** Contact your technical support group.

**PCH0205 Error in reading patch file n.**

**ACTION:** Contact your technical support group.

**PCH0206 Memory patch from n to m is out-of-range.**

**ACTION:** Remake and retry the patch.

**PCH0207 Memory patch mismatch between expected and actual. Either the patch was created incorrectly or it is the wrong patch for this software release.**

**ACTION:** Contact your technical support group.

**PCH0208 Error accessing patch file n.**

**ACTION:** Contact your technical support group.

**PCH0210 Error registering Patch Midnight routine with tod24Add.**

**ACTION:** Contact your technical support group.

**PCH0211 Address to patch (x) is out of range. Patch corrupt or incorrupt for s/w load.**

**ACTION:** Remake the patch and try again.

**PCH0212 Address of patch code (x) is out-of-range.**

**ACTION:** Take the patch out, then try to load and activate it again.

**PCH0213 Failed to find start of WORKSHED loop near x.**

**ACTION:** Contact your technical support group.

**PCH0214 System error. Patcher cannot be initialized.**

**ACTION:** Contact your technical support group.



**PCH0215 Invalid patch file format.**

**ACTION:** Remake and retry the patch.

**PCH0216 Unexpected code at start of SL-1 global procedure n. The patch might not match the release that is loaded.**

**ACTION:** Contact your technical support group.

**PCH0217 Unexpected code in SL-1 patch global procedure n.**

**ACTION:** Remake and retry the patch.

**PCH0219 Unexpected code in SL-1 global procedure n.**

**ACTION:** Remake and retry the patch.

**PCH0220 NULL filename passed to readInPatch.**

**ACTION:** Contact your technical support group.

**PCH0221 Unexpected code at start of C function n at x. The patch might not match the release that is loaded.**

**ACTION:** Contact your technical support group.

**PCH0222 Checksum of patch read into memory x. Does not match expected checksum x.**

**ACTION:** Contact your technical support group.

**PCH0223 Error reading patch file to compute checksum.**

**ACTION:** Contact your technical support group.

**PCH0224 Error writing checksum to patch file.**

**ACTION:** Contact your technical support group.

**PCH0300 Handle n out-of-range in writeRetenRec.**

**ACTION:** Contact your technical support group.

**PCH0301 Retention structure not initialized. Patcher is most likely unusable.**

**ACTION:** Contact your technical support group.

**PCH0302 Cannot open patch retention file n.**

**ACTION:** Contact your technical support group.

**PCH0303 Error accessing patch retention file n.**

**ACTION:** Contact your technical support group.

**PCH0304 Error writing to patch retention file n.**

**ACTION:** Contact your technical support group.

**PCH0305 Error closing patch retention file n.**

**ACTION:** Contact your technical support group.

**PCH0306 Internal error, patch retention not initialized.**

**ACTION:** Contact your technical support group.

**PCH0307 Cannot get patch retention directory from DLO.**

**ACTION:** Contact your technical support group.

**PCH0308 Error remaining patch retention file from n to m. Patch retention may not be performed properly.**

**ACTION:** Contact your technical support group.

**PCH0309 Error creating patch retention file n.**

**ACTION:** Contact your technical support group.

**PCH0310 Patch retention array reinitialized.**

**ACTION:** Contact your technical support group.

**PCH0311 Patch retention file recreated.**

**ACTION:** Contact your technical support group.

**PCH0312 Cannot allocate protected memory for patch retention.**

**ACTION:** Contact your technical support group.

**PCH0313 Error initializing patch retention file. Make sure the disk is OK. Retention info may be out-of-date.**

**ACTION:** Contact your technical support group.

**PCH0314 Internal error, unknown patch retention level.**

**ACTION:** Contact your technical support group.

**PCH0315 Cannot allocate Diskos memory for patch retention.**

**ACTION:** Contact your technical support group.

**PCH0316 Error reading temporary patch retention file n. Retention may not be performed properly.**

**ACTION:** Contact your technical support group.

**PCH0317 Bad patch retention record, handle = x. Patch retention data and file will be reinitialized. Retention info may be lost.**

**ACTION:** Contact your technical support group.

**PCH0318 Cannot get semaphore for patch retention.**

**ACTION:** Contact your technical support group.

**PCH0319 Error retaining patch from x.**

**ACTION:** Contact your technical support group.

**PCH0320 Cannot retain patch from n. It is already loaded.**

**ACTION:** Contact your technical support group.

**PCH0321 Retention data inconsistency, patch handle = x.**

**ACTION:** Contact your technical support group.

**PCH0322 Cannot activate retained patch, handle = x.**

**ACTION:** Contact your technical support group.

**PCH0323 Error initializing patch retention data. Patcher inoperable.**

**ACTION:** Contact your technical support group.

**PCH0400 Internal error, invalid parameter memSpec.**

**ACTION:** Contact your technical support group.

**PCH0401 Internal error, invalid empty memSpec.**

**ACTION:** Contact your technical support group.

**PCH0402 Internal error, invalid memlist elements.**

**ACTION:** Contact your technical support group.

**PCH0403 Internal error, invalid argument to patch fix hits.**

**ACTION:** Contact your technical support group.

**PCH0404 Cannot get task n priority, errno x.**

**ACTION:** Contact your technical support group.

**PCH0405 Cannot restore task n priority back to y, errno z.**

**ACTION:** Contact your technical support group.

**PCH0406 Internal error, null memSpec.**

**ACTION:** Contact your technical support group.

**PCH0407 Warning: patchMemWrite task list full! (size=x)**

**ACTION:** Contact your technical support group.

**PCH0408 Cannot suspend task x, errno y.**

**ACTION:** Contact your technical support group.

**PCH0409 Could not write memory because it is being accessed by a task.**

**ACTION:** Contact your technical support group.

**PCH0410 Warning: cannot resume task n, errno y.**

**ACTION:** Contact your technical support group.

**PCH0411 Internal error, null memList.**

**ACTION:** Contact your technical support group.

**PCH0412 PatchMemWrite request is out-of-range.**

**ACTION:** Contact your technical support group.

**PCH0500 Cannot get semaphore for patch sanity check.**

**ACTION:** Contact your technical support group.

**PCH0501 Cannot deactivate patch suspected to be bad.**

**ACTION:** Contact your technical support group.

**PCH0502 Deactivating patch suspected to be causing sysload.**

**ACTION:** Contact your technical support group.

**PCH0503 Cannot update patch days-in-service at midnight.**

**ACTION:** Contact your technical support group.

**PCH0504 Deactivating patch suspected to be causing initializations.**

**ACTION:** Contact your technical support group. 

# PMS — Property Management System

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to the Property Management System Interface description. 

# PMS

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## PRI — LD 60 Primary Rate Interface

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ISDN Basic Rate Interface Northern Telecom Publications for details. 

# PRI



## **PWR — Power and System Monitor**

### **Meridian SL-1NT/XT power apparatus . . . 1023**

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| - 48V Regulator — Forty eight volt regulator . . . . . | 1026 |
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| 30V CONV — Thirty volt converter . . . . .             | 1028 |
| 10V CONV — Ten volt converter . . . . .                | 1029 |
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| QPC704 — Power Monitor . . . . .          | 1042 |
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# PWR

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| CE Pwr Sup DC — Common Equipment Power Supply .   | 1050 |
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## **Meridian SL-1NT/XT power apparatus**

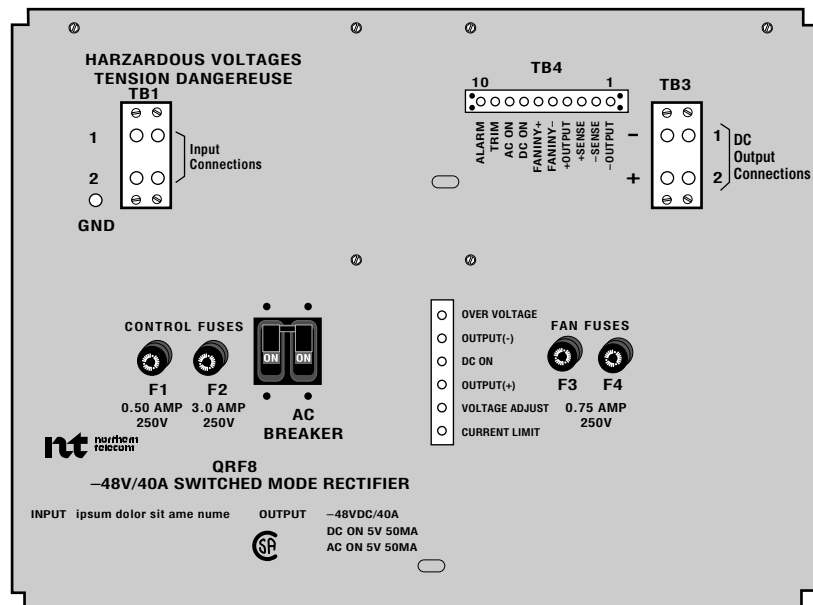
The Meridian SL-1NT/XT power apparatus consists of the following:

- ◆ QRF8 rectifier
- ◆ -48 volt regulator
- ◆ Ringing generator
- ◆ 30 volt converter
- ◆ 10 volt converter
- ◆ 5/12 volt converter
- ◆ Power monitor
- ◆ Power control shelf
- ◆ J2412 Power distribution plant

## QRF8 — Rectifier

### Purpose

The QRF8 Rectifier provides the -48volt supply for the Meridian SL-1LE, MS, N, NT and the QCA96 SL-1N.



553-0200T QRF8(PWR)

### Function

The QRF8 - 48V rectifier is used as a battery eliminator to supply 40 amps to the second stage of power conversion in the system and as a battery charger for a reserve battery supply.

The battery equipment usually consists of a string of 24 individual lead-acid cells, producing approximately 2V dc power cell, connected in a series to provide -48V dc at the output terminals.

Battery equipment is required when system operation is to be maintained during a commercial power failure. The reserve battery is float-charged from the system rectifiers.

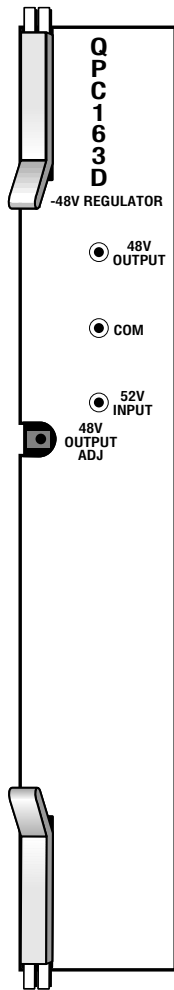
The rectifier maintains delivery of power at -42V dc during momentary fluctuations in commercial input supply voltage of less than 100 ms

**Features**

The QRF8 - 48V rectifier has the following features:

- ◆ 48V dc rectifier
- ◆ strap options for 115, 208 and 230V ac operation

## - 48V Regulator — Forty eight volt regulator



553-0201T -48V(PWR)

### Purpose

The QPC163 - 48V regulator provides 120 Hz filtering of the -48V dc talk battery for trunks and 500 or 2500 type sets.

### Function

One QPC163 - 48V regulator is required for each 15 amps of current drain from PE shelves. The maximum draw from the PE shelf is 3 amps.

### Features

The faceplate includes the following features:

- ◆ a -48 volt output meter test connection
- ◆ a common (ground, earth) meter test connection
- ◆ a -52 volt input meter test connection
- ◆ a factory sealed -48 volt output adjustment potentiometer

## RNG GEN — Ringing Generator



553-0202T QPC187(PV)

### Purpose

The QPC187 Ringing generator converts -48V dc to 86V/105V ac, and provides 20 Hz ringing supply for 500/2500-type telephone sets.

### Function

The ringing generator supplies sufficient power to ring 24 NE-C4 type ringers simultaneously. From vintage “E” onward, the power is doubled to supply 50 NE-C4 ringers.

One ringing generator is required for each PE cabinet serving 500 or 2500 type line circuits.

### Features

The faceplate includes the following features:

- ◆ a 20Hz output meter test connection\*
- ◆ a ground (earth) meter test connection

\*A test voltage is present at this test connection rather than 86V/105V ac

## 30V CONV — Thirty volt converter



### Purpose

The QPC82 30V converter converts -48V dc to  $\pm 15V$  dc supplies for Meridian 1 proprietary telephones.

### Function

Use a QPC82C or later vintage.

One QPC82 converter is required for every 20 BCS line circuit cards in a cabinet, or 192 Meridian 1 proprietary telephones.

The QPC82 card is adjusted at the factory to provide adequate voltage. Field testing is not required unless a complete failure is suspected. If the measured voltage is zero, the card needs to be replaced. Any voltage greater than zero indicates the card is fully operational, and within the approved operating specifications.

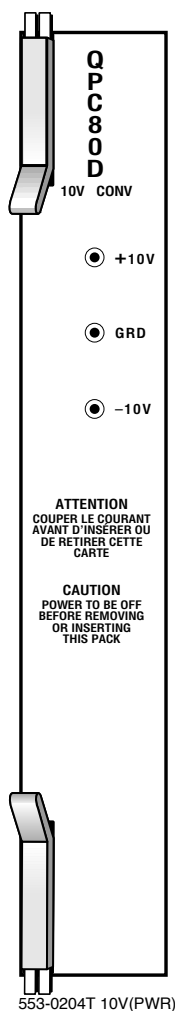
### Features

The faceplate includes the following features:

- ◆ a +15 volt output meter test connection
- ◆ a ground (earth) meter test connection
- ◆ a -15 volt output meter test connection



## 10V CONV — Ten volt converter



### Purpose

The QPC80 10V converter, transforms -48V dc to  $\pm 10V$  dc supply for PE shelf cards.

### Function

Use a QPC80E or later vintage.

One QPC80 is required for every five PE shelves in a cabinet equipped with QPC464 Buffers.

One QPC80 is required for every 14 PE shelves in a cabinet equipped with QPC659 Dual Loop Buffers.

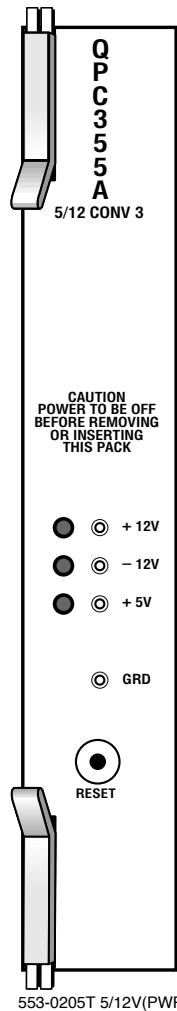
The QPC80 card is adjusted at the factory to provide adequate voltage. Field testing is not required unless a complete failure is suspected. If the measured voltage is zero, the card needs to be replaced. Any voltage greater than zero indicates the card is fully operational, and within the approved operating specifications.

### Features

The faceplate includes the following features:

- ◆ a +10 volt output meter test connection
- ◆ a ground (earth) meter test connection
- ◆ a -10 volt output meter test connection

## 5/12V CONV — Five/twelve volt converter



### Purpose

The QPC355 and QPC190 converts -48V dc to  $\pm 5/12$ V dc, used for power CE and network cards.

### Function

The QPC355 QPC190 converter provides over voltage shutdown and over current protection.

One power card is required for each CPU, memory, and network shelf.

The QPC355 QPC190 converter provides over voltage and over current protection, through using the reset button on the faceplate.

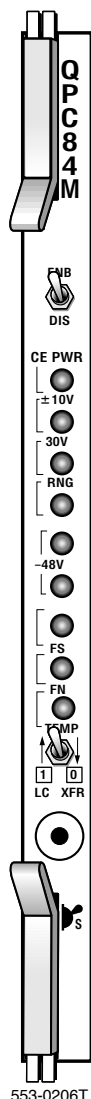
### Features

The faceplate includes the following features:

- ◆ a +12 volt output meter test connection
- ◆ a -12 volt output meter test connection
- ◆ a +5 volt output meter test connection
- ◆ a -5 volt output meter test connection\*
- ◆ a ground (earth) meter test connection
- ◆ an over voltage reset button

\* QPC355 does not provide -5V.

## QPC84 — Power Monitor



553-0206T QPC84(PWR)

### Purpose

The QPC84 monitors the following system voltages:

- ◆ CE power
- ◆  $\pm 10V$  dc
- ◆ 30V dc
- ◆ ringing generator 86V ac - 20 Hz
- ◆ -48V dc in rectifier/PE cabinet
- ◆ fuse status
- ◆ air flow status (FN)

### Function

Use the QPC84P or later version. One QPC84 power monitor is required per cabinet.

The power monitor controls the following:

- ◆ major and minor alarm circuits; major via hardware, minor via CPU and software
- ◆ emergency transfer
- ◆ system reset for Meridian SL-1S, M, MS
- ◆ system shutdown due to high temperature

### Features

The faceplate includes the following features:

- ◆ LED for tolerance indication of voltage levels
- ◆ line transfer and system reset
- ◆ option switches on the component side of the card allow or defeat certain alarm or transfer conditions

## PWR CONT SHELF — Power Control Shelf

### Circuit breakers

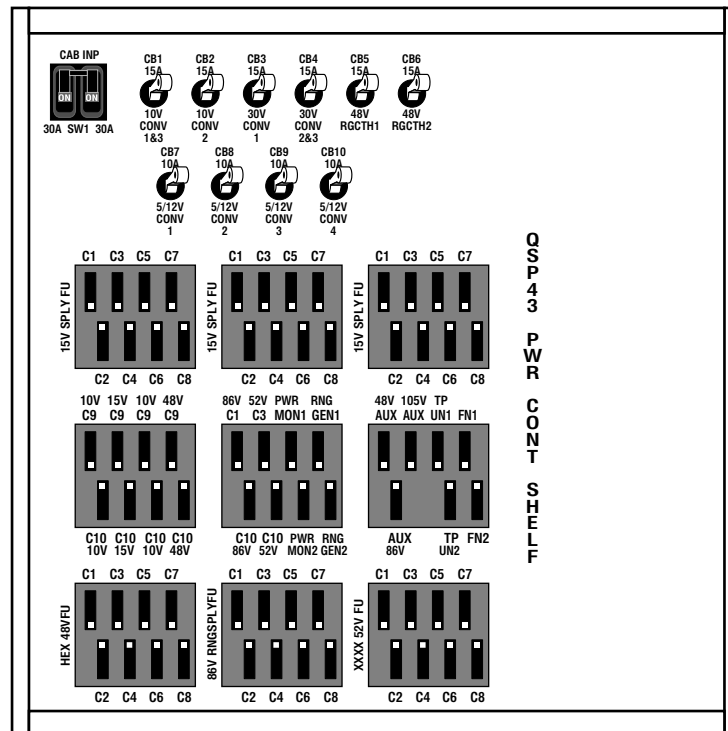
Circuit breakers, located on the rear of the power control shelf, protect the input to the shelf and the cards. The breakers also act as a switch allowing the power to be shut off when changing the power cards.

### Fuses

Fuses, arranged in blocks of eight, protect the output of the power cards. The fuses are identified by a “C” and correspond to the power plug label of each peripheral equipment shelf power plug.

### Power input

Terminal TB2 is the -48V dc and ground input to the power control shelf. Terminals 1 (blue wire) and 2 (red wire) are for the -48V dc, terminals 3 and 4 (black) are for ground.



553-0207T PCS(PWR)

**J10**

Jack 10 extends emergency transfer signals, ground and -48V dc, originating from the power monitor card, to the cross-connect field.

**J9**

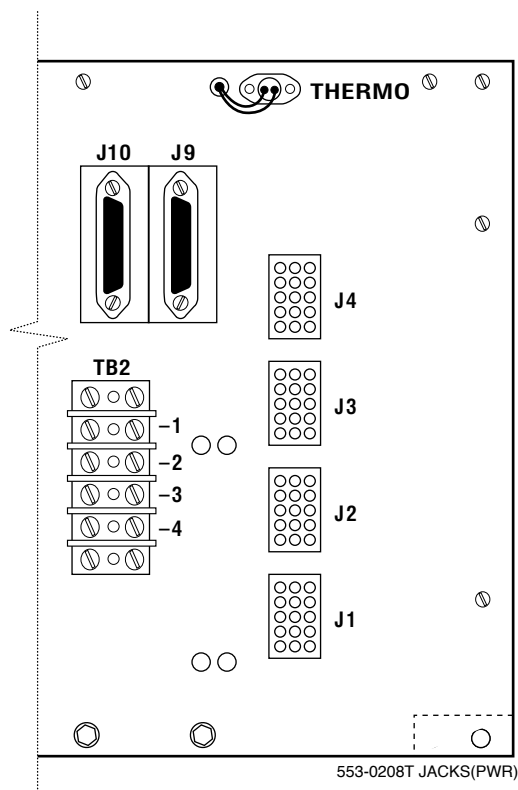
Jack 9 provides the power monitor card with access to the processor through the CE shelf connector C12.

**Thermo**

The thermo is a sensing device which opens and trips the cabinet input circuit breaker when the temperature rises above 68°C.

**J1 J2 J3 J4**

These are Jacks which extend the various converter card outputs to the Peripheral Equipment shelves through the "C" power plugs.



## J2412 (QCA 13) — Power Distribution Plant

The J2412 Power Distribution Plant, commonly known as a QCA13 power cabinet, is actually housed in a QCA13 power cabinet.

### Purpose

The J2412 Power Distribution Plant is used to power larger systems, such as Meridian SL-1 XN, XT and Option 71.

### Function

A plant may consist of up to three power cabinets. Each power cabinet can contain up to four rectifiers and a control panel. A system can have a total of up to 10 rectifiers connected in parallel.

### Features

The J2412A Control Panel houses:

- ◆ a control printed circuit card fuse — CONT
- ◆ rectifier sense leads fuses — RC1 to RC10
- ◆ a volt meter fuse — VM
- ◆ a switch for control card removal and/or replacement — ENB, DIS
- ◆ a control card disable alarm LED — DIS
- ◆ a fuse alarm LED — FA
- ◆ an equalize timer switch for auto charging: 1&2 on for 1.25 hr, 1&3 on and 2 off for 2.5 hr, 1&4 on and 3 off for 5 hr
- ◆ an equalize alarm showing function — EQL
- ◆ an ac failure alarm LED — REC AC
- ◆ a rectifier output failure alarm LED — REC FAIL
- ◆ voltage test jacks — GRD and -48V
- ◆ float adjustment — ADJ LF and HF
- ◆ float and voltage alarms LEDs — LF HF LV HV
- ◆ voltage adjustment — ADJ LV and HV

**-48V Distribution Fuses**

The -48 V dc cabinet power distribution fuses, rated at 30 amps, have 1-1/3A QFF fuses as blown 30 amp fuse indicators.

**J2357 Rectifier****Purpose**

The J2357 Rectifier supplies the -48 V dc power to the QCA13 cabinet.

**Function**

The input transformer can be arranged to accommodate 240 V ac phase to neutral, 240 V ac line-to-line, 208 V phase-to-phase, 120 V ac line-to-neutral, 120 V ac phase-to-neutral, at 50 or 60 Hz.

The line alternating current is applied through a double-poll-single-throw circuit breaker.

Output is -48 V dc, with a range from -44 V to -60 V, at 55 amps. Output rectifier circuit breakers, CB1 to CB4, are rated at 70 amps.

**Features**

The J2412A Control Panel houses:

- ◆ a double-poll-single-throw circuit breaker
- ◆ output rectifier circuit breakers, CB1 to CB4
- ◆ a 1-1/3 amp to protect the control circuitry
- ◆ test jacks to measure output voltage
- ◆ a meter showing discharge current
- ◆ a LED indicating rectifier failure

## Meridian SL-1ST power apparatus

The Meridian SL-1ST operates on -48V dc, which comes from commercial power through a rectifier and draws the following in various configurations:

- ◆ base model — 10 amps at 110 V ac
- ◆ 2-tier model — 9 amps at 220 V ac
- ◆ 3-tier model — 12 amps at 220 V ac

The rectifier and power unit are located in the cabinet base. The power unit supplies the voltages required by the circuit cards located on the CE shelf and the lower PE shelf. The power unit also provides ringing voltage for 500 and 2500 sets in all 3 tiers of the cabinet.

In the second and third tiers, each PE shelf has its own power converter which supplies those PE shelves with all the voltages required by the circuit packs.

The Meridian SL-1ST/STE power apparatus consists of the following:

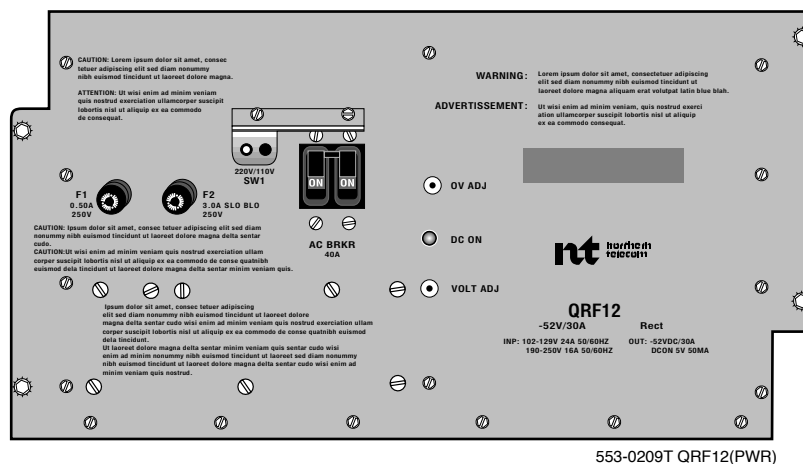
- ◆ QRF12 rectifier
- ◆ QUX19 power distribution unit
- ◆ QUX20 power distribution unit
- ◆ QUAA3 power unit
- ◆ QPC703 power supply
- ◆ QPC704 power monitor
- ◆ 30/150 volt converter
- ◆ QPC706 power converter
- ◆ MFA 150 power system
- ◆ MPP600 Modular power plant



## QRF12 – Rectifier

### Purpose

The QRF 12 Rectifier provides power for the Meridian SL-1 ST, STE, Option 21, 51, 51C, 61, and 61C.



### Function

The QRF12 rectifies 50 or 60 Hz alternating current of 117 V, 208 V or 220 V to unregulated -48V dc. The rectifier has the ability to trickle-charge system batteries, if so equipped.

### Features

The QRF12 Rectifier has the following features:

- ◆ a clamped 220volt/110volt switch
- ◆ a ganged 40 amp input circuit breaker
- ◆ fuse F1 and F2
- ◆ a 0 voltage adjust potentiometer
- ◆ a float voltage adjust potentiometer
- ◆ a DC on LED

## QUX19 — Power Distribution Unit

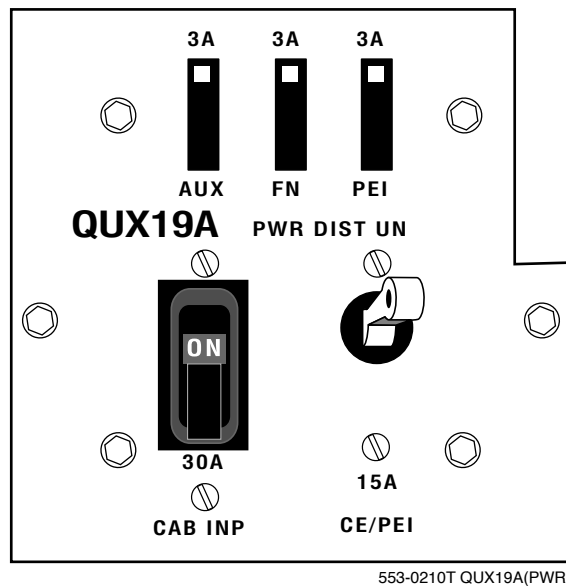
### Purpose

The Power Distribution unit distributes the -48V dc supplied by the rectifier to the CE shelf and the first PE shelf.

### Features

The faceplate includes the following features:

- ◆ main circuit breaker
- ◆ CE/PE circuit breakers
- ◆ fuses for auxiliary equipment
- ◆ fan for third tier only
- ◆ PE shelf fuse



## QUX20 — Power Distribution Unit

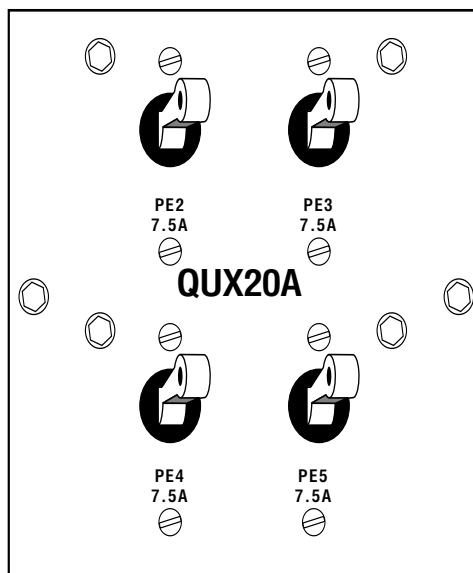
### Purpose

The QUX20 distributes the -48V dc supplied by the rectifier to the PE shelves located in the second and third tiers.

### Features

The faceplate includes the following features:

One circuit breaker for each PE shelf.



553-0211T QUX20A(PWR)

## QUAA3A PWR UN — Power Unit

### Purpose

The QUAA3A power unit supplies -48V dc and ringing voltage for the system.

### Features

The QUAA3A supplies -48V dc via the QUX20 to the power converters in the second and third tier PE shelves.

The QUAA3A power unit regulates the -48V dc used by the CE and first-tier PE.

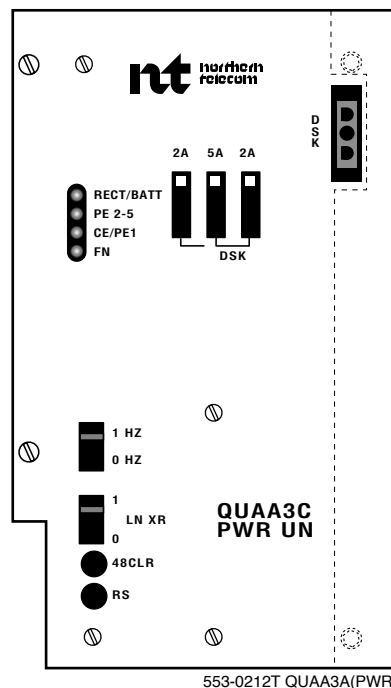
The power unit provides ringing voltage for the system.

The QUAA3A Power Unit, located to the left of the power shelf in the base unit, contains two printed circuit packs:

- ◆ QPC 703 Power Supply which provides voltages used by the CE and first-tier PE
- ◆ QPC 704 Power Monitor

### Features

- ◆ ring generator fuse
- ◆ disk drive fuses
- ◆ power connector for disk drive



## QPC703 — Power Supply

### Purpose

QPC 703 Power Supply which provides voltages used by the CE and first-tier PE

### Function

The QPC703 is a dc to dc converter. It converts -48 volts dc to +5 volts,  $\pm 10$  volts and  $\pm 12$  volts, for r the CE, PE and floppy disk drives.

The QPC703 is located within the QUAA3 Power Unit as a printed circuit card.

### Features

The QPC703 does not show features as it is part of the QUAA3.

## QPC704 — Power Monitor

### Purpose

The QPC704 Power Monitor, is located in the QUAA3 Power Unit and monitors the following:

- ◆ system voltages
- ◆ fusing
- ◆ power faults
- ◆ temperature
- ◆ fan

### Function

The power monitor provides the following:

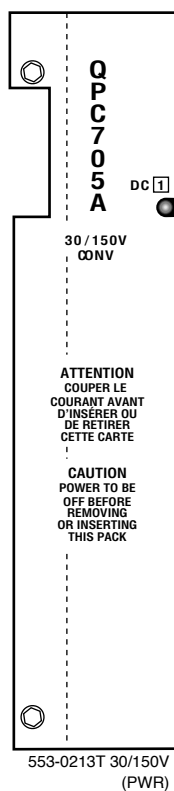
- ◆ PE1 line transfer when any fault which will impede normal call processing is detected
- ◆ line transfer upon request of the processor
- ◆ generate a reset for the common equipment, on power-up
- ◆ regulate -48 V dc used by Peripheral Equipment first-tier (PE1)

### Features

The faceplate includes the following features:

- ◆ rectifier on LED
- ◆ PE shelf 2 to 5 power on LED
- ◆ CE/PE shelf 1 power on LED
- ◆ fan on LED
- ◆ 25/20 ringing voltage selection switch
- ◆ line transfer switch
- ◆ -48 V dc reset button for PE shelf 1
- ◆ reset button

## 30/150V CONV — Converter



The QPC705 30/150V is used only in conjunction with telephones terminated on PE shelf one of the first tier.

### Purpose

Converts -48 V dc to:

- ◆  $\pm 15$  V dc supply for Meridian 1 proprietary telephones
- ◆ -150 V dc supply for message waiting feature of the 2500 type telephones

### Features

The faceplate includes the following features:

A LED when lit, indicates that the converter is functioning.

## QPC706 — PE Power Converter

### Purpose

The QPC706 provides power for the PE cards on the second and third-tier.

### Function

The QPC706 Power converter is supplied -48 V through the QUX20 power distribution and converts that voltage to the following:

- ◆ +6 V dc
- ◆  $\pm 10$  V dc
- ◆  $\pm 15$  V dc
- ◆ -150 V dc
- ◆ -48 V dc regulated

The QPC706 provides a line transfer signal to the power monitor if the +6 V,  $\pm 10$  V, or the -48 V fails, and provides a fault indication to the power monitor if a power fault is present on the PE shelf.

### Features

The faceplate includes the following features:

A LED when lit, indicates that the converter is functioning.



## **Option 51/61/71/81 power apparatus**

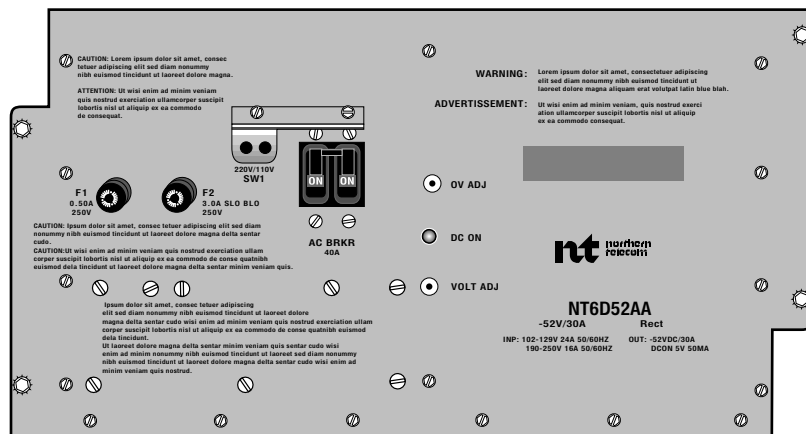
The Option 51/51C/61/61C/71/81/81C power apparatus consists of the following:

- ◆ NT6D52 switched mode rectifier
- ◆ NT5C03 switched mode rectifier
- ◆ CPE power supply, AC or DC version
- ◆ CE power supply, AC or DC version
- ◆ PE power supply, AC or DC version
- ◆ Ringing generator, AC or DC version
- ◆ NT8D22 system monitor
- ◆ MFA 150 power system
- ◆ MPP 600 modular power plant
- ◆ System 600/48 DC power system

## NT6D52AA — Switched Mode Rectifier

### Purpose

The NT6D52AA switched mode rectifier -48V/30A is used with the direct current version of Options 21 and 61.



553-0214T NT6D52AA(PWR)

### Function

The NT6D52AA rectifies 50 or 60 Hz alternating current of 117 V, 208 V or 220 V to unregulated -48V dc. The rectifier has the ability to trickle-charge system batteries, if so equipped.

### Features

The NT6D52AA Rectifier has the following features:

- ◆ a clamped 220volt/110volt switch
- ◆ a ganged 40 amp input circuit breaker
- ◆ fuse F1 and F2
- ◆ a 0 voltage adjust potentiometer
- ◆ a float voltage adjust potentiometer
- ◆ a DC on LED

## NT5C03BJ — Switched Mode Rectifier

The NT5C03BJ Switched mode rectifier -48V/50A is used with Option 71 and 81 D.C. version.

### Purpose

The NT5C03BJ Switched mode rectifier supplies the -48 V dc power to the QCA13 cabinet for Option 71 and 81.

### Function

The input transformer can be arranged to accommodate 240 V ac phase to neutral, 240 V ac line-to-line, 208 V phase-to-phase, 120 V ac line-to-neutral, 120 V ac phase-to-neutral, at 50 or 60 Hz.

The line alternating current is applied through a double-poll-single-throw circuit breaker.

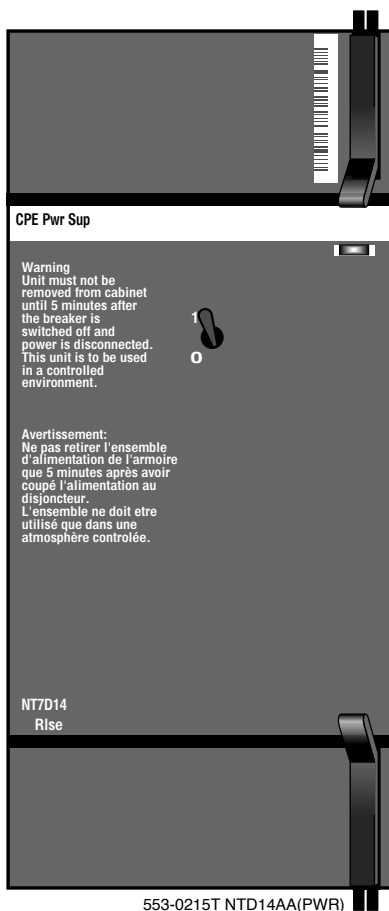
Output is -48 V dc, with a range from -44 V to -60 V, at 55 amps. Output rectifier circuit breakers, CB1 to CB4, are rated at 70 amps.

### Features

The NT5C03BJ Control Panel houses:

- ◆ a double-poll-single-throw circuit breaker
- ◆ output rectifier circuit breakers, CB1 to CB4
- ◆ a 1-1/3 amp to protect the control circuitry
- ◆ test jacks to measure output voltage
- ◆ a meter showing discharge current
- ◆ a LED indicating rectifier failure

## CPE Pwr Sup AC — Power Supply



553-0215T NTD14AA(PWR)

### Purpose

The NT7D14AA CE/PE Power supply AC is used with Option 21.

### Function

The Common, and Peripheral Equipment Power Supply ac rectifies 208 or 240 V ac to +5 V, +8.5 V, +15 V, +12 V, -48 V, and -150 V dc voltages used to power peripheral and common equipment, supply talk battery, and light Message Waiting Lamps on 500 or 2500 telephones. It provides 10 sources of selectable ac ringing voltage outputs superimposed on -48 V dc. The frequency and voltage options are 20 or 25 or 50 Hz and 70 or 75 or 80 or 86 V ac. It is located to the left of the module, in the slot labeled “CE/PE Pwr Sup”.

One (CE/PE) Power Supply ac is used in each of the following ac modules:

- ◆ Common Peripheral Equipment Module — NT8D11AC
- ◆ Remote Peripheral Equipment Module — NT8D47AA

### Features

The faceplate includes the following features:

- ◆ a LED when lit, indicates that the converter is functioning
- ◆ a circuit breaker

## CPE Pwr Sup DC — Power Supply

### Purpose

The NT6D43AA CE/PE Power supply DC is used with Option 21.

### Function

The (CE/PE) Power Supply dc converts -48 V dc to +5 V, +8.5 V, +15 V, +12 V, -48 V, and -150 V dc voltages used to power peripheral and common equipment, supply talk battery, and light Message Waiting Lamps on 500 or 2500 telephones. It provides 10 sources of selectable ac ringing voltage outputs superimposed on -48 V dc. The frequency and voltage options are 20 or 25 or 50 Hz and 70 or 75 or 80 or 86 V ac. It is located to the left of the module, in the slot labeled "CE/PE Pwr Sup".

One (CE/PE) Power Supply dc is used in each of the following dc modules:

- ◆ Common, Peripheral Equipment Module — NT8D11DC
- ◆ Remote Peripheral Equipment Module — NT8D47DC

### Features

The faceplate includes the following features:

- ◆ a LED when lit, indicates that the converter is functioning
- ◆ an on/off toggle switch

## CE Pwr Sup DC — Common Equipment Power Supply



### Purpose

The NT6D41AA Common Equipment power supply DC is used with System Options 61 and 71.

### Function

The Common Equipment Power Supply dc is used in the common equipment modules in dc systems. It is located in the first slot on the left in the module labeled “CE Pwr Sup”. It converts -48 V dc to + 5 V dc and + 12 V dc to provide all the required voltages for CE and network circuit cards.

One Common Equipment Power Supply dc is used in each of the following dc modules:

- ◆CPU Module — NT8D34DC
- ◆Network Module — NT8D35DC
- ◆CPU/Network Module — NT6D39DC

Two Common Equipment Power Supply dc cards are used in the NT6D44DC Meridian Mail Module.

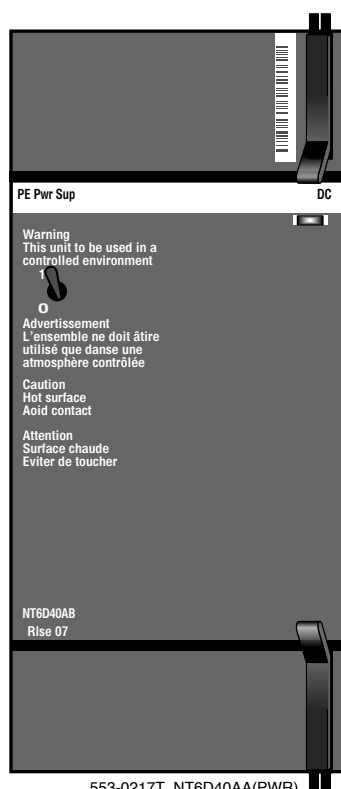
### Features

The faceplate includes the following features:

- ◆a LED when lit, indicates that the converter is functioning
- ◆an on/off toggle switch\*

\* use the vintage AD and later as vintage AB toggle switch did not always restore power unless the switch was turned off and on several times.

## PE Pwr Sup DC — Peripheral Equipment Power Supply



553-0217T NT6D40AA(PWR)

### Purpose

The NT6D40AA Peripheral Equipment power supply DC is used with all systems.

### Function

The Peripheral Equipment Power Supply dc is used to provide power to all peripheral equipment modules in dc systems. It converts -48 V dc to + 5 V dc, + 8.5 V dc, + 10 V dc, + 15 V dc and -48V dc voltages used to power peripheral equipment logic cards and to supply talk battery to lines and trunks. This power supply is located in the far left hand card slot labeled “PE Pwr Sup”.

One Peripheral Equipment Power Supply dc is used in each of the following dc modules:

- ◆ Intelligent Peripheral Equipment Module — NT8D37DC
- ◆ Peripheral Equipment Module — NT8D13DC

### Features

The faceplate includes the following features:

- ◆ a LED when lit, indicates that the converter is functioning
- ◆ an on/off toggle switch\*

\* use the vintage AD and later as vintage AB toggle switch did not always restore power unless the switch was turned off and on several times

## PE Pwr Sup AC — Peripheral Equipment Power Supply

### Purpose

The NT8D06AA Peripheral Equipment power supply AC is used with all systems.

### Function

The Peripheral Equipment Power Supply ac is used to provide power to all peripheral equipment modules in ac systems. It converts 208 and 240 V ac to + 5 V dc, + 8.5 V dc, + 10 V dc, + 15 V dc and -48V dc voltages used to power peripheral equipment logic cards and to supply talk battery to lines and trunks. This power supply is located in the far left-hard card slot labeled “PE Pwr Sup”.

One Peripheral Equipment Power Supply ac is used in each of the following ac modules:

- ◆ Intelligent Peripheral Equipment Module — NT8D37AA
- ◆ Peripheral Equipment Module — NT8D13AA

### Features

The faceplate includes the following features:

- ◆ a LED when lit, indicates that the converter is functioning
- ◆ a circuit breaker



## Rng Gen DC — Ringing Generator



### Purpose

The NT6D42C Ringing Generator DC is used with all systems.

### Function

The Ringing Generator dc operates from a nominal -48 V dc input and provides 16 sources\* of selectable ac ringing voltage outputs superimposed on -48 V dc. The frequency and voltage options are 20 or 25 or 50 Hz and 70 or 75 or 80 or 86 V ac. It also supplies -120 or 150 V dc Message Waiting lamp 500 and 2500 telephone applications. The Ringing Generator dc mounts in the PE modules to the right of the Peripheral Equipment Power Supply dc.

One Ringing Generator dc is used in each of the following, when these dc modules support 500 and 2500-type analog sets:

- ◆ Intelligent Peripheral Equipment Module — NT8D37DC
- ◆ Peripheral Equipment Module — NT8D13DC

### Features

The faceplate includes the following features:

- ◆ a LED when lit, indicates that the converter is functioning
- ◆ an on/off toggle switch

## Rng Gen AC — Ringing Generator

### Purpose

The NT8D21AA Ringing Generator AC is used with all systems.

### Function

The Ringing Generator ac, operates from a nominal 208 or 240 V ac input and provides 16 sources\* of selectable ac ringing voltage outputs, which are superimposed on -48 V dc. The frequency and voltage options are 20 or 25 or 50 Hz and 70 or 80 or 86 V ac. It supplies -150 V dc to Message Waiting Lamp 500 and 2500 telephone applications. The Ringing Generator AC is located in the PE modules to the right of the Peripheral Equipment Power Supply.

One Ringing Generator AC is used in each of the following, when these AC Modules support 500 or 2500 type analog telephones:

- ◆ Intelligent Peripheral Equipment Module — NT8D37AA
- ◆ Peripheral Equipment Module — NT8D13AA

*Note:* \* Release 15 software provides eight sources.

### Features

The faceplate includes the following features:

- ◆ a LED when lit, indicates that the converter is functioning
- ◆ a circuit breaker

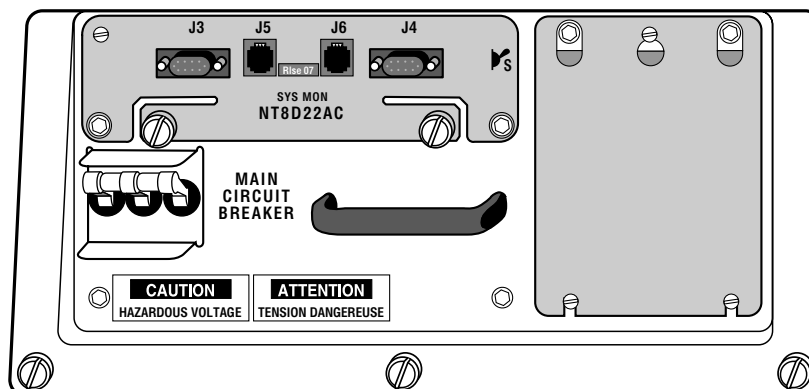
## NT8D22 SYS MON — System Monitor

The NT8D22AB System Monitor is used on all systems.

One System Monitor (SM) is mounted in the Power Distribution Unit, which is located at the rear of the pedestal of each UEM column.

The SM reports the status of power related hardware for its column on all active input/output data terminals or TTYs.

One master and up to 63 slave System Monitors are allowed per system.



553-0219T NT8D22AB(PWR)

## **NT8D22AB System Monitor** (continued)

The SM located in the column containing the CPU is the master SM, and the SMs located in the other columns are slaves.

### **Purpose**

The master SM will poll the slave SMs and will report the status of power related hardware to the CPU on the following:

- ◆ column thermal status
- ◆ power supplies
- ◆ fan operation
- ◆ power fail transfer
- ◆ Uninterrupted Power Supply (UPS) for AC Option 21 only
- ◆ circuit breakers and LEDs

A ribbon cable coming from the master SM backplane connector is plugged into a RS232C port on a Serial Data Interface (SDI) card. The SDI card passes the SM status report on to the CPU which results in the CPU sending a Power and System Monitor (PWR) message to the maintenance terminals.

### **Features**

The SM contains DIP switches allowing a SM to be programmed for:

- ◆ master SM or slave SM
- ◆ use in hybrid systems (UEM and SL-1 cabinets) or non-hybrid systems (all UEM)
- ◆ the number of slave units installed
- ◆ master SM identity (0) and slave identity (1-63)

### **Faceplate**

The Faceplate contains the following jacks:

- ◆ J3, which extends an alarm cable to the MDF, providing emergency transfer signals to the cross-connect field
- ◆ J5, which extends the daisy chain connection from J6 of the previous SM (not connected on the Master SM)
- ◆ J6, which extends the daisy chain connection to J5 of the next SM
- ◆ J4, which extends to the UPS or DC distribution box

## MFA 150 power system

### Purpose

The NT5C90 Modular Front Access (MFA 150) power system is a 4 ft. x 23 in. rack mounted -48VDC power plant, with a capacity of up to 150 Amps.

### Function

The MFA 150 system uses up to six switched mode Modular Power Rectifiers (MPR 25), each providing up to a 25 Amp output. MPRs can be added without a power system shutdown.

Input voltages range from 176 to 264 VAC, at 47 to 63 Hz.

The power system can operate with or without batteries. It can use external batteries or can be equipped with two optional rack-mounted battery trays.

The MFA 150 system will interface to the master system monitor to provide, at the maintenance terminal, low voltage, fuse, breaker, and rectifier failure alarms.

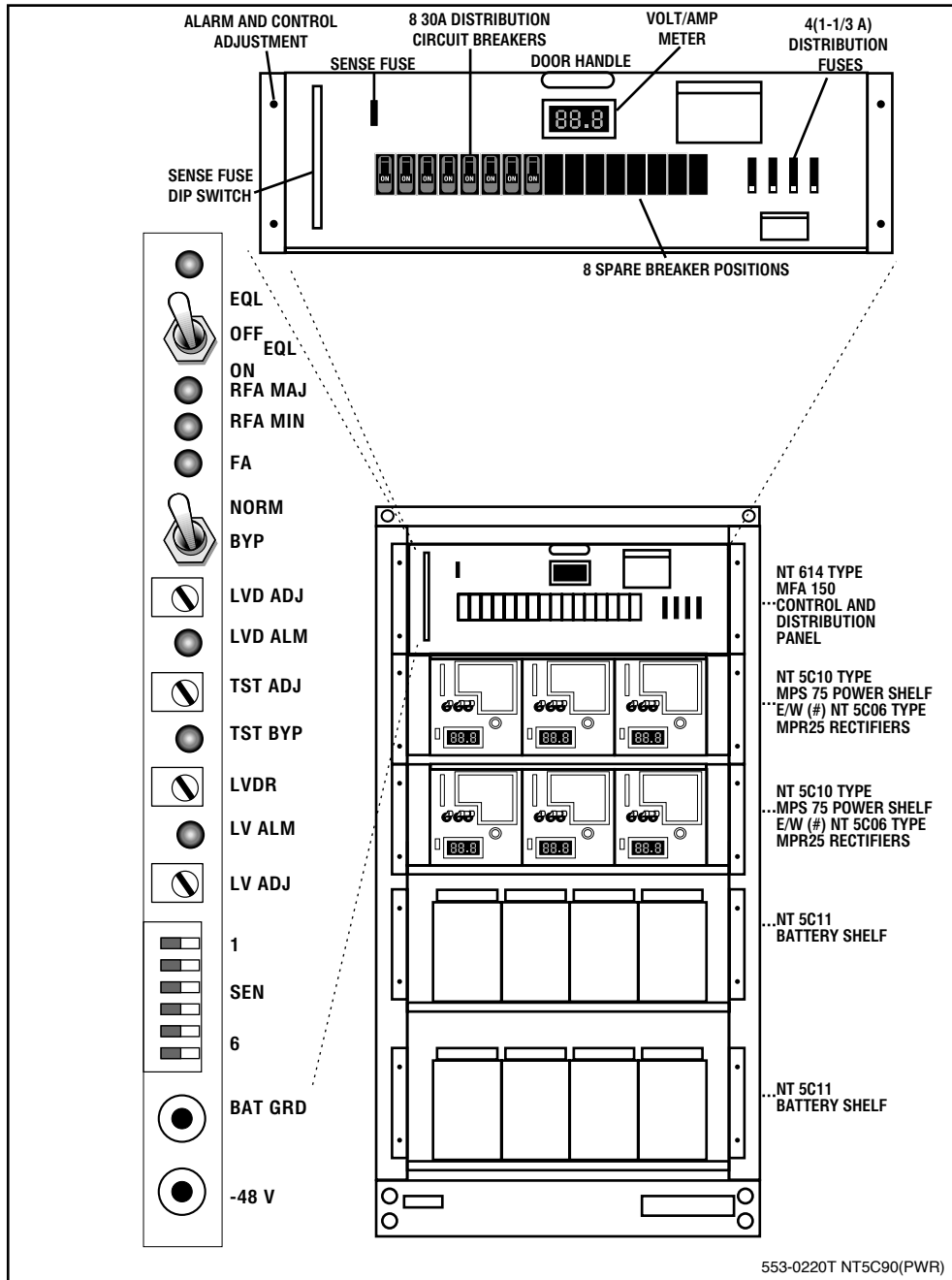
A Low Voltage Disconnect relay contactor removes the DC from the load circuit breakers before the batteries become exhausted.

*Refer to graphic on next page.*

# PWR

## 1058 Power and System Monitor

of 1474



## Features

The NT6C14 Control and Distribution Panel has the following features:

- ◆ positive, negative, and battery bus bars, which are accessible from the top
  - up to sixteen 30 Amp load circuit breakers
  - sense fuse
  - volt/amp meter
  - four -48V auxiliary output fuses — QFF fuses from .25 A to 5 A
  - alarm indicators and adjustment strip, top to bottom, as follows:
    - equalize LED, indicating that the equalize switch is on
- ◆ equalize switch, which raises the voltage by 7 VDC\* to equalize the charge on all battery cells
- ◆ rectifier failure alarm major where a LED indicates two or more MPR failures\*\*
- ◆ rectifier failure alarm minor where a LED indicates a single MPR failure\*\*
- ◆ fuse alarm LED which indicates a tripped circuit breaker or a blown fuse\*\*
- ◆ normal/bypass switch, which bypasses the low voltage disconnect contactor allowing adjustment of low voltage limits
- ◆ low voltage disconnect adjustment potentiometer, which sets the contactor disconnect voltage at -43.5 VDC\*
- ◆ low voltage disconnect alarm LED, which indicates when DC is removed from the load circuit breakers\*\*
- ◆ test adjustment potentiometer, which allows the DC voltage to be raised and lowered to test the threshold settings
- ◆ test bypass alarm LED, which lights when the test switch is in the test mode

- ◆ low voltage disconnect reset adjustment potentiometer, which sets contactor reset, returning DC voltage to the circuit breakers at -50 to -50.5 VDC\*
- ◆ low voltage alarm LED, which lights when the voltage is below limit
- ◆ low voltage adjustment potentiometer, which sets the low voltage limit to -43 VDC\*
- ◆ sense DIP switches which allow the load to be disconnected individually from the six MPR rectifiers to facilitate their adjustment
- ◆ voltage test points

\* Factory settings

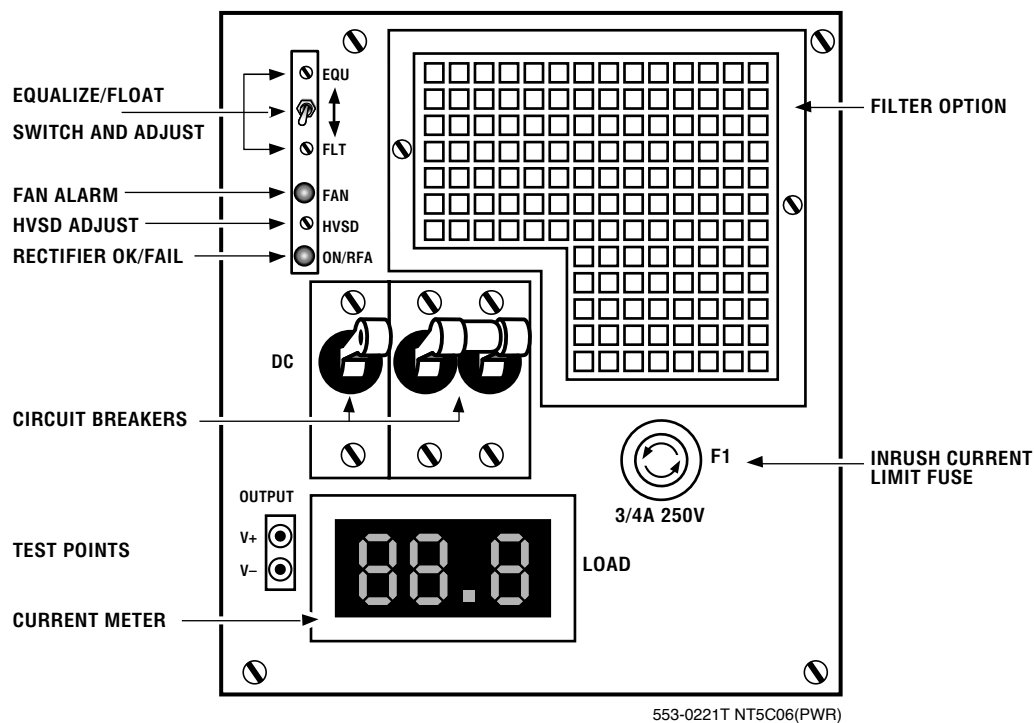
\*\* Transmits a failure alarm to maintenance TTY



## MPR25 Modular Power Rectifier

The NT5C06 contains the following:

- ◆ alarm indicators and adjustment strip, top to bottom, as follows:
  - equalize adjustment potentiometer, which sets voltage .7 VDC\* higher than the float voltage
  - equalize switch, which allows adjustment of the float voltage
  - float adjustment potentiometer, which sets the float voltage at -54 VDC\*
  - fan alarm LED, which lights when air flow through the MPR25 stops\*\*
  - high voltage shut down adjustment potentiometer, which sets the high voltage shut down level at -56.5 VDC\*, due to an MPR25 internal fault\*\*



- ◆ on/rectifier failure alarm LED. When the LED is green the MPR25 is operating normally. When the LED is red the MPR25 has failed.\*\*
  - DC circuit breaker that controls DC output from MPR25\*\*
  - AC circuit breaker that controls input AC to MPR25\*\*
  - voltage test points, with protection from short circuit at test points
  - three digit output current meter, that shows the load on the MPR25
  - in rush current limit fuse, that protects the input circuitry against an MPR25 internal short circuit\*\*

\* Factory settings

\*\* Transmits a failure alarm to maintenance TTY

## **MPP 600 Power Plant**

### **Purpose**

The MPP 600 Power Plant is a -48V dc power plant, with a capacity of up to 600 amps.

### **Function**

The MMP 600 is a modular power distribution and control system. The system uses up to 12 NT5C07 MPR50 plug-in rectifiers to provide 600 amps in 50 amp increments.

One system can consist of one or two cabinets, with each cabinet providing up to 300 amps.

The system contains a NT6C14PF Control Board and a NT6C14PG Meter Control Board.

### **MPR50 Modular Power Rectifier**

Each MPR50 switched mode plug-in rectifier requires one 20 amp feed of single-phase 50/60 Hz., from 208V to 240V ac input.

## System 600/48 DC power

### Purpose

The System 600/48 DC is a front access power plant that provides -48V dc power plant, with a capacity of up to 600 amps. The System 600/48 would be typically power large systems such as the Option 61C or 81C.

### Function

The power system consists of up to two cabinets, a Main cabinet and a Supplemental cabinet, with each cabinet supplying up to 300 amps.

The System 600/48 allows the replacement of MPR50 rectifiers, Control Board and the addition of the Supplemental cabinet while under power.

The System 600/48 can provide a Major Alarm trigger to the XSM for the following events:

- ◆ High voltage shut down (HVSD)
- ◆ High voltage (HV)
- ◆ Battery on discharge (BOD)
- ◆ Low voltage (LV)
- ◆ Low voltage disconnect (LVD)
- ◆ Alarm bus supply (ABSF)
- ◆ Internal fuse alarm (INT FA)
- ◆ Multiple rectifier fail alarm (RFA)

## How the PWR works

The system monitor has built in diagnostics that can output PWR messages indicating power and temperature status or failures.

### PWR Message format

The output format for all PWR messages is:

**PWRxxxx hw sm uem u**

where,

**hw** = hardware type, possible values are:

**CRBK** = Circuit Breaker

**DCSP** = DC power supply

**FANU** = Fan Unit

**PFTC** = Power Fail Transfer Card

**PWSP** = Power Supply including the ringing generator

**THSW** = Thermal Switch

**UPSA** = Uninterruptible Power Supply Alarm

**XSMC** = System Monitor Card

*Note:* Only DCSP failures can cause an entire IPE module not to function or the ringing generator on an indicated module not to function.

**sm** = System Monitor (0-63), 0 = the master System Monitor

**uem** = Universal Equipment Module, possible values are:

**0** = bottom UEM or not applicable

**1** = second UEM

**2** = third UEM

**3** = top UEM

**u** = power unit number, possible values are:

**0** = not applicable

**1** = power unit 1

**2** = power unit 2

### PWR Message example

**PWR0018 DCSP 4 1 2**

## PWR messages

### **PWR0000 hw sm uem u**

System monitor or power supply is OK.

**ACTION:** Information only, no action required.

### **PWR0001 hw sm uem u**

There is a partial failure on the power supply.

**ACTION:** Replace the indicated power supply, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

### **PWR0002 hw sm uem u**

There is a complete failure on the power supply.

**ACTION:** Replace the indicated power supply, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

### **PWR0003 hw sm uem u**

The power supply is not installed or has been removed.

**ACTION:** Install the power supply if applicable or replace the indicated power supply, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

### **PWR0004 hw sm uem u**

A circuit breaker has tripped and the system has overheated.

**ACTION:** Investigate the cause of tripped circuit breaker. Replace the component that caused the circuit breaker to trip, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

### **PWR0005 hw sm uem u**

One or more fans has failed in the blower unit.

**Note:** This message occurs when the NT7D17AC or NT7D17DC fan shelf in the Option 21 systems is turned on. This is not an error condition if PWR0005 is followed by PWR0046 (sensor alarm cleared) and PWR0045 (fan functioning).

**ACTION:** Replace the blower unit, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0006**

Blower air probe temperature sensor alarm. This indicates one of the following:

1. Blower air probe temperature sensor has reached 55 degrees C (131 degrees F).

**ACTION:** Check for a clogged air filter. If a dirty air filter is not damaged, you can clean it with warm water and mild detergent. Do not use compressed air as it may damage the filter. When the filter is completely dry, you can reinsert it in the pedestal. Investigate whether you need to clean the filters more often than the recommended frequency of once a month.

Check the ambient air temperature and if the room is uncomfortably hot, then ventilate or air condition the room. If the ventilation or the air conditioner is faulty, repair or replace them.

2. Blower unit has lost power.

**ACTION:** Replace the blower unit by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

3. Blower unit air probe temperature sensor is faulty or disconnected.

**ACTION:** Replace or reconnect the temperature sensor by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0007**

Column temperature has reached 70 degrees C (158 degrees F). If the blower has reached 55 degrees C (PWR0006 message), then the circuit breaker will trip in 30 seconds.

**ACTION:** Pay closer attention to the actions of PWR0006, but hurry.

**PWR0010 hw**

For PWR010 UPSA: Uninterruptible Power Supply (UPS) alarm condition.

The meaning depends on the UPS manufacturer.

1. Alpha UPS, Best Inc. UPS and Lorain UPS — inverter is ON.

**ACTION:** Information only, no action required.

**2. Exide UPS — AC power failed.**

**ACTION:** Information only and no action required, unless you want to ask your commercial power supplier when they will restore the AC power.

**3. For PWR010 DCSP: DC trip alarm is ON; circuit breaker has tripped.**

**ACTION:** Investigate the cause of tripped circuit breaker. Replace the component that caused the circuit breaker to trip, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0012 hw**

For PWR012 UPSA: Uninterruptible Power Supply (UPS) Summary alarm (condition 2).

**1. The meaning depends on the UPS manufacturer.**

Best Inc. UPS — Summary alarm is ON.

**ACTION:** Follow Best Inc. fault clearing manual's instructions.

Loraine UPS — bypass is ON.

**ACTION:** Follow Loraine fault clearing manual's instructions.

Exide UPS — bypass is ON.

**ACTION:** Follow Exide fault clearing manual's instructions.

Alpha UPS — low battery.

**ACTION:** Follow Alpha fault clearing manual's instructions.

**2. For PWR012 DCSP: DC alarm is ON.**

**ACTION:** Check the DC power supply indicated. Investigate the cause of tripped circuit breaker. Replace the component that caused the circuit breaker to trip, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0013 hw sm uem u**

Slave System Monitor is not responding.

**ACTION:** Check the serial link cable or replace the System Monitor, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.



**PWR0014 hw sm uem u**

System Monitor failed self-test.

**ACTION:** Replace the System Monitor, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0015**

SL-1 NT, RT, ST or XT cabinet has a power problem.

**ACTION:** For the RT and ST, check the rectifier and power unit at the bottom of the cabinet for any green LEDs not lit, fuses blown, or circuit breakers tripped and investigate the cause. Replace the component that caused the power problem, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**ACTION:** For the NT, check the power monitor card for a red LED lit, fuses blown, or circuit breakers tripped and investigate the cause. Replace the component that caused the power problem, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**ACTION:** For the XT, check the Control Panel in the QCA 13 cabinet for a red LED lit, fuses blown, or circuit breakers tripped and investigate the cause. Replace the component that caused the power problem, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0016 hw**

Power fail transfer has been activated.

**ACTION:** Information only and no action required, however you should look for a message indicating what caused this message.

**PWR0017 hw sm uem u**

DCON 0 alarm is ON.

**ACTION:** Investigate the cause of tripped circuit breaker. Replace the component that caused the circuit breaker to trip, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0018 hw sm uem u**

DCON 1 alarm is ON.

**ACTION:** Investigate the cause of tripped circuit breaker. Replace the component that caused the circuit breaker to trip, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0019 hw sm uem u**

DCON 2 alarm is ON.

**ACTION:** Investigate the cause of tripped circuit breaker. Replace the component that caused the circuit breaker to trip, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0020 hw sm uem u**

DCON 3 alarm is ON.

**ACTION:** Investigate the cause of tripped circuit breaker. Replace the component that caused the circuit breaker to trip, by following the steps in the *Hardware replacement* guide and verify that the fault is cleared.

**PWR0044 hw sm uem u**

Circuit breaker had been reset.

**ACTION:** Information only, no action required.

**PWR0045**

Fan unit repaired.

**ACTION:** Information only, no action required.

**PWR0046**

Blower unit air probe temperature sensor is now less than 55 degrees C (131 degrees F).

**ACTION:** Information only, no action required. If you were not involved with lowering the temperature, you should investigate why the temperature is falling.

**PWR0047**

Column temperature now less than 70 degrees C (158 degrees F).  
Circuit breaker trip signal is released.

**ACTION:** Information only, no action required. If you were not involved with lowering the temperature, you should investigate why the temperature is falling.

**PWR0050 hw**

For PWR050 UPSA: Uninterruptible Power Supply (UPS) alarm condition 1 has been cleared. For PWR050 DCSP: DC trip alarm is OFF (circuit breaker has been reset).

**ACTION:** Information only, no action required.

**PWR0052 hw**

For PWR052 UPSA: Uninterruptible Power Supply (UPS) alarm condition 2 has been cleared.

**ACTION:** Information only, no action required.

**PWR0053 hw sm uem u**

Slave System Monitor is now responding.

**ACTION:** Information only, no action required.

**PWR0054**

System Monitor passed self test.

**ACTION:** Information only, no action required.

**PWR0055**

SL-1 NT, RT, ST or XT cabinet alarm condition has been cleared.

**ACTION:** Information only, no action required.

**PWR0056 hw sm uem u**

Power fail transfer deactivated.

**ACTION:** Information only, no action required.

**PWR0057 hw sm uem u**

DCON 0 alarm has been cleared.

**ACTION:** Information only, no action required.

**PWR0058 hw sm uem u**

DCON 1 alarm has been cleared.

**ACTION:** Information only, no action required.

**PWR0059 hw sm uem u**

DCON 2 alarm has been cleared.

**ACTION:** Information only, no action required.

**PWR0060 hw sm uem u**

DCON 3 alarm has been cleared.

**ACTION:** Information only, no action required. 

# PWR

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## RCV — Recovery Messages

Recovery Messages is a resident program. RCV does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### How RCV works

An auto-recovery mechanism will prevent an initialize caused by a broken queue software error.

If the software error can be resolved, an RCV message is printed on the maintenance TTY.

If the software error cannot be resolved, an INI fault code 000C is printed on the maintenance TTY.

If multiple RCV messages are received, an INI fault code 000C is printed identifying the software errors. However, the initialize is delayed until after the midnight routines to prevent call processing interruptions.

Before X11 Release 19.30, the INI fault code 000C also identified errors different from those identified in RCV messages. With Release 19.30 and later, the INI fault code 001D identifies errors that the auto-recovery mechanism cannot prevent.

## RCV messages

### RCV0000

An invalid queue block type was found. The auto-recovery mechanism has taken appropriate action to avert INI000 000C.

**ACTION:** Contact your technical support group if you receive multiple RCV messages within a 24-hour period.

### RCV0001

Invalid queue information was found. The auto-recovery mechanism has taken appropriate action to avert INI000 000C.

**ACTION:** Contact your technical support group if you receive multiple RCV messages within a 24-hour period.

### RCV0002

A broken queue problem was detected. The auto-recovery mechanism has taken appropriate action to avert INI000 000C.

**ACTION:** Contact your technical support group if you receive multiple RCV messages within a 24-hour period.

### RCV0003

Invalid information was found in the queue header block. The auto-recovery mechanism has taken appropriate action to avert INI000 000C.

**ACTION:** Contact your technical support group if you receive multiple RCV messages within a 24-hour period. 

## RPD — LD 33 1.5Mb/s RPE Diagnostic

This is a North American feature only.

For messages and descriptions refer to the administration input/output guide.

Refer to Remote Peripheral Equipment, Northern Telecom Publications for details. 





## RPE — LD 53 2.0 Mb/s Remote

This feature is not applicable to North America.

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to Remote Peripheral Equipment Northern Telecom Publications for details. 

# RPE

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## RPL — LD 62 1.5 Remote Peripheral

This is a North American feature only.

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to Remote Peripheral Equipment, Northern Telecom Publications for details. 

# RPL

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## RPM — LD 53 2.0 Mb/s Remote Perip

This feature is not applicable to North America.

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to Remote Peripheral Equipment Northern Telecom Publications for details. 

# RPM

**1082** LD 53 2.0 Mb/s Remote Peripheral Equipment Design

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## RPT — System Reporting

System Reporting is a resident program. RPT does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### RPT messages

#### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

#### **RPT001 Begin suppression of <filename>.**

**ACTION:** Information only. No action required.

#### **RPT002 End suppression of <file name>.**

**ACTION:** Information only. No action required.

#### **RPT003 Unknown report (not in database). category x, report y.**

See categories listed below:

3 = TTY

4 = COID

5 = SCSI

6 = DBMT

7 = DLO

8 = OSM

9 = SRPT

# RPT

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10 = BUG

11 = BERR

12 = CNL

13 = HWI

14 = BIC

15 = CCED

16 = CMON

17 = PCH

18 = IOD

19 = OVL

**ACTION:** Check the database and re-enter the command.

**RPT004 x reports missing in log just before x.**

**ACTION:** Check the command. If the problem persists, contact your technical support group. 



# SCSI — Small Computer System

## How the SCSI works

Small Computer System Interface is a resident program. SCSI does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

Small Computer System Interface (SCSI) messages appear when problems are encountered relating to the SCSI low level software.

## SCSI messages

**SCSI001 Unable to initialize Interrupts for SCSI.**

**ACTION:** Contact your technical support group.

**SCSI002 Unable to initialize floppy drive x.**

**ACTION:** Contact your technical support group.

**SCSI003 Unable to initialize SCSI controller on IOP.**

**ACTION:** Be sure IOP is in place and enabled.

**SCSI004 File system initialization failed for floppy x.**

**ACTION:** Contact your technical support group.

**SCSI006 Floppy Disk INIT: Block device INIT failed for CMDU x.**

**ACTION:** Contact your technical support group.

**SCSI008 Floppy Disk: Unknown floppy controller in CMDU x not supported.**

**ACTION:** Contact your technical support group.

**SCSI009 Hard disk in CMDU x is not responding.**

**ACTION:** Check the CMDU power, and the hard disk cables.

**SCSI010 Hard Disk Test: Partition x in CMDU y is not initialized.**

**ACTION:** Reinstall the software from the installation disks.

**SCSI011 Read Test: Read failed near sector w, errNo x, sense y, addSense z.**

The following lists explain the errNo, sense and addSense messages:

ErrNo

|          |   |                                       |
|----------|---|---------------------------------------|
| 0x370001 | = | Device Not Ready                      |
| 0x370002 | = | Write Protected                       |
| 0x370003 | = | Medium Error                          |
| 0x370004 | = | Hardware Error                        |
| 0x370005 | = | Illegal Request                       |
| 0x370006 | = | Blank Check                           |
| 0x370007 | = | Aborted Command                       |
| 0x370008 | = | Volume Overflow                       |
| 0x370009 | = | Unit Attention                        |
| 0x37000a | = | Select Timeout                        |
| 0x37000b | = | Logical Unit Number (LUN) Not Present |
| 0x37000c | = | Illegal Bus ID                        |
| 0x37000d | = | No Controller                         |
| 0x37000e | = | REQ Sense Error                       |
| 0x37000f | = | Device Unsupported                    |
| 0x370010 | = | Illegal Parameter                     |
| 0x370011 | = | Semaphore Timeout                     |

Sense

|      |   |                                                                                                  |
|------|---|--------------------------------------------------------------------------------------------------|
| 0x00 | = | No error. Nothing specific to report                                                             |
| 0x01 | = | The command was completed successfully with some recovery performed by the drive.                |
| 0x02 | = | Not ready.                                                                                       |
| 0x03 | = | Nonrecoverable error fault from the medium or an error in the recorded data.                     |
| 0x04 | = | Nonrecoverable hardware failure.                                                                 |
| 0x05 | = | There was an illegal parameter in the command.                                                   |
| 0x06 | = | Some drive parameters have been changed, the drive has been reset, or a power_on_reset occurred. |
| 0x07 | = | A write operation was attempted on a write protected device.                                     |

0x09 = Vendor unique.  
0x0B = The drive aborted the command.  
0x0E = Source data did not match data read from the medium.

**addSense**

0x00 = No additional information  
0x01 = No index signal  
0x02 = Seek timeout  
0x03 = Write fault  
0x04 = Drive not ready  
0x05 = Drive not selected  
0x06 = Recalibrate failure  
0x07 = Multiple drives selected  
0x09 = Tracking error  
0x10 = ID CRC or ECC error occurred  
0x11 = Read error.Dat ECC  
0x12 = No address mark found in ID field  
0x13 = No address mark found in Data field  
0x14 = No record found  
0x15 = Seek error  
0x16 = Data synchronization mark error  
0x17 = Data read with retries  
0x18 = Data read with ECC correction  
0x19 = Bad defect list  
0x1A = Parameter overrun  
0x1C = No primary defect list found  
0x20 = Invalid command  
0x21 = Invalid logical block address  
0x22 = Illegal function for device type  
0x24 = Illegal field in command  
0x25 = Invalid Logical Unit Number (LUN)  
0x26 = Illegal field in parameter list  
0x27 = Write protected  
0x29 = Power-on reset, or SCSI bus reset occurred  
0x2A = Drive parameters were changed  
0x31 = Format failed  
0x32 = No more spare sectors available for reallocating defective  
sectors  
0x40 = Buffer RAM failure, or parity error  
0x41 = ECC failure  
0x42 = Power-on diagnostic

0x43 = Message rejected  
0x44 = Internal controller or firmware error  
0x45 = Select/Reselect timeout  
0x47 = Parity error on the SCSI bus  
0x48 = Initiator detected error  
0x49 = Illegal message  
0x9D = Motor never gets up to speed  
0x9E = Motor drops out of legal speed range  
0xA2 = External RAM failure  
0xA3 = Reassign Blocks Read failure  
0xA5 = Defect list is out-of-order  
0xAE = Bad parameters in mode page  
0xAF = Buffer corrupted  
0xB0 = Drive recalibrating  
0xB1 = Drive not up to speed

**ACTION:** Contact your technical support group.

**SCSI012 Floppy drive in CMDU x is not responding.**

**ACTION:** Check the CMDU power, and the IOP to IOP cables.

**SCSI013 Floppy Disk Test: Floppy disk is not initialized.**

**ACTION:** Contact your technical support group.

**SCSI014 CMDU x is not active, using CMDU y.**

**ACTION:** Check the CMDU power, and the IOP to IOP cables.

**SCSI015 Hard Disk Init: Both hard disks are disabled.**

**ACTION:** Check the CMDU power, and the IOP to IOP cables.

**SCSI016 File system initialization failed for x.**

**ACTION:** Reinstall the software from the installation disks.

**SCSI017 Error writing to floppy disk, sector w, errNo x, sense y, addSense z.**

The following lists explain the errNo, sense and addSense messages:

## ErrNo

|          |   |                                       |
|----------|---|---------------------------------------|
| 0x370001 | = | Device Not Ready                      |
| 0x370002 | = | Write Protected                       |
| 0x370003 | = | Medium Error                          |
| 0x370004 | = | Hardware Error                        |
| 0x370005 | = | Illegal Request                       |
| 0x370006 | = | Blank Check                           |
| 0x370007 | = | Aborted Command                       |
| 0x370008 | = | Volume Overflow                       |
| 0x370009 | = | Unit Attention                        |
| 0x37000a | = | Select Timeout                        |
| 0x37000b | = | Logical Unit Number (LUN) Not Present |
| 0x37000c | = | Illegal Bus ID                        |
| 0x37000d | = | No Controller                         |
| 0x37000e | = | REQ Sense Error                       |
| 0x37000f | = | Device Unsupported                    |
| 0x370010 | = | Illegal Parameter                     |
| 0x370011 | = | Semaphore Timeout                     |

## Sense

|      |   |                                                                                                  |
|------|---|--------------------------------------------------------------------------------------------------|
| 0x00 | = | No error. Nothing specific to report                                                             |
| 0x01 | = | The command was completed successfully with some recovery performed by the drive.                |
| 0x02 | = | Not ready.                                                                                       |
| 0x03 | = | Nonrecoverable error fault from the medium or an error in the recorded data.                     |
| 0x04 | = | Nonrecoverable hardware failure.                                                                 |
| 0x05 | = | There was an illegal parameter in the command.                                                   |
| 0x06 | = | Some drive parameters have been changed, the drive has been reset, or a power_on_reset occurred. |
| 0x07 | = | A write operation was attempted on a write protected device.                                     |
| 0x09 | = | Vendor unique.                                                                                   |
| 0x0B | = | The drive aborted the command.                                                                   |
| 0x0E | = | Source data did not match data read from the medium.                                             |

## addSense

|      |   |                           |
|------|---|---------------------------|
| 0x00 | = | No additional information |
| 0x01 | = | No index signal           |
| 0x02 | = | Seek timeout              |
| 0x03 | = | Write fault               |
| 0x04 | = | Drive not ready           |
| 0x05 | = | Drive not selected        |

# SCSI

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|      |   |                                                                    |
|------|---|--------------------------------------------------------------------|
| 0x06 | = | Recalibrate failure                                                |
| 0x07 | = | Multiple drives selected                                           |
| 0x09 | = | Tracking error                                                     |
| 0x10 | = | ID CRC or ECC error occurred                                       |
| 0x11 | = | Read error.Dat ECC                                                 |
| 0x12 | = | No address mark found in ID field                                  |
| 0x13 | = | No address mark found in Data field                                |
| 0x14 | = | No record found                                                    |
| 0x15 | = | Seek error                                                         |
| 0x16 | = | Data synchronization mark error                                    |
| 0x17 | = | Data read with retries                                             |
| 0x18 | = | Data read with ECC correction                                      |
| 0x19 | = | Bad defect list                                                    |
| 0x1A | = | Parameter overrun                                                  |
| 0x1C | = | No primary defect list found                                       |
| 0x20 | = | Invalid command                                                    |
| 0x21 | = | Invalid logical block address                                      |
| 0x22 | = | Illegal function for device type                                   |
| 0x24 | = | Illegal field in command                                           |
| 0x25 | = | Invalid Logical Unit Number (LUN)                                  |
| 0x26 | = | Illegal field in parameter list                                    |
|      |   |                                                                    |
| 0x27 | = | Write protected                                                    |
| 0x29 | = | Power-on reset, or SCSI bus reset occurred                         |
| 0x2A | = | Drive parameters were changed                                      |
| 0x31 | = | Format failed                                                      |
| 0x32 | = | No more spare sectors available for reallocating defective sectors |
| 0x40 | = | Buffer RAM failure, or parity error                                |
| 0x41 | = | ECC failure                                                        |
| 0x42 | = | Power-on diagnostic                                                |
| 0x43 | = | Message rejected                                                   |
| 0x44 | = | Internal controller or firmware error                              |
| 0x45 | = | Select/Reselect timeout                                            |
| 0x47 | = | Parity error on the SCSI bus                                       |
| 0x48 | = | Initiator detected error                                           |
| 0x49 | = | Illegal message                                                    |
| 0x9D | = | Motor never gets up to speed                                       |
| 0x9E | = | Motor drops out of legal speed range                               |
| 0xA2 | = | External RAM failure                                               |
| 0xA3 | = | Reassign Blocks Read failure                                       |

0xA5 = Defect list is out of order  
 0xAE = Bad parameters in mode page  
 0xAF = Buffer corrupted  
 0xB0 = Drive recalibrating  
 0xB1 = Drive not up to speed

**ACTION:** Contact your technical support group.

**SCSI018 Error reading from floppy disk, sector w,errNo x, sense y, addSense z.**

The following lists explain the errNo, sense and addSense messages:

**ErrNo**

0x370001 = Device Not Ready  
 0x370002 = Write Protected  
 0x370003 = Medium Error  
 0x370004 = Hardware Error  
 0x370005 = Illegal Request  
 0x370006 = Blank Check  
 0x370007 = Aborted Command  
 0x370008 = Volume Overflow  
 0x370009 = Unit Attention  
 0x37000a = Select Timeout  
 0x37000b = Logical Unit Number (LUN) Not Present  
 0x37000c = Illegal Bus ID  
 0x37000d = No Controller  
 0x37000e = REQ Sense Error  
 0x37000f = Device Unsupported  
 0x370010 = Illegal Parameter  
 0x370011 = Semaphore Timeout

**Sense**

0x00 = No error. Nothing specific to report  
 0x01 = The command was completed successfully with some recovery performed by the drive.  
 0x02 = Not ready.  
 0x03 = Nonrecoverable error fault from the medium or an error in the recorded data.  
 0x04 = Nonrecoverable hardware failure.  
 0x05 = There was an illegal parameter in the command.  
 0x06 = Some drive parameters have been changed, the drive has been reset, or a power\_on\_reset occurred.  
 0x07 = A write operation was attempted on a write protected device.

0x09 = Vendor unique.  
0x0B = The drive aborted the command.  
0x0E = Source data did not match data read from the medium.

## addSense

0x00 = No additional information  
0x01 = No index signal  
0x02 = Seek timeout  
0x03 = Write fault  
0x04 = Drive not ready  
0x05 = Drive not selected  
0x06 = Recalibrate failure  
0x07 = Multiple drives selected  
0x09 = Tracking error  
0x10 = ID CRC or ECC error occurred  
0x11 = Read error.Dat ECC  
0x12 = No address mark found in ID field  
0x13 = No address mark found in Data field  
0x14 = No record found  
0x15 = Seek error  
0x16 = Data synchronization mark error  
0x17 = Data read with retries  
0x18 = Data read with ECC correction  
0x19 = Bad defect list  
0x1A = Parameter overrun  
0x1C = No primary defect list found  
0x20 = Invalid command  
0x21 = Invalid logical block address  
0x22 = Illegal function for device type  
0x24 = Illegal field in command  
0x25 = Invalid Logical Unit Number (LUN)  
0x26 = Illegal field in parameter list  
0x27 = Write protected  
0x29 = Power-on reset, or SCSI bus reset occurred  
0x2A = Drive parameters were changed  
0x31 = Format failed

**ACTION:** Contact your technical support group.



**SCSI020 No response from hard disk in both CMDUs, or hard disks were incorrectly initialized.**

**ACTION:** Be sure the CMDU power is on, and the cables are in place. Reinstall the software from the installation disks if necessary.

**SCSI021 Active shelf x has no active CMDU.**

**ACTION:** Be sure that there is a CMDU card on the active core shelf.

**SCSI022 Controller self test failed.**

**ACTION:** Contact your technical support group.

**SCSI023 No active CMDU present.**

**ACTION:** Be sure that the CMDU is enabled, the power is on, and the cables are in place.

**SCSI024 Error reading from active hard disk.**

**ACTION:** Contact your technical support group.

**SCSI025 Error reading from standby hard disk.**

**ACTION:** Contact your technical support group.

**SCSI026 Error writing to active hard disk, sector w, errNo x, sense y, addSense z.**

The following lists explain the errNo, sense and addSense messages.

**ErrNo**

|          |   |                                       |
|----------|---|---------------------------------------|
| 0x370001 | = | Device Not Ready                      |
| 0x370002 | = | Write Protected                       |
| 0x370003 | = | Medium Error                          |
| 0x370004 | = | Hardware Error                        |
| 0x370005 | = | Illegal Request                       |
| 0x370006 | = | Blank Check                           |
| 0x370007 | = | Aborted Command                       |
| 0x370008 | = | Volume Overflow                       |
| 0x370009 | = | Unit Attention                        |
| 0x37000a | = | Select Timeout                        |
| 0x37000b | = | Logical Unit Number (LUN) Not Present |
| 0x37000c | = | Illegal Bus ID                        |
| 0x37000d | = | No Controller                         |
| 0x37000e | = | REQ Sense Error                       |
| 0x37000f | = | Device Unsupported                    |
| 0x370010 | = | Illegal Parameter                     |
| 0x370011 | = | Semaphore Timeout                     |

**Sense**

- 0x00 = No error. Nothing specific to report
- 0x01 = The command was completed successfully with some recovery performed by the drive.
- 0x02 = Not ready.
- 0x03 = Nonrecoverable error fault from the medium or an error in the recorded data.
- 0x04 = Nonrecoverable hardware failure.
- 0x05 = There was an illegal parameter in the command.
- 0x06 = Some drive parameters have been changed, the drive has been reset, or a power\_on\_reset occurred.
- 0x07 = A write operation was attempted on a write protected device.
- 0x09 = Vendor unique.
- 0x0B = The drive aborted the command.
- 0x0E = Source data did not match data read from the medium.

**addSense**

- 0x00 = No additional information
- 0x01 = No index signal
- 0x02 = Seek timeout
- 0x03 = Write fault
- 0x04 = Drive not ready
- 0x05 = Drive not selected
- 0x06 = Recalibrate failure
- 0x07 = Multiple drives selected
- 0x09 = Tracking error
- 0x10 = ID CRC or ECC error occurred
- 0x11 = Read error. Dat ECC
- 0x12 = No address mark found in ID field
- 0x13 = No address mark found in Data field
- 0x14 = No record found
- 0x15 = Seek error
- 0x16 = Data synchronization mark error
- 0x17 = Data read with retries
- 0x18 = Data read with ECC correction
- 0x19 = Bad defect list
- 0x1A = Parameter overrun
- 0x1C = No primary defect list found
- 0x20 = Invalid command
- 0x21 = Invalid logical block address
- 0x22 = Illegal function for device type

0x24 = Illegal field in command  
0x25 = Invalid Logical Unit Number (LUN)  
0x26 = Illegal field in parameter list  
0x27 = Write protected  
0x29 = Power-on reset, or SCSI bus reset occurred  
0x2A = Drive parameters were changed  
0x31 = Format failed

0x32 = No more spare sectors available for reallocating defective sectors  
0x40 = Buffer RAM failure, or parity error  
0x41 = ECC failure  
0x42 = Power-on diagnostic  
0x43 = Message rejected  
0x44 = Internal controller or firmware error  
0x45 = Select/Reselect timeout  
0x47 = Parity error on the SCSI bus  
0x48 = Initiator detected error  
0x49 = Illegal message  
0x9D = Motor never gets up to speed  
0x9E = Motor drops out of legal speed range  
0xA2 = External RAM failure  
0xA3 = Reassign Blocks Read failure  
0xA5 = Defect list is out of order  
0xAE = Bad parameters in mode page  
0xAF = Buffer corrupted  
0xB0 = Drive recalibrating  
0xB1 = Drive not up to speed

**ACTION:** Contact your technical support group.

**SCSI027 Error writing to standby hard disk, sector w, errNo x, sense y, addSense z.**

The following lists explain the errNo, sense and addSense messages:

**ErrNo**

|          |   |                                       |
|----------|---|---------------------------------------|
| 0x370001 | = | Device Not Ready                      |
| 0x370002 | = | Write Protected                       |
| 0x370003 | = | Medium Error                          |
| 0x370004 | = | Hardware Error                        |
| 0x370005 | = | Illegal Request                       |
| 0x370006 | = | Blank Check                           |
| 0x370007 | = | Aborted Command                       |
| 0x370008 | = | Volume Overflow                       |
| 0x370009 | = | Unit Attention                        |
| 0x37000a | = | Select Timeout                        |
| 0x37000b | = | Logical Unit Number (LUN) Not Present |
| 0x37000c | = | Illegal Bus ID                        |
| 0x37000d | = | No Controller                         |
| 0x37000e | = | REQ Sense Error                       |
| 0x37000f | = | Device Unsupported                    |
| 0x370010 | = | Illegal Parameter                     |
| 0x370011 | = | Semaphore Timeout                     |

**Sense**

|      |   |                                                                                                  |
|------|---|--------------------------------------------------------------------------------------------------|
| 0x00 | = | No error. Nothing specific to report                                                             |
| 0x01 | = | The command was completed successfully with some recovery performed by the drive.                |
| 0x02 | = | Not ready.                                                                                       |
| 0x03 | = | Nonrecoverable error fault from the medium or an error in the recorded data.                     |
| 0x04 | = | Nonrecoverable hardware failure.                                                                 |
| 0x05 | = | There was an illegal parameter in the command.                                                   |
| 0x06 | = | Some drive parameters have been changed, the drive has been reset, or a power_on_reset occurred. |
| 0x07 | = | A write operation was attempted on a write protected device.                                     |
| 0x09 | = | Vendor unique.                                                                                   |
| 0x0B | = | The drive aborted the command.                                                                   |
| 0x0E | = | Source data did not match data read from the medium.                                             |

**addSense**

|      |   |                           |
|------|---|---------------------------|
| 0x00 | = | No additional information |
| 0x01 | = | No index signal           |
| 0x02 | = | Seek timeout              |
| 0x03 | = | Write fault               |

|      |   |                                                                    |
|------|---|--------------------------------------------------------------------|
| 0x04 | = | Drive not ready                                                    |
| 0x05 | = | Drive not selected                                                 |
| 0x06 | = | Recalibrate failure                                                |
| 0x07 | = | Multiple drives selected                                           |
| 0x09 | = | Tracking error                                                     |
| 0x10 | = | ID CRC or ECC error occurred                                       |
| 0x11 | = | Read error. Dat ECC                                                |
| 0x12 | = | No address mark found in ID field                                  |
| 0x13 | = | No address mark found in Data field                                |
| 0x14 | = | No record found                                                    |
| 0x15 | = | Seek error                                                         |
| 0x16 | = | Data synchronization mark error                                    |
| 0x17 | = | Data read with retries                                             |
| 0x18 | = | Data read with ECC correction                                      |
| 0x19 | = | Bad defect list                                                    |
| 0x1A | = | Parameter overrun                                                  |
| 0x1C | = | No primary defect list found                                       |
| 0x20 | = | Invalid command                                                    |
| 0x21 | = | Invalid logical block address                                      |
| 0x22 | = | Illegal function for device type                                   |
| 0x24 | = | Illegal field in command                                           |
| 0x25 | = | Invalid Logical Unit Number (LUN)                                  |
|      |   |                                                                    |
| 0x26 | = | Illegal field in parameter list                                    |
| 0x27 | = | Write protected                                                    |
| 0x29 | = | Power-on reset, or SCSI bus reset occurred                         |
| 0x2A | = | Drive parameters were changed                                      |
| 0x31 | = | Format failed                                                      |
| 0x32 | = | No more spare sectors available for reallocating defective sectors |
| 0x40 | = | Buffer RAM failure, or parity error                                |
| 0x41 | = | ECC failure                                                        |
| 0x42 | = | Power-on diagnostic                                                |
| 0x43 | = | Message rejected                                                   |
| 0x44 | = | Internal controller or firmware error                              |
| 0x45 | = | Select/Reselect timeout                                            |
| 0x47 | = | Parity error on the SCSI bus                                       |
| 0x48 | = | Initiator detected error                                           |
| 0x49 | = | Illegal message                                                    |
| 0x9D | = | Motor never gets up to speed                                       |
| 0x9E | = | Motor drops out of legal speed range                               |

0xA2 = External RAM failure  
0xA3 = Reassign Blocks Read failure  
0xA5 = Defect list is out of order  
0xAE = Bad parameters in mode page  
0xAF = Buffer corrupted  
0xB0 = Drive recalibrating  
0xB1 = Drive not up to speed

**ACTION:** Contact your technical support group.

**SCSI028 Error reading from active hard disk, sector w, errNo x, sense y, addSense z.**

The following lists explain the errNo, sense and addSense messages:

**ErrNo**

0x370001 = Device Not Ready  
0x370002 = Write Protected  
0x370003 = Medium Error  
0x370004 = Hardware Error  
0x370005 = Illegal Request  
0x370006 = Blank Check  
0x370007 = Aborted Command  
0x370008 = Volume Overflow  
0x370009 = Unit Attention  
0x37000a = Select Timeout  
0x37000b = Logical Unit Number (LUN) Not Present  
0x37000c = Illegal Bus ID  
0x37000d = No Controller  
0x37000e = REQ Sense Error  
  
0x37000f = Device Unsupported  
0x370010 = Illegal Parameter  
0x370011 = Semaphore Timeout

**Sense**

0x00 = No error. Nothing specific to report  
0x01 = The command was completed successfully with some recovery performed by the drive.  
0x02 = Not ready.  
0x03 = Nonrecoverable error fault from the medium or an error in the recorded data.  
0x04 = Nonrecoverable hardware failure.  
0x05 = There was an illegal parameter in the command.

- 0x06 = Some drive parameters have been changed, the drive has been reset, or a power\_on\_reset occurred.
- 0x07 = A write operation was attempted on a write protected device.
- 0x09 = Vendor unique.
- 0x0B = The drive aborted the command.
- 0x0E = Source data did not match data read from the medium.

#### addSense

- 0x00 = No additional information
- 0x01 = No index signal
- 0x02 = Seek timeout
- 0x03 = Write fault
- 0x04 = Drive not ready
- 0x05 = Drive not selected
- 0x06 = Recalibrate failure
- 0x07 = Multiple drives selected
- 0x09 = Tracking error
- 0x10 = ID CRC or ECC error occurred
- 0x11 = Read error.Dat ECC
- 0x12 = No address mark found in ID field
- 0x13 = No address mark found in Data field
- 0x14 = No record found
- 0x15 = Seek error
- 0x16 = Data synchronization mark error
- 0x17 = Data read with retries
- 0x18 = Data read with ECC correction
- 0x19 = Bad defect list
- 0x1A = Parameter overrun
- 0x1C = No primary defect list found
- 0x20 = Invalid command
- 0x21 = Invalid logical block address
- 0x22 = Illegal function for device type
- 0x24 = Illegal field in command
- 0x25 = Invalid Logical Unit Number (LUN)
- 0x26 = Illegal field in parameter list
  
- 0x27 = Write protected
- 0x29 = Power-on reset, or SCSI bus reset occurred
- 0x2A = Drive parameters were changed
- 0x31 = Format failed

0x32 = No more spare sectors available for reallocating defective sectors  
0x40 = Buffer RAM failure, or parity error  
0x41 = ECC failure  
0x42 = Power-on diagnostic  
0x43 = Message rejected  
0x44 = Internal controller or firmware error  
0x45 = Select/Reselect timeout  
0x47 = Parity error on the SCSI bus  
0x48 = Initiator detected error  
0x49 = Illegal message  
0x9D = Motor never gets up to speed  
0x9E = Motor drops out of legal speed range  
0xA2 = External RAM failure  
0xA3 = Reassign Blocks Read failure  
0xA5 = Defect list is out of order  
0xAE = Bad parameters in mode page  
0xAF = Buffer corrupted  
0xB0 = Drive recalibrating  
0xB1 = Drive not up to speed

**ACTION:** Contact your technical support group.

**SCSI029 Error reading from standby hard disk, sector x.**

**ACTION:** Contact your technical support group.

**SCSI030 Hard disk synchronization error. CMDU x is not the active disk.**

**ACTION:** Contact your technical support group.

**SCSI031 Synchronization failed because one or both hard disks are disabled.**

**ACTION:** Check the standby CMDU power and cables.

**SCSI032 Synchronization failed because one or both hard disks are not initialized.**

**ACTION:** Contact your technical support group.

**SCSI033 Raw file system INIT failed for floppy drive x.**

**ACTION:** Contact your technical support group.

**SCSI034 Active drive partition bigger than standby.**

**ACTION:** Contact your technical support group.



**SCSI036 Comparison failed between Active and Standby hard disks for x.**

**ACTION:** Contact your technical support group.

**SCSI037 Synchronization called with invalid CMDU number x.**

**ACTION:** Contact your technical support group.

**SCSI038 Synchronization failed for x.**

**ACTION:** Contact your technical support group.

**SCSI039 No standby CMDU present. Be sure standby CMDU power is on, and cables are in place.**

**ACTION:** Contact your technical support group.

**SCSI040 Timeout before writing active hard disk sector x.**

**ACTION:** Contact your technical support group.

**SCSI041 Timeout before writing standby hard disk sector x.**

**ACTION:** Contact your technical support group.

**SCSI042 Timeout before reading active hard disk sector x.**

**ACTION:** Contact your technical support group.

**SCSI043 Timeout before reading standby hard disk sector x.**

**ACTION:** Contact your technical support group.

**SCSI044 Watchdog timeout while accessing disk**

**ACTION:** Contact your technical support group.

**SCSI100 CMDU Y, Error Reading from Hard Disk, sector X, errNo Z, sense W, addSense V.**

**ACTION:** Contact your technical support group.

**SCSI101 CMDU Y, Error Writing to Hard Disk, sector X, errNo Z, sense W, addSense V.**

**ACTION:** Contact your technical support group.

**SCSI102 CMDU X, Timeout before Reading from Hard Disk sector Y.**

**ACTION:** Contact your technical support group.

**SCSI103 CMDU X, Timeout before Writing to Hard Disk sector Y.**

**ACTION:** Contact your technical support group.

**SCSI104 CMDU X, Filename F Date D Time T Size S.**

**ACTION:** Contact your technical support group.

**SCSI105 Files that are different in Dir: X.**

**ACTION:** Contact your technical support group.

**SCSI106 Files that are different in Partition: P.**

**ACTION:** Contact your technical support group.

**SCSI107 This message is printed when list items exceed the allowable parameters.**

**ACTION:** Contact your technical support group.

**SCSI108 Partition X: Sector number %d does not match.**

**ACTION:** Contact your technical support group.

**SCSI109 CMDU x in Active Side is not latest, using CMDU y.**

**ACTION:** Contact your technical support group.

**SCSI110 Partition parameters of the Active and Standby drives are different.**

**ACTION:** Contact your technical support group.

**SCSI111 Cannot decide latest CMDU, going with CMDU X.**

**ACTION:** Contact your technical support group.

**SCSI112 Partition X: reporting Y sectors to sync. This is greater than partition size Z, o will Sync complete partition.**

**ACTION:** Reinstall the software from the installation diskettes if required. 

## SDL — Peripheral Software Download

Peripheral Software Download is a resident program. SDL does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

The Peripheral Software Download (PSDL) feature stores Peripheral Software (PSW) on disk for:

- ◆ Network Cards (NT8D04) card
- ◆ Network/DTR (NT8D16)
- ◆ Controllers cards (NT8D01)

The PSW is downloaded to the peripheral cards when:

- ◆ system initialization occurs
- ◆ the card is enabled via ENLL and ENXP commands in LD 30 and LD 32
- ◆ the card undergoes power up reset

Control of the initialization downloaded is defined in LD 97.

### SDL messages

#### SDL000 text

Peripheral Software Download has occurred. The output format is

**SDL000** device, **VERSION** x, mode

device:

**XNET** loop = NT8D08 Network card loop number

**XNPD** loop = NT8D16 Network/DTR card loop number

**XPEC** xpec# (loop shelf) = NT8D01 Controller card

**VERSION** x = Peripheral Software version (0-99)

mode:

- = **FAST MODE** (from initialization)
- = **MAINT MODE** (by ENLL command in LD 30/LD 32)
- = **BKGD MODE** (second attempt after initialization)

**ACTION:** Information only, no action is required.

### SDL100 status

Current status of the Peripheral Software Download process.

status:

- = **BUSY** (download in process)
- = **IDLE**
- = **SUSP** (user loading a program with SUSP option)
- = **ABRT** (aborting)

**ACTION:** Information only, no action is required.

### SDL1301

Failure in starting the PSW download process.

**ACTION:** Do a manual initialization and try the download again.

If still unsuccessful, do a manual SYSLOAD.

**CAUTION:** Initialization and SYSLOAD will interrupt call processing.

### SDL1302

Failure in continuing the PSW download process.

**ACTION:** Do a manual initialization and try the download again.

If still unsuccessful, do a manual SYSLOAD.

**CAUTION:** Initialization and SYSLOAD will interrupt call processing.

### SDL2100

Cannot allocate memory for PSDL output buffers.

**ACTION:** Contact your technical-support group.

**SDL2110 e hw a v m**

Failed to download software to device.

Where **e** is the cause of the error, as follows:

- 1 = Acknowledgment time-out error
- 2 = Peripheral Software (PSW) version or checksum error
- 3 = PSW record checksum error
- 4 = PSW record format error
- 5 = Card firmware state error

Where **hw** is the card name, as follows: **XNET** (Network Card), **XPEC** (Peripheral Controller), etc.

Where **a** is the card address, as follows

- = Loop for Network Card, Network/DTR Card
- = **XPEC #** (loop shelf) for Peripheral Controller

Where **v** is the PSW version

Where **m** is the mode. as follows:

- = **FAST MODE** (from initialization)
- = **MAINT MODE** (by ENLL command in LD 30)
- = **BKGD MODE** (second attempt after initialization from background program)

**ACTION:** Try to download to the card by using the appropriate enable command.

**SDL2401**

Failed to allocate a Call Register for Peripheral Software Download (PSDL).

**ACTION:** Do a manual initialization and try the download again.

**CAUTION:** Initialization will interrupt call processing.

**SDL4200**

All target devices in the current Peripheral Software Download (PSDL) list failed download.

**ACTION:** Do a manual SYSLOAD and try download again.

**CAUTION:** this will interrupt call processing.

If this message reappears after the download, use a different set of system disks and try download again.

If this message reappears after the download, replace all the cards involved, one at a time, by following the steps in the *Hardware replacement giude*. After each card is replaced try a download.

## SDL5201

Invalid SL-1 software version.

**ACTION:** Refer to the *Administration Guide*. Use LD 22 PRT, PSWV to check the software version on disk. Contact your technical-support group.

## SDL5202

Peripheral Software (PSW) is not configured on the disk.

**ACTION:** Contact your technical-support group.

## SDL5301

Insufficient memory for the Peripheral Software (PSW) subdirectory.

**ACTION:** Try manual initialization and retry the command.

**CAUTION:** Initialization will interrupt call processing.

## SDL5302 v

The Peripheral Software (PSW) version **v** can not be found on the disk.

**ACTION:** Contact your technical-support group.

## SDL5303 t

The Peripheral Software (PSW) Type cannot be found on the disk.

Where **t** is the requested device type, as follows:

**XNET** = Network card

**XPND** = Network/DTR card

**XPEC** = Controller card

**ACTION:** Contact your technical-support group.

## SDL7111 loop

Failure in writing Peripheral Software (PSW) data to a loop.

**ACTION:** Replace the network card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared,

## SDL7112 loop

The Peripheral Controller, Network or Network/DTR card has requested an SDL download. The PSDL is waiting to recover the bad cards; but, they can also be recovered by the midnight SDL Audit.

**ACTION:** If the program was loaded manually, enter \*\*\*\* or END as soon as possible.

**SDL7113**

Trying to put the Peripheral Controller, Network or Network/DTR card into the PSDL tree has failed five times. These cards will not be recovered by SDL.

**ACTION:** Press the Man. Int. button to initialize the system.

**SDL7114**

The SDL recovery request for this Peripheral Controller has been ignored, because of more than 10 requests so far today.

**ACTION:** Contact your technical-support group.

**SDL7115 loop**

The SDL recovery request for this Network or Network/DTR card has been ignored, because of more than 10 requests so far today.

**ACTION:** Contact your technical-support group.

**SDL7116**

The request for SDL auto-recovery has not been queued nor processed. The system can't get a three-word data block.

**ACTION:** Contact your technical-support group.

**SDL7117 x y z**

An error occurred when downloading PSW records to the MSDL/MISP card.

Where **x** is the card type being downloaded, as follows:

- H.4 = MISP base code
- H.5 = BRIL application
- H.6 = BRIT application
- H.7 = MSDL base code
- H.8 = SDI application
- H.9 = DCH application
- H.10 = AML application

Where **y** is the card address to which download was done (INDEX number of MSDL / MISP)

Where **z** is the status of card (CSTAT value) for card type. MSDL base code and MISP base code. Status of card (STAT value) for applications on MSDL/MISP card.

**ACTION:** Check the state of the MSDL card. Try to disable and enable MSDL/MISP card from the software. If the problem persists, contact your technical support group.

**SDL7118 x y z**

An error occurred when downloading PSW records to the MSDL/MISP card.

Meridian 1 was not able to send messages to MSDL/MISP card.

Where **x** is the card type being downloaded, as follows:

- H.4 = MISP base code
- H.5 = BRIL application
- H.6 = BRIT application
- H.7 = MSDL base code
- H.8 = SDI application
- H.9 = DCH application
- H.10 = AML application

Where **y** is the card address to which download was done (INDEX number of MSDL / MISP)

Where **z** is the return value from MSDLMISP\_HDLR, as follows:

- H.0 = Request to send message failed
- H.2 = MSDL/MISP card is not operational
- H.5 = No buffer available to send message to MSDL/MISP card

**ACTION:** Check the state of the MSDL card. Try to disable and enable MSDL/MISP card from the software. If the problem persists, contact your technical support. 



## SECA — Security Administration Alarm

Security Administration Alarm is a resident program. SECA does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### SECA0001

Authcode violation has been detected.

**ACTION:** Refer to the Operator Data for information regarding the origin of the Authcode violation. To get the Operator Data the Alarm Filter Format must be turned on. 

# SECA

**1110** Security Administration Alarm

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## SRPT — System Reports

### How the SRPT works

System Reports is a resident program. SRPT does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

The SRPT messages appearing during the normal system operation. Some are warning messages, and indicate that an action must be taken. Others are information messages, and indicate the system's activity and progress.

### SRPT messages

#### Back-filling messages with zeros

The numerical portion of the following messages is depicted by three or four digits. For example, the same message can be represented by xxx0008 or xxx008.

**SRPT0720 ROM OS x: Cold Start. Running on CP y.**

**ACTION:** Information only, no action required.

**SRPT0721 ROM OS x: Cold Start. Running OS version y created z.**

**ACTION:** Information only, no action required.

**SRPT0722 ROM OS x: Loading “diskos” from /f0/p/os/diskos.**

**ACTION:** Information only, no action required.

**SRPT0723 ROM OS x: Loading “diskos” from /f0/diskos.**

**ACTION:** Information only, no action required.

# SRPT

**SRPT0724 ROM OS x: Loading “diskos” from /f1/p/os/diskos.**

**ACTION:** Information only, no action required.

**SRPT0725 ROM OS x: Loading “diskos” from /f1/diskos.**

**ACTION:** Information only, no action required.

**SRPT0726 ROM OS x: Loading “diskos” from /p/os/diskos.**

**ACTION:** Information only, no action required.

**SRPT0727 ROM OS x: Loading “diskos” from /p/diskos.**

**ACTION:** Information only, no action required.

**SRPT0730 OS x: Cold Start. Release: a Created: b.**

**ACTION:** Information only, no action required.

**SRPT0731 OS x: Warm Start. Release: a. Created: b. Last Cold Start: c  
(from d). Last Warm Start: e (total: f)**

**ACTION:** Information only, no action required.

**SRPT0750 INI x: INI on side y due to System Cold Start.**

**ACTION:** Information only, no action required.

**SRPT0751 INI x: starting INI on side y due to z. Previous INI: side a at b.  
INIs since switchover (c): d, e. INIs since cold start (f): g, h.**

**ACTION:** Information only, no action required.

**SRPT0752 INI x: INI completed in y seconds.**

**ACTION:** Information only, no action required.

**SRPT0754 INI due to “x”. Previous INI: “y”. \ INIs since cold start: z**

**ACTION:** Information only, no action required.

**SRPT0770 TOD x: Midnight job server starts on side y. Number of jobs to  
do: z.**

**ACTION:** Information only, no action required.

**SRPT0771 TOD x: Midnight job server restarts on side y. Reason: error in  
job #a. Skipping first b jobs.**

**ACTION:** Information only, no action required.

**SRPT0772 TOD x: Skipping midnight job y.**

**ACTION:** Information only, no action required.

**SRPT0773 TOD x: Starting midnight job y.**

**ACTION:** Information only, no action required.

**SRPT0774 TOD x: Midnight jobs completed on side y.**

**ACTION:** Information only, no action required.

**SRPT0775 TOD x: Midnight jobs partially completed. Job List corrupted.**

**ACTION:** Consider performing a Warm Start.

**SRPT0780 RST x: MANUAL INIT IN PROGRESS.**

**ACTION:** Information only, no action required.

**SRPT0781 RST x: COLD START IN PROGRESS - Reason y.**

**ACTION:** Information only, no action required.

**SRPT0782 RST x: WARM START IN PROGRESS - Reason y.**

**ACTION:** Information only, no action required.

**SRPT0783 RST x: Restart threshold exceeded for Task ID = y.**

**ACTION:** Information only, no action required.

**SRPT0784 RST x: Warning: unregistered task being restarted - TID = y.**

**ACTION:** Contact your technical support group.

**SRPT0785 RST x: Task being deleted, TID = y.**

**ACTION:** Information only, no action required.

**SRPT0786 RST x: Task being restarted, TID = y.**

**ACTION:** Information only, no action required.

**SRPT0787 RST x: System Recovery failure: Task “y”.**

**ACTION:** Reinitialize the system with the MANUAL INIT button (top).

**SRPT0788 RST x: “RESTART” subsystem failure (no automatic restart).**

*Note:* A database could be lost “If” a reload (cold start) occurs, because the system has probably not performed any data dumps at midnight.

**ACTION:** Reinitialize the system with the MANUAL INIT button (top).

**SRPT0789 RST x: Exception-caused task restart: TID = %p, vec = %p, pc = %p.**

**ACTION:** Contact your technical support group.

**SRPT4500 skipping slot x: cannot calc addr to check for GP w/ cable.**

**ACTION:** Contact your technical support group.

**SRPT4501 x skipping slot x: cannot get cardID.**

**ACTION:** Contact your technical support group.

**SRPT4502 CP SINGLE MODE: Timeout waiting for response from remote CP.**

**ACTION:** Contact your technical support group.

**SRPT4503 CP SINGLE MODE: remote Processor pack not CP.**

**ACTION:** Reseat or replace remote processor with a CP.

**SRPT4504 CP SINGLE MODE: no CP-CP cable.**

**ACTION:** Check that the CP cables are properly connected.

**SRPT4505 CP SINGLE MODE: no remote power.**

**ACTION:** Check the CE power supply on the remote CORE shelf.  
Check that the CMB cable is properly connected.

**SRPT4506 CP SINGLE MODE: both shelves have same IDs.**

**ACTION:** Change the DS4 Jumper setting to correspond to each side.

**SRPT4507 CP SINGLE MODE: both switches = MAINT.**

**ACTION:** Check to ensure that one or both the CP Norm/Maint switches are in the Norm mode (Up).

**SRPT4508 CP SINGLE MODE: could not synch Common Storage Area (CSA) space**

**ACTION:** Contact your technical support group.

**SRPT4509 Could not set CP semaphore bit (side x).**

**ACTION:** Contact your technical support group.

**SRPT4510 CP single mode: memory shadow test failed.**

**ACTION:** Reseat or replace the Standby CP.

**SRPT4511 Cannot open BIC window (slot x); cannot chk for GP cable.**

**ACTION:** Contact your technical support group.

**SRPT4512 Cannot close BIC window (slot x).**

**ACTION:** Contact your technical support group.

**SRPT4513 Could not get CP semaphore bit (slot x).**

**ACTION:** Contact your technical support group.

**SRPT4514 Skipping slot x cannot calc addr to see if CP bit set.**

**ACTION:** Contact your technical support group.

**SRPT4515 Unable to find the active CMDU.**

**ACTION:** Contact your technical support group.

**SRPT4516 Unable to find the diskos.sym file.**

**ACTION:** Contact your technical support group.

**SRPT4517 CP: Switching from CPU %d to preferred side.**

**ACTION:** Information only, no action required.

**SRPT4538 LDR: Inconsistencies in boundaries of previous sl1 load.**

**ACTION:** Contact your technical support group.

**SRPT4539 LDR: Inconsistencies in boundaries of previous ovl load.**

**ACTION:** Contact your technical support group.

**SRPT4540 LDR: Error loading SL1 file into memory.**

**ACTION:** Contact your technical support group.

**SRPT4541 LDR: Error loading overlay file into memory.**

**ACTION:** Contact your technical support group.

**SRPT4542 LDR: Error in loading, last address = x.**

**ACTION:** Contact your technical support group.

**SRPT4543 LDR: Error returned from “segInit2(x)”.**

**ACTION:** Contact your technical support group.

**SRPT4544 LDR: Error getting dloPathFileName for sl1res.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4545 LDR: Unable to open “x”.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4546 LDR: Error: sl1\_start\_addr = x, last sl1\_prot\_addr = y.**

**ACTION:** Contact your technical support group.

**SRPT4547 LDR: Error initializing sl1 pool and data area.**

**ACTION:** Contact your technical support group.

**SRPT4548 LDR: Error getting dloPathFileName for ovlres.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4549 LDR: Unable to open “x”.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4550 LDR: Error in loading, last sl1 address = x.**

**ACTION:** Contact your technical support group.

**SRPT4551 LDR: Ovl start addr (x) overlaps end of sl1 area (y).**

**ACTION:** Contact your technical support group.

**SRPT4552 LDR: Error ovl\_start\_addr = x, last\_ovl\_prot\_addr = y.**

**ACTION:** Contact your technical support group.



**SRPT4553 LDR: Error initializing overlay data area.**

**ACTION:** Contact your technical support group.

**SRPT4554 LDR: Error calling ovlres entry.**

**ACTION:** Contact your technical support group.

**SRPT4555 LDR: Invalid parameter to ldrNextPage, address = x.**

**ACTION:** Contact your technical support group.

**SRPT4556 LDR: seek error while loading (OVL or INSTALL) code file.**

**ACTION:** Contact your technical support group.

**SRPT4557 LDR: Error reading a\_out header from file (OVL or INSTALL).**

**ACTION:** Reload the system with the MANUAL RELOAD button.  
Reinstall the software from the installation diskettes.

**SRPT4558 LDR: Invalid a\_out header in file.**

**ACTION:** Contact your technical support group.

**SRPT4559 LDR: Error reading link header.**

**ACTION:** Reload the system with the MANUAL RELOAD button  
(bottom). Reinstall the software from the installation diskettes.

**SRPT4560 LDR: Invalid link header in file.**

**ACTION:** Contact your technical support group.

**SRPT4561 LDR: Module not linked to page boundary.**

**ACTION:** Contact your technical support group.

**SRPT4562 LDR: seek error while loading (OVL or INSTALL) code file.**

**ACTION:** Reload the system with the MANUAL RELOAD button  
(bottom). Reinstall the software from the installation diskettes.

**SRPT4563 LDR: Error reading a\_out hdr into memory (OVL or INSTALL).**

**ACTION:** Reload the system with the MANUAL RELOAD button  
(bottom). Reinstall the software from the installation diskettes.

**SRPT4564 LDR: Error reading text seg from disk into memory (OVL or INSTALL).**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4565 LDR: Error reading data seg from disk into memory (OVL or INSTALL).**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4566 LDR: seek error while loading sl1 code.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4567 LDR: Error reading a\_out file from sl1 file.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4568 LDR: Invalid a\_out header in sl1 file.**

**ACTION:** Contact your technical support group.

**SRPT4569 LDR: Error reading link header from sl1 file.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4570 LDR: Invalid link header in sl1 file.**

**ACTION:** Contact your technical support group.

**SRPT4571 LDR: Module not linked to page boundary.**

**ACTION:** Contact your technical support group.

**SRPT4572 LDR: seek error while loading sl1 code.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4573 LDR: Error reading a\_out hdr from disk into memory.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4574 LDR: Error reading text seg from disk into memory.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4575 LDR: Invalid data segment in sl1 module.**

**ACTION:** Contact your technical support group.

**SRPT4576 LDR: Error accessing sl1 code file.**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom). Reinstall the software from the installation diskettes.

**SRPT4577 LDR: Error reading data seg from disk into memory (SL-1).**

**ACTION:** Reload the system with the MANUAL RELOAD button (bottom).

**SRPT4578 LDR: Invalid a\_out header in memory (OVL or INSTALL).**

**ACTION:** Contact your technical support group.

**SRPT4579 LDR: Invalid link header in memory (OVL or INSTALL).**

**ACTION:** Contact your technical support group.

**SRPT4580 LDR: End of protected data = x (OVL or INSTALL).**

**ACTION:** Contact your technical support group.

**SRPT4581 LDR: Unprot data start x overlaps prot data end at y (OVL or INSTALL).**

**ACTION:** Contact your technical support group.

**SRPT4582 LDR: Error copying data from PROT to UNPROT for Static Modules.**

**ACTION:** Reinitialize the system with the MANUAL INIT button (top). Reload the system with the MANUAL RELOAD button (bottom).

**SRPT4583 LDR: Invalid a\_out header in memory (SL-1).**

**ACTION:** Contact your technical support group.

**SRPT4584 LDR: Invalid link header in memory (SL-1).**

**ACTION:** Contact your technical support group.

# SRPT

**SRPT4585 LDR: End of protected data = x (SL-1).**

**ACTION:** Contact your technical support group.

**SRPT4586 LDR: Unprot data start x overlaps prot data end at y (SL-1).**

**ACTION:** Contact your technical support group.

**SRPT4587 LDR: Error copying data from PROT to UNPROT for SL-1 Modules.**

**ACTION:** Reinitialize the system with the MANUAL INIT button (top).

**SRPT4591**

PDT password reset failed.

**ACTION:** Contact your technical support group.

**SRPT4592**

PDT password reset successful.

**ACTION:** Information only, no action required.

**SRPT4593**

PDT password file restored from backup.

Information only, no action required.. 

## SYS — System Loader

### In this chapter

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## How the SYS works

This program will output SYS messages due to problems with the following:

- ◆ faulty essential hardware: CPU, RAM and primary storage device
- ◆ incompatible software packages
- ◆ corrupted, missing or invalid programmable data

### Causes of system reload

A system reload occurs when:

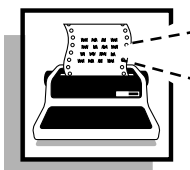
- ◆ the system is powered-on
- ◆ the system RESET button is pressed
- ◆ the RELOAD buttons on the Changeover and Memory Arbitrator cards are pressed simultaneously
- ◆ a CE fault or power failure has caused some of the system memory contents to be destroyed



For more information refer to the *You should know this* chapter, *Software tools*, *System reaction when things don't go right*, in this document. An occurrence of a system reload is indicated by SYS messages. The system reload process takes about five to 25 minutes to complete on all systems except the Option 51C, 61C, 81 and 81C. During this time, call processing ceases throughout the entire system.

## Example of SYS messages

The following is an example of a system loader message for Option 81.

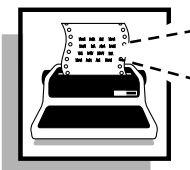


```

SYS700 02 - ROM created on Wed Sep 28
01:13:13 PDT 1994
SYS702 24 - DRAM size (in megs) - Banks 123456
populated
SYS700 04 - Booting ROM OS
(other information)
SYS000 000400 000000 000000 000000 CPU 1
SYSDB RLS/ISS: 1932 DATE/TIME: NOT AVAIL.
RECS 50
SYSLOAD RLS: 19
ISSUE: 32
DONE

```

The following is an example of a system loader message for Option 61:



```

SYS000 000400 00000F FFFFFFFF 00 CPU 1
SYS100 CPU 0
SYSLOAD RLS: 19
ISSUE 32
DONE

```

The following is an explanation of fields that appear in system reload messages:

- ◆ **SYS000** = Output code. The output code SYS000 always appears as shown in the preceding example.
- ◆ **000400** = Source field. Cause of the system reload as shown below.
  - 0400** = Power switched on or Reset button(s) pressed
  - 0803** = Segmented Bus Extender fault
  - 0805** = Switched CPUs due to hardware or software fault
  - 1000** = Parity error
  - 2000** = Watchdog timeout
  - 4000** = Write-protect violation

**8000** = Response timeout

◆ **00000F** = Address field. Fault address.\*

◆ **FFFFFF** = Display field. Last maintenance code display.\*

◆ **00** = Display code for a previous fault as shown below.

**001X** = Extender-generated bus fault

**002X** = Page 0 memory test fault

**003X** = Memory page decoding fault

**004X** = Switch CPU fault

◆ **CPU 1** = CPU used for the system load

\* The number of digits in these fields vary between systems.

## SYS messages

### SYS0000

SYSLOAD has taken place.

**ACTION:** Examine subsequent SYS messages for fault indicators. Examine the source field and the display code of this message for fault indicators.

### SYS0000 0500

System switched on with no action from the disk.

**ACTION:** Reseat the disk. If the system does not start to reload, replace the Multi-Disk Unit or Floppy Disk Unit by following the steps in the *Hardware replacement* guide. If system does not start to reload, replace the Mass Storage Interface or Floppy Disk Interface card by following the steps in the *Hardware replacement* guide. If the system does not reload contact your technical support group immediately.

### SYS0001 FATAL

System real-time clock (RTC) does not respond. The Peripheral Signaling card or the Clock Controller card may be faulty.

**ACTION:** Replace the PS or CC card by following the steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared and the system starts to reload. If the system does not reload contact your technical support group immediately.



**SYS0002 FATAL**

Configuration record not found. The system is not able to load with this storage medium.

**ACTION:** Replace active storage medium with backup disk(s). Press the RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. After pressing the button(s), verify that the system is reloading. If the system does not reload contact your technical support group immediately.

**SYS0003 FATAL**

Unable to allocate sufficient memory to load firmware. A memory fault must be cleared or more memory must be equipped.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared and that the system is reloading. If the system does not reload contact your technical support group immediately.

**SYS0004 FATAL**

Unable to allocate the overlay area. A memory fault must be cleared or more memory must be equipped.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared and that the system is reloading. If the system does not reload contact your technical support group immediately.

**SYS0005 FATAL**

DN translator program not on storage medium. A vital program is missing from the storage medium.

**ACTION:** Replace active storage medium with backup disk(s). Press RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. After pressing button the (s), verify that the system is reloading. If the system does not reload contact your technical support group immediately.

**SYS0006 FATAL**

Primary storage medium has permanent interrupt. The fault must be cleared and the storage device reenabled.

**ACTION:** If the system does not start to reload, replace the Multi-Disk Unit or Floppy Disk Unit by following the steps in the *Hardware replacement* guide. If the system does not start to reload, replace the

Mass Storage Interface or Floppy Disk Interface card by following the steps in the *Hardware replacement* guide. If the system does not reload contact your technical support group immediately.

**SYS0008 FATAL**

Active CPU faulty. Force a switch to idle CPU.

**ACTION:** Place the MAINT/NORM switch in the MAINT position on the idle IF card. The faceplate LED on the idle IF card should be lit. If the system does not reload contact your technical support group immediately.

**SYS0009 FATAL**

Not enough memory for operation. A memory fault must be cleared or more memory must be equipped.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared and that the system is reloading. If the system does not reload contact your technical support group immediately.

**SYS0010 FORCED**

Memory 0 failure. Memory 0 is associated with CPU 0. If more than one memory module on any shelf fails, then suspect bus extenders.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card(s) verify that the fault is cleared.

**SYS0011 FORCED**

Memory 1 failure. Memory 1 is associated with CPU 1. If more than one memory module on any shelf fails, then suspect bus extenders.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card(s) verify that the fault is cleared.

**SYS0016**

DMWI package removed since neither MW, IDA or DPNSS package is equipped.

**ACTION:** Equip with the appropriate package.

**SYS0020 FATAL**

There is a memory failure on protected data store, memory card 0.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card(s) verify that the fault is cleared and that the system is reloading. If the system does not reload contact your technical support group immediately.

**SYS0021 FATAL**

There is a memory failure on protected data store, memory card 1.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared and that the system is reloading. If the system does not reload contact your technical support group immediately.

**SYS0023**

All QSIG Supplementary services RCAP are removed since the GF package is not equipped.

**ACTION:** Equip package 305. Sysload and reconfigure the QSIG RCAP for supplementary services.

**SYS0024**

Invalid message type detected when transferring a loss plan (losp) file. Transmission can be adversely affected.

**ACTION:** Call the manufacturer.

**SYS0025**

A loss plan structure was found in illegal state.

**ACTION:** Call the manufacturer.

**SYS0026**

No cards were specified in transfer of the data from card.db file. Transmission will be adversely affected.

**ACTION:** Call the manufacturer.

**SYS0027**

Invalid message type detected when transferring an attribute (attr) file data. Transmission will be adversely affected.

**ACTION:** Call the manufacturer.

**SYS0028**

Too many GTDs were specified in the attr.db file loaded.

**ACTION:** Call the manufacturer

**SYS0029**

The starting GTD specified in the attr.db file was beyond the limit in the system.

**ACTION:** Contact your technical support group.

**SYS0030**

No GTD definitions were supplied. Transmission will be adversely affected.

**ACTION:** Call the manufacturer.

**SYS0031**

The ending GTD specified in the attr.db file was beyond the limit in the system.

**ACTION:** Call the manufacturer

**SYS0032**

Memory could not be allocated for storing TNs for GDLS default port type allocation.

**ACTION:** Call the manufacturer.

**SYS0033**

No list of TNs for default port type allocation was found.

**ACTION:** Call the manufacturer.

**SYS0034**

A problem occurred during the reading of the GDLS loss plan files.

**ACTION:** Call the manufacturer.

**SYS0035**

Trying to load Numeris Master Mode data with MMCS or Master Mode packages not equipped. The data will be lost.

**ACTION:** Equip Packages 309 and 317 and re-load.

**SYS0036**

CNAME package has been automatically turned off because the system is not equipped with the CPND package.

**ACTION:** Contact your technical support group.

**SYS0037**

CMOD unit data is discarded because the system is CNUMB AND CNAME package restricted.

**ACTION:** Contact your technical support group.

**SYS0039**

ICS MFS package equipped and CIST package not equipped.

**ACTION:** Enable the CIST package and reload the system.

**SYS0040**

I/O device number 0 is an incorrect type. An error has been made in the data on the storage medium.

**ACTION:** To correct the I/O device number 0 type, refer to the *administration input/output guide* and use LD 17. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0041**

I/O device number 1 is an incorrect type. An error has been made in the data on the storage medium.

**ACTION:** To correct the I/O device number 1 type, refer to the *administration input/output guide* and use LD 17. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0050**

The CPU has no spare memory module. Not for system Options NT, XT, RT, 51, 61, 71, 61C and 81.

**ACTION:** Add more memory by following the steps in the *Hardware replacement* guide.

**SYS0051**

DMI entry has been discarded due to a missing FNP (160) package

**ACTION:** Contact your technical support group.

**SYS0060**

The CPU has no spare memory module. There are too many logical units, TDS or MFSD loops for the I/O table. Not for system Options NT, XT, RT, 51, 61, 71, 61C and 81.

**ACTION:** Add more memory by following the steps in the *Hardware replacement* guide.

**SYS0070 FATAL**

There is a primary storage medium fault. The storage medium is not ready or a head fault has been detected. On an Option 51 or 61, this message can also be caused by an SDI paddle board.

**ACTION:** Replace the storage medium with backup disk(s). Press the RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. After pressing the button(s), verify that the system is reloading. If the system does not reload contact your technical support group immediately. For an Option 51 or 61, replace the SDI paddle board by following the steps in the *Hardware replacement* guide.

**SYS0071**

A record could not be read from the storage medium. A storage medium fault is indicated. The system may still load, even though data or programs are missing.

**ACTION:** Replace the storage medium with the backup disk(s). Press the RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. To check for correct programmable data after the system reloads, refer to the *administration input/output guide* and use LD 22, 21 and 20. Check for proper system operation.

**SYS0072**

A storage device function timed out. A fault in the storage device interface (TI or MSI) or storage device (TU or MSU) is indicated. The system may still load even though data or programs are missing.

**ACTION:** Replace the Multi-Disk Unit or Floppy Disk Unit by following the steps in the *Hardware replacement* guide. Replace the storage medium with backup disk(s). Press the RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. To check for correct programmable data after the system reloads, refer to the *administration input/output guide* and use LD 22, 21 and 20. Check for proper system operation. If the system does not operate properly,

replace the Mass Storage Interface or Floppy Disk Interface card by following the steps in the *Hardware replacement* guide. Press the RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. To check for correct programmable data after the system reloads, refer to the *administration input/output guide* and use LD 22, 21 and 20. Check for proper system operation.

**SYS0073**

Data could not be accessed from one tape track or disk address. A fault in the storage device interface (TI or MSI) or storage device (TU or MSU) is indicated. System may still load even though data or programs are missing.

**ACTION:** Replace the Multi-Disk Unit or Floppy Disk Unit by following the steps in the *Hardware replacement* guide. Replace the storage medium with the backup disk(s). Press the RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. To check for correct office data after the system reloads, refer to the *administration input/output guide* and use LD 22, 21 and 20. Check for proper system operation. If the system does not operate properly, replace the Mass Storage Interface or Floppy Disk Interface card by following the steps in the *Hardware replacement* guide. Press the RESET button or both RELOAD buttons simultaneously to restart the SYSLOAD. To check for correct office data after the system reloads, refer to the *administration input/output guide* and use LD 22, 21 and 20. Check for proper system operation.

**SYS0079**

Both CPUs are faulty.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the fault. (Look for something common to both.)

**SYS0080**

The active CPU is faulty. Initiating CPU switch.

**ACTION:** This message is for information only. Check for INI and CED messages following this SYS message and follow the instructions provided to clear the fault on the active CPU.

**SYS0081**

The physical available memory does not match the configuration memory, but fulfills minimum requirement to allow a sysload.

**ACTION:** To correct the configuration memory use LD 17 and refer to the *administration input/output guide*.

**SYS0082**

A Segmented Bus Extender is configured but not equipped.

**ACTION:** Install a SBE card, referring to the installation guide.

**SYS0083**

A Segmented Bus Extender is equipped but not configured.

**ACTION:** Refer to the *administration input/output guide*, use LD 17 to configure the SBE.

**SYS0084**

The secondary memories are disabled, and all primary memories are used. (Procedure DO\_OVLY\_AREA.)

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the fault.

**SYS0085**

SMART ROM MTYP 0 assumed (procedure CHECK\_ROM\_TAG).

**ACTION:** Contact your technical support group.

**SYS0086**

Corrective ROM MTYP 192 assumed (procedure CHECK\_ROM\_TAG).

**ACTION:** Contact your technical support group.

**SYS0087**

There is a memory configuration error (procedure BUILD\_MOD\_MAP).

**ACTION:** To correct the configuration record, refer to the *administration input/output guide* and use LD 17. Use LD 43 EDD to correct the programmable data on the primary storage medium. You may have to use a backup disk if the primary storage medium is corrupted.

**SYS0088 QPC<sub>xxx</sub>y**

ROM issue not compatible with software issue (procedure CHECK\_ROM\_TAG), where **xxx** is the QPC code and **y** is the vintage code of the ROM.



Systems with vintage B and later ROM cards can disregard this message. All normal operations on an upgraded system are unaffected.

**ACTION:** Contact your technical support group.

#### **SYS0089CPU p b**

Memory block **b** on page **p** is not configured. (Procedure ISSUE\_ERRORS.) Not for system Options NT, XT, RT, 51, 61, 71, 61C and 81.

**ACTION:** Contact your technical support group.

#### **SYS0090 xx**

Memory **xx** failure. This message may indicate an incorrect ROM card. For system Options XN, NT, XT, RT, 51, 61 and 71 the value of **xx** can be:

**00** = memory card 0 of CPU 0

**01** = memory card 1 of CPU 0

**02** = memory card 2 of CPU 0

**10** = memory card 0 of CPU 1

**11** = memory card 1 of CPU 1

**12** = memory card 2 of CPU 1

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card(s) verify that the fault is cleared.

#### **SYS0091 x**

Page decoding fault on memory **x** (0 or 1). Page decoding faults cause all the memory cards being tested at the time of the failure to be marked failed. Not for system Options NT, XT, RT, 51, 61, 71, 61C and 81.

**ACTION:** Contact your technical support group.

#### **SYS0092 x**

There is a CMA fault, CMA card located with memory **x** (0 or 1)

**ACTION:** Replace the CMA card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**SYS0093 INHIBITS xxxx**

If multiple reload attempts occur, past history failures may cause serious assumed fault conditions indicated by **xxxx** as follows.

**1. If xxxx = 0001**, Primary page 0 assumed faulty. No attempt is made to test this memory card.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the memory fault.

**2. If xxxx = 0002**, Secondary page 0 assumed faulty. No attempt is made to test this memory card.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the memory fault.

**3. If xxxx = 0004**, Primary page decode assumed faulty. No attempt is made to test the memory.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the memory fault.

**4. If xxxx = 0008**, Secondary page decode assumed faulty. No attempts are made to test the memory cards on this memory shelf.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the memory fault.

**5. If xxxx = 0010**, Enabling Segmented Bus Extenders has caused a bus fault. The extenders are not enabled.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the extender faults.

**6. If xxxx = 0020**, Switching to the standby CPU is not attempted.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the CPU fault.

**7. If xxxx = 0040**, Execution from active CPU is not attempted.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the CPU fault.

8. If **xxxx = 0080**, Trap sequence determined primary page 0 faulty. Card will be re-tested.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the memory fault.

9. If **xxxx = 0100**, Trap sequence found that the secondary page 0 is faulty. The card will be re-tested.

**ACTION:** Check for INI and CED messages following this SYS message and follow the instructions provided to clear the memory fault.

#### **SYS0094 x**

Memory page **x** passes the test but the memory page is not in the configuration. Memory cards that are installed and not identified in the configuration record are tested, but not used for loading programs or data. Such cards are indicated by **x** which can be the same as for SYS0090.

**ACTION:** Replace the Memory card(s) by following the steps in the *Hardware replacement* guide. After replacing the card(s) verify that the fault is cleared.

#### **SYS0095 x**

Indicated split memory option for the memory card differs from the majority. (The data store memory split option is verified on a "majority opinion" basis of each memory card and the configuration record. For SL-1 LE and VLE only).

**ACTION:** Information only, no action required.

#### **SYS0096**

The configuration changed from split to nonsplit. The configuration record differs from both memory cards concerning the "split data store" option. In this event, the configuration record is changed to agree with the majority. For SL-1 LE and VLE only.

**ACTION:** Information only, no action required

#### **SYS0097**

The configuration changed from nonsplit to split. The configuration record differs from both memory cards concerning the "split data store" option. In this event, the configuration record is changed to agree with the majority. For SL-1 LE and VLE only.

**ACTION:** Information only, no action required

## SYS0098 xx

Memory **x** changed from unequipped to equipped.  
Configuration-equipped memory cards are forced to be consistent with the split option and with minimum system requirements.  
Memory cards which are incorrectly equipped are indicated by **x** as follows: For SL-1 LE and VLE only.

**00** = page 0 memory 0

**00** = page 1 memory 0

**00** = page 2 memory 0

**10** = page 0 memory 1

**10** = page 1 memory 1

**10** = page 2 memory 1

**ACTION:** Verify switch settings for circuit cards by following the steps in the installation guide.

## SYS0099 x

Memory **x** changed from equipped to not-equipped. **x** is interpreted as for SYS0098. For SL-1 LE and VLE only.

**ACTION:** Verify switch settings for circuit cards by following the steps in the installation guide.

## SYS0100

The CPU switchover has been initiated by SYSLOAD. This is a normal code during a system reload.

**ACTION:** Information only, no action required.

## SYS0101 code xxx

Where CODE can be:

**PROG**—Program **xxx** has length error.

**INTR**—Intrinsic length error.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0102 code xxx

Where the code can be:

**PROG** = Vector number out of range, program **xxx**.

**INTR** = Intrinsic number out of range.

**ACTION:** Reload the system using the backup software as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0103 code xxx**

Where the code can be:

**PROG** = Program **xxx** already loaded.

**INTR** = Intrinsic already loaded.

**ACTION:** Reload the system using the backup software as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0104 INTR 0**

No intrinsic on storage medium. This is a warning only.

**ACTION:** Information only. If this message reappears contact your technical support group.

**SYS0105 PROG xxx**

Meridian 1 assembler routines are not supported. Programs containing such code will not be loaded.

**ACTION:** Information only. If this message reappears contact your technical support group.

**SYS0106**

The program number is in old compiler format.

**ACTION:** Information only. If this message reappears contact your technical support group.

**SYS0190**

A valid TN is in the DN block and the TN is rejected.

**ACTION:** Contact your technical support group.

**SYS0191**

An invalid TN is in the DN block; and the TN is rejected from DN block.

**ACTION:** Contact your technical support group.

**SYS0201**

There is a data block length error. Output data depends on the software as follows:

**X11: xxxx yyyy** (data structure identifier & index number)

**X08: TN l s c u** — terminal number.

**ACTION:** Contact your technical support group for help identifying xxxx yyyy. To correct the problem refer to the *administration*

*input/output guide* and use LD xx. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0202 TN I s c u**

Station type does not match the card type.

**ACTION:** Contact your technical support group.

**SYS0203 TN I s c u**

Secondary attendant block forces out TN already loaded.

**ACTION:** To correct the secondary attendant block refer to the *administration input/output guide* and use LD 12. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0204 TN I s c u**

Unit number of Digitone receiver not zero.

**ACTION:** To correct the Digitone receiver unit number refer to the *administration input/output guide* and use LD 13. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0205 TN I s c u**

Unit number of trunk not zero or one.

**ACTION:** To correct the trunk unit number refer to the *administration input/output guide* and use LD 14. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy

of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0206**

Loop number out-of-range.

**ACTION:** To correct the loop number range refer to the *administration input/output guide* and use LD 17. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0207**

Shelf not in configuration record (local or remote).

**ACTION:** To configure the local or remote shelf refer to the *administration input/output guide* and use LD 17. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0208 TN I s c u**

Invalid pointer to station data.

**ACTION:** To correct the telephone data refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0209**

Identical data block encountered twice.

**ACTION:** To out one of the identical data blocks refer to the *administration input/output guide* and use the appropriate LD xx. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0210**

ARS data block does not exist.

**ACTION:** Contact your technical support group.

**SYS0211**

ARS user codes exceed table size.

**ACTION:** Contact your technical support group.

**SYS0212**

SCL DND template number exceeds length of list allocated.

EDD error.

**ACTION:** To correct the template number length refer to the *administration input/output guide* and use LD 18 and LD 10, 11, 12 for SCL, and LD 15, 26, and LD 10, 11, and 12 for DND. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0213**

Attempt to use nonexistent ARS schedule block.

**ACTION:** Contact your technical support group.

**SYS0214**

Conversion error.

**ACTION:** Try the conversion again. If this message reappears contact your technical support group.



**SYS0215**

Storage medium directory error.

**ACTION:** Try a backup copy of the software. If the problem continues, replace the storage medium by following the steps in the *Hardware replacement* guide.

**SYS0216**

Patch block error.

**ACTION:** Contact your technical support group.

**SYS0218**

Limit on number of storage medium, teletype and History File units exceeded (limit is 16 units).

**ACTION:** After the system recovers, use LD 22 CFN to ensure the correct number of TTY devices are programmed.

**SYS0219**

Incompatible feature packages are enabled. Attendant Overflow Position feature package is changed to restricted because Centralized Attendant Service Main or Remote feature package is not restricted.

**ACTION:** Have your technical support group contact Northern Telecom Technical Assistance Service to set or reset the proper package restriction flag. You can use LD 22 PRT, PKGxxx to check the restricted status of the package.

**SYS0227**

Unable to allocate enough Program Data Store for converted Meridian SL-1 station.

**ACTION:** To check the memory map refer to the *administration input/output guide* and use LD 29. Add memory if needed.

**SYS0229**

Same as SYS0227.

**ACTION:** See SYS0227 action.

**SYS0230**

Customer Data Block (CDB) does not exist when loading Automatic Call Distribution (ACD) blocks.

**ACTION:** To resolve conflict between CDB and ACD blocks, refer to the *administration input/output guide* and use LD 15 or LD 23. Replace the primary storage disk with a second copy. Use LD 43

EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0231**

Number of ACD blocks exceeds list size, or the ACD DN does not exist in DN tree.

**ACTION:** To correct the list size or add the ACD DN, refer to the *administration input/output guide* and use LD 23. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0232 key cust dn**

Illegal ACD-DN.

**ACTION:** To remove ACD-DN refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0233**

Data assigned to SL-1 ACD key is invalid, or the data assigned cannot be used with 500/2500 sets as ACD stations.

**ACTION:** To correct the invalid ACD key or the assigned data, refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded,

check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0234**

Number of stations assigned to ACD group exceeds maximum.

**ACTION:** To correct the number of stations refer to the *administration input/output guide* and use LD 23. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0236**

Authorization code data block does not exist.

**ACTION:** To program an authorization code data block, refer to the *administration input/output guide* and use LD 88. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0237**

Too many authorization codes in authcode table.

**ACTION:** To remove authorization codes, refer to the *administration input/output guide* and use LD 88. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the “programmable data”. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the “programmable data” using LD 20, 21 or 22 to ensure that it is valid.

**SYS0240**

CDB does not exist for Direct Inward System Access (DISA) data block.

**ACTION:** To program the customer number, refer to the *administration input/output guide* and use LD 24. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0241**

Too many DISA data blocks in DISA list.

**ACTION:** To correct DISA data blocks, refer to the *administration input/output guide* and use LD 24. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0242**

Number of dial intercom groups exceeds maximum allowed in customer data block.

**ACTION:** Refer to the *administration input/output guide*, use LD 15 to correct the number of dial intercom groups. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the “programmable data”. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the “programmable data” using LD 20, 21 or 22 to ensure that it is valid.

**SYS0245**

Too many different BCS telephone configurations or PBX telephone configurations have been created. Make more sets with identical feature configurations and key layouts.

**ACTION:** To correct feature configurations and key layouts, refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go

Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0250**

Tree data blocks corrupted. Tree will be released.

**ACTION:** Contact your technical support group.

**SYS0251**

Unable to locate New Flexible Code Restriction (NFCR) pointers table.

**ACTION:** Contact your technical support group.

**SYS0252**

Unable to locate tree block pointers table.

**ACTION:** Contact your technical support group.

**SYS0253**

SPCA Class of Service only allowed for IPE, TIE, E&M, trunks with MIA class of service. Class of service changed to SPCD.

**ACTION:** DO NOT DATADUMP.

**SYS0254**

the number of digital Tn's exceeds the Digital TN Limit and no further Tn's can be sysloaded.

**ACTION:** Contact your technical support group.

**SYS0255**

The number of analog TN's exceeds the Analog TN limit and no further analog TN's can be sysloaded.

**ACTION:** Contact your technical support group.

**SYS0256**

Unable to allocate memory for PLUGIN data block.

**ACTION:** Contact your technical support group.

**SYS0257**

PLUGIN pkg not equipped, PLUGIN data cleared.

**ACTION:** Contact your technical support group.

**SYS0300 TN I s c u**

Customer data block does not exist.

**ACTION:** To program a customer data block refer to the *administration input/output guide* and use LD 15. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the “programmable data”. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the “programmable data” using LD 20, 21 or 22 to ensure that it is valid.

**SYS0301**

ACD supervisor key assigned to an agent station.

**ACTION:** To correct the key assignment refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0302**

ACD display queue key has invalid ACD DN.

**ACTION:** To correct the display queue key refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0303**

More than 9 supervisors are assigned to a simple ACD DN.

**ACTION:** To correct the assigned supervisors refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0304**

Agent key assigned but agent does not exist.

**ACTION:** To program the agent refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0305**

Agent key identifies agent who already has another supervisor.

**ACTION:** To correct the agent key refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0306**

Agent key assigned identifies a supervisor station.

**ACTION:** To correct the agent key refer to the *administration input/output guide*, and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0307**

Attempt to assign an ACD agent function to a noonday set.

**ACTION:** To correct the problem refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0308**

Attempt to assign a 'call supervisor' key to the supervisor.

**ACTION:** To correct the assignment refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0310 key cust dn**

Illegal digits in DN.

**ACTION:** To correct the secondary attendant block refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0310 TN l s c u**

Illegal DN or illegal key.

**ACTION:** To correct the DN or key refer to the *administration input/output guide* and use LD 10 or 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the



second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0311**

Not-ready-key is assigned to a non-ACD station.

**ACTION:** To correct the key assignment refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0312**

CAS key assigned to a telephone but CAS data blocks do not exist.

**ACTION:** To correct the CAS data block refer to the *administration input/output guide* and use LD 15. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0315**

A function requiring a LED is assigned to a non-LED key.

**ACTION:** To correct the LED assignment refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0316**

CAS key assigned to a telephone but CAS data blocks do not exist.

**ACTION:** To correct the CAS data block refer to the *administration input/output guide* and use LD 15. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data

to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0317**

More than 10 CAS keys have been assigned to telephones.

**ACTION:** To correct the CAS keys refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0320 TN l s c u**

DN assigned dials operator.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to check the telephone database.

**SYS0330 TN l s c u**

Shorter DN already exists. For **SYS0330xxxx, xxxx** is the DN concerned.

**ACTION:** To correct the DN refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0340 TN I s c u**

Longer or equal length DN already exists.

**ACTION:** To correct the DN refer to the *administration input/output guide* and use LD 11. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0350 TN I s c u**

Loop number in Directory Number block does not match TN.

**ACTION:** Contact your technical support group.

**SYS0360 TN I s c u**

Trunk member number out of range.

**ACTION:** To correct the member number refer to the *administration input/output guide* and use LD 14. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0370 TN I s c u**

Route data block does not exist.

**ACTION:** To correct the route number refer to the *administration input/output guide* and use LD 14. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0380 TN I s c u**

Attendant member number out of range or in use.

**ACTION:** To correct the attendant number refer to the *administration input/output guide* and use LD 12. Replace the

primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0385**

TN of the terminal is not the prime DN of attendant.

**ACTION:** To correct the prime DN refer to the *administration input/output guide* and use LD 12. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0390 TN I s c u**

Attendant Directory Number block of wrong type.

**ACTION:** To correct the attendant block refer to the *administration input/output guide* and use LD 12. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0391**

Invalid TN for attendant.

**ACTION:** To correct the TN for the attendant refer to the *administration input/output guide* and use LD 12. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0400 TN I s c u**

Assigned DN has more than 16 stations. Release 12 and earlier software can only have 16 Multiple Appearance DNs. Release 30 allows up to 30.

**ACTION:** To check Multiple Appearance DNs refer to the *administration input/output guide* and use LD 20 DN. Use LD 10 or LD 11 to correct.

**SYS0410 TN I s c u**

DN call type in conflict, i.e., single vs. multiple.

**ACTION:** To correct the secondary attendant block refer to the *administration input/output guide* and use LD 12. Replace the primary storage disk with a second copy. Use LD 43 EDD to dump the corrected data to the second copy disk. This gives you a clean copy of the programmable data. If you get an EDD016 No Go Bad Data message, use the EDD CLR command and perform a system reload from the second copy. After the system is reloaded, check the programmable data using LD 20, 21 or 22 to ensure that it is valid.

**SYS0420**

Network loop in configuration record conflicts with existing loop.

**ACTION:** Contact your technical support group.

**SYS0421**

Tone loop in configuration record conflicts with existing loop.

**ACTION:** Contact your technical support group.

**SYS0422**

Conference loop in configuration record conflicts with existing loop.

**ACTION:** Contact your technical support group.

**SYS0423**

MF Sender in configuration record conflicts with existing loop

**ACTION:** Contact your technical support group.

**SYS0430**

Private DN in trunk data block conflicts with existing DN.

**ACTION:** Contact your technical support group.

## SYS0500

CPU test failed on nonactive CPU.

**ACTION:** Replace the card(s).

### 1. MISC or Interface (IF) card

**ACTION:** Replace the MISC or IF card(s) by following the steps in the *Hardware replacement* guide. If this message reappears try the next card on the list.

### 2. CPU card or Function (FN) card

**ACTION:** Replace the CPU or IF card by following the steps in the *Hardware replacement* guide. If this message reappears contact your technical support group.

## SYS0510

Changeover and Memory Arbitrator (CMA) card failed to respond. Faulty CMA pack.

**ACTION:** Replace the CMA card by following the steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

## SYS0511

CMA card indicated that nonactive CPU failed CPU test. Probable fault on nonactive CPU or CMA pack.

**ACTION:** Replace the CMA card by following the steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

## SYS0520

Unable to find data for other CPU after switchover.

**ACTION:** Force the CPU to become active by placing the Norm/Maint switch to the Maint position. This procedure will cause an INI. Place the switch back to the Norm position when done.

## SYS0600

Emergency conference group out-of-range (0 to 9).

**ACTION:** Check to ensure the data is correct.

## SYS0601

Emergency conference member out-of-range (1 to 10).

**ACTION:** Check to ensure the data is correct.

**SYS0602**

Software problem. If message persists, call manufacturer.

**ACTION:** Check to ensure the data is correct.

**SYS0603**

Two TNs assigned as the same member of the same group.

**ACTION:** Check to ensure the data is correct.

**SYS0606 id index**

Customer data block number read from the storage medium record header greater than the size of the customer data block pointer array. The output data is defined as follows:

**id** = Destructor Identifier.

**index** = Index number definition.

The meaning of the possible **id index** are:

**ESN** = Customer number where an error occurred while loading ESN data block (ESN\_DATA\_BLK).

**ESNS** = Data block index where an error occurred while loading supplementary digit block (ESN\_SDR\_BLK).

**ESNL** = Customer number where an error occurred while loading location route block (ESN\_LOC\_RTE\_BLK).

**ESNR** = Data block index where an error occurred while loading route list (ESN\_RTE\_LIST\_BLK).

**ESND** = Data block index where an error occurred while loading digit manipulation block (ESN\_DM\_BLK).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0607 id index**

Electronic Switched Network (ESN) data structure was loaded from storage medium but a corresponding customer data block to reference this structure does not exist. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0608 id index**

More than one ESN data block was loaded from storage medium for the same customer. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0609 id index**

One of the ESN data structures which are referenced from the ESN data block was loaded but the ESN data block does not currently exist for the corresponding customer. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0610 id index**

Insufficient protected data store for supplementary digit pointer block. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0611 id index**

The supplementary digit restriction index read from the storage medium record header is greater than the maximum value, which is stored in the ESN data block. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0612 id index**

More than one supplementary digit restriction block was found on storage medium for the same customer and index. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.



**SYS0613 id index**

Insufficient protected data store memory space to set up the route list pointer block. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0614 id index**

Route list index read from the storage medium record header greater than the maximum value, which is stored in the ESN data block. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0615 id index**

More than one route list block was found on storage medium for the same customer and index. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0616 id index**

Insufficient protected data store memory space to set up the digit manipulation pointer block. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0617 id index**

Digit manipulation index read from the storage medium record header is greater than the maximum value, which is stored in the ESN data block. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0618 id index**

More than one digit manipulation block was found on storage medium for the same customer and index. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0619 id index**

More than one location route block was found on storage medium for the same customer and index. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0620 id index**

Insufficient protected data store memory space to set up a block in the network translation tree. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0621 id index**

One of the translation table digits read from the storage medium is out of range. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0622 id index**

The same sequence of digits has been read from storage medium for the specified network translation table. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0623 id index**

Cannot enter any more ARS digit manipulation records into ESN digit manipulation block, because ESN DM block is full. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0624 id index**

Cannot convert ARS codes other than three digits in length. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0625 id index**

Cannot convert digit manipulation entry as length is greater than 20 digits. See SYS606 for output data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0626**

NARS is not available.

**ACTION:** To ensure that the NARS packages are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. If the NARS packages are not on the disk, contact your technical support group.

**SYS0627**

Translation data is corrupted.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0628**

Route list pointer.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0629

Trunk route data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0630

Location route data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0631

Route list entry data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0632

Insufficient protected data store memory space to set up the Free Calling Area Screening (FCAS) pointer block.

**ACTION:** Add more memory, if possible, by following the steps in the *Hardware replacement* guide.

## SYS0633

More than one FCAS NXX block was found on storage medium for the same customer, index and NPA.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0634

The FCAS index read from the storage medium record header is greater than the maximum value, which is stored in the ESN data block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0638**

NARS—Invalid NXX.

**ACTION:** Use LD 90 to check for NXX code.

**SYS0639**

NARS—FCAS data cannot be accessed.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0640**

Cannot perform data conversion for this generic/release/version of storage medium.

**ACTION:** Contact your technical support group.

**SYS0641**

The value of the variable 'BLOCKTYPE' was out of range. This variable is set to the storage medium header word 'TAPEBLOCKTYPE'.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0642**

The customer data block number read from the storage medium record header is greater than the customer data block pointer size.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0643**

No customer data block exists to which authcode can be attached.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0644**

The block number read from the storage medium record header does not match the expected block number.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0645**

More than one block was read from storage medium with the same block identification.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0646**

The authcode header table (AUTH\_TABLE\_BLK) does not exist to which the remaining authcode data blocks may be attached.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0647**

Authcode conversion can occur only in conjunction with the BAUT package and not the NAUT package.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS0648**

During conversion, more different class codes were read from storage medium than there is room in the new class code table.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0649**

Attempt to allocate protected data store memory space failed.

**ACTION:** Contact your technical support group.

**SYS0650**

During conversion, two authcodes which contained identical digits were loaded.

**ACTION:** To print the AUB block and check the AUTH codes refer to the *administration input/output guide* and use LD 88.

**SYS0653**

Cannot allocate space for NCTL block which should be split from the ESN data block.

**ACTION:** To print out the NCTL information refer to the *administration input/output guide* and use LD 87.

**SYS0654**

More than one Coordinated Dialing Plan (CDP) list was found on storage medium for the same customer.

**ACTION:** To print out the CDP information refer to the *administration input/output guide* and use LD 87.

**SYS0655**

The index for the TDET block was 0 or greater than the maximum size.

**ACTION:** To print out the RDB and check the TDET prompt refer to the *administration input/output guide* and use LD 21. Reprogram in LD 16 and use LD 43 to datadump. Perform another Sysload.

**SYS0666**

Cannot allocate memory for DCH table of PTRs.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0667 c**

PRA option for customer **c** was turned off because ISA is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS0668 x**

Cannot load data block for DCH **x** when the ISA and/or DTI packages are restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS0669 loop**

Cannot load data block for PRI **loop** when the ISA and/or DTI packages are restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS0670 r c**

Cannot load route **r** for customer **c** when the ISA package is restricted and the route configured to have B channels.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS0671 r c**

SDN option for route **r** in customer **c** is turned off because ISA is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS0672**

The provisioned ROM (QPC717) does not support Expanded Memory.

**ACTION:** Make sure that the QPC717 is a D vintage.

**SYS0673**

The MISC/PS board (QPC709) has been fitted with an improved ROM (QPC717D).

**ACTION:** Information only, no action required.



**SYS0674**

The Meridian ST ROM (QPC717D) with MISC/PC (QPC709C) and the expanded memory boards (QPC814)—MTYP 768 is assumed. Only issued when the configuration record indicates something other than 768.

**ACTION:** Information only, no action required.

**SYS0700 xx**

This message indicates self-test results, and call processing status. **xx** refers to appended numbers that follow the SYS700 message itself. Each set of numbers is associated with a specific call processing or self-test activity. They appear as the activity takes place.

**00** = Begin CP board reset

**01** = Begin SRAM self- test

**02** = ROM created on <date>

**03** = Beginning DRAM self-test  
DRAM being configured

**04** = Booting ROM Operating System

**ACTION:** Information only, no action required.

**SYS0701 xx**

This message indicates self-test results, and call processing status. **xx** refers to appended numbers that follow the SYS701 message itself. Each set of numbers is associated with a specific call processing or self-test activity. They appear as the activity takes place.

**01** = ASIC ICC failure

**02** = SRAM test failure

**03** = CP test failure

**04** = HPM test failure

**05** = PEROM checksum failure

**06** = SRA ASIC failure

**07** = CMB ASIC failure

**08** = BIC ASIC failure

**09** = Duarte test failure

**10** = Time of day clock failure

**11** = No DRAM available

**12** = LCD display test failure

**ACTION:** Replace the CP card by following the instructions in the *Fault Maintenance* and *Fault Clearing Guides*.

**SYS0702 x x x x x x**

DRAM size (in megabytes). Each **x** indicates a bank populated, with a maximum of 6 banks available.

**ACTION:** Information only, no action required.

**SYS0703 xxxx**

Self-tests completed. **xxxx** refers to the test flags. 0FFF indicates that all the tests passed.

**ACTION:** Information only, no action required.

**SYS0704**

Soft reset completed.

**ACTION:** Information only, no action required.

**SYS0705 xx**

This message indicates self-test results, and call processing status. **xx** refers to appended numbers that follow the SYS705 message itself. Each set of numbers is associated with a specific call processing or self-test activity. They appear as the activity takes place.

**00** = CPU speed unknown

**01** = CPU speed less than 25 Mhz

**02** = CPU speed at 25 Mhz

**03** = CPU speed between 25 Mhz and 33 Mhz

**04** = CPU speed at 33 Mhz

**05** = CPU speed between 33 Mhz and 40 Mhz

**06** = CPU speed at 40 Mhz

**07** = CPU speed greater than 40 Mhz

**ACTION:** Information only, no action required.

**SYS0706 xx**

Software full reset, or software warm reset. **xx** refers to the following explanations.

**00** = Low level debugger command to warm start, or unexpected exception or interrupt occurred during early reset sequence

**01** = Hardware sanity timeout (once)

**02** = SWO: failure on switchover

- 03 = SWO: too many switchovers
- 04 = WARM: disk OS warm start failure
- 05 = WARM: too many disk OS warm starts
- 06 = WARM: disk OS not loaded
- 07 = RESET: forced SWO in progress
- 08 = RESET: soft reset in progress
- 09 = TASK: unable to create message queue
- 10 = Protected memory checksum failure
- 11 = INFO: disk OS warm start begins
- 12 = INFO: DRAM is initialized
- 13 = RESET: cannot delete verified task
- 14 = RESET: task threshold exceeded
- 15 = WARM: Exc vector threshold exceeded
- 16 = WARM: Exc total threshold exceeded
- 17 = WARM: Exc handling already busy
- 18 = WARM: Exc restart task failed
- 19 = RESET: manual INIT requested
- 20 = SEG: checksum failure detected
- 21 = SEG: disk OS text segment corrupted
- 22 = SEG: disk OS partitions corrupted
- 23 = DISKOS: unable to load Meridian 1
- 24 = DISKOS: unable to start Meridian 1
- 27 = Bad active IOP is detected
- 28 = Parity error on both sides
- 29 = Parity error on split sides
- 30 = Parity error - remote SIMM is missing
- 31 = Parity error - remote SIMM is disabled
- 41 = OS manual (PDT) request
- 42 = OS request to reboot (sysToMon)
- 43 = OS RST - initialization failed
- 44 = OS SKD - initialization failed
- 45 = OS SWD - initialization failed
- 46 = OS PMEM - initialization failed
- 47 = OS security check failed
- 48 = OS normal recovery from BER

**49** = OS unable to recover from BER

**50** = OS unable to “diskos”

**51** = OS unable to load "diskos"

**52** = OS VOL - initialization failed

**53** = OS SCSI - initialization failed

**54** = OS DOS - initialization failed

**ACTION:** Contact your technical support group.

**SYS0720 x**

Running VxWorks Boot OS. X11 Release **x**.

**ACTION:** Information only, no action required.

**SYS0721**

Cannot access <filename>.

**ACTION:** Contact your technical support group.

**SYS0722 x**

Cannot load <filename> to **x**.

**ACTION:** Contact your technical support group.

**SYS0723 x**

Boot OS restart reason **x**.

**ACTION:** Information only, no action required.

**SYS0724**

Boot OS exception.

**ACTION:** Information only, no action required.

**SYS0800**

Unable to allocate Peripheral Signaling (PS) polling table.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS0802 i t n**

Unable to allocate protected TN block or translator for CMF incoming or outgoing table.

Output: **i** = incoming/o/utgoing, **t** = table number, **n** = level number.

**ACTION:** Contact your technical support group.

**SYS0803**

Unable to allocate protected directory block.

**ACTION:** Contact your technical support group.

**SYS0804**

Unable to allocate protected loop block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0805**

Unable to allocate dial intercom group block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0806**

Unable to allocate protected Flexible Feature Table.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0807**

Unable to allocate protected Radio Paging data for a radio paging system or a translation table entry.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0808**

Unable to allocate memory for Group data link.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0809

Unable to allocate ARS UAC table or schedule block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0810

Unable to allocate 'do not disturb' block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0811

Ext DIG5 block without Basic block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0812

Ext MR block without Basic block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0813

Aux Customer block without Basic block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0814 **ftc c r t n**

FTC class access code table is missing. Where,

**ftc**=Flexible toll and code

**c**= Customer number

**r**= Route number

**r**= AC (FTC access code table)

=QUL (FTC qualify code table)

**n**= 13 (class 1)

=14 (class 2)

= 15 (class 3)

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0815 ftc c r q n**

Code restriction master head table or FTC head table is missing.

**ftc**=Flexible toll and code

**c**= Customer number

**r**= Route number

**q**= FTC qualify code table

**n**= 16 (class 1)

= 17 (class 2)

= 18 (class 3)

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0821**

SYS2 Procedure SETBLOCK: memory block has not been allocated.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0822**

SYS2 Procedure SETUPTNTERMLOOP. Protected group block does not exist. (PGROUPPTR=NIL).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0823**

SYS2 Procedure SETUPTNTERMLOOP. Protected loop block does not exist. (PLOOPOPTR=NIL).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0824

SYS2 Procedure SETUPTN TERM LOOP. Protected loop block exists and the loop is remote.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0825

SYS2 Procedure SETUPTNCARD. Protected card block does not exist. (PCARDPTR=NIL).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0826

Unable to allocate protected DTI block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0827

Unable to allocate protected group block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS0900

Unable to allocate memory for the overlay area.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

## SYS0901 code xxx

Where code is defined as:

**INTR** = Unable to allocate enough memory for the intrinsic xxx.

**PROG** = Unable to allocate enough memory for program xxx.



**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0905**

Unable to transfer program to memory other than page 2.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0910**

Memory map for active memories invalid. Program error.

**ACTION:** Check the full, active memory map in LD 29, use CHG to correct the problem. For further assistance, contact your technical support group.

**SYS0920**

Memory map for active memories invalid. Program error.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS0999 FATAL**

Major alarm (power fail transfer) tripped by software because of insufficient protected memory.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS1000**

Card density greater than loop density.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to check the card density. Use LD 22 CFN to check the loop density. Determine which needs correcting. Use LD 10 or 11 to correct card density and LD 17 to correct loop density.

## SYS1001

Card density less than higher equipped units.

**ACTION:** To check the card and unit density refer to the *administration input/output guide* and use LD 20 TNB. Use LD 10 or LD 11 to correct the card or unit density.

## SYS1002

Card block not found on storage medium for unit block found on storage medium.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS1003

No card block for secondary attendant.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS1004

Customer station group header tables does not exist.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS1005

Not enough protected data store can be allocated for pretranslation.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

## SYS1006

Station group entry number is greater than MAX\_SGRP

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1007**

Pretranslation table number is greater than MAX\_PRXL.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1008**

MFC conversion is not supported for this conversion.

**ACTION:** Information only, no action required.

**SYS1009**

No NLC data exists to load the NLC ARS block.  
(NLC\_ARS\_LOAD).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1010**

The corresponding NLC block does not exist for the NLC ARS block  
(NLC\_ARS\_LOAD).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1011**

No NLC data exists to load the NLC DNL lists. (NLC\_ARS\_LOAD).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1012**

The corresponding NLC block does not exist for the NLC DNL block.  
(NLC\_DNL\_LOAD).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1013 SSTB I/O**

Unable to allocate protected supplementary service tables.

Where, **I/O** = 0 for incoming, 1 for outgoing.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1014 CMF g t n**

MFC conversion for levels greater than 2 are not supported.

Where,

**g**=0 for incoming, 1 for outgoing,

**t**=table number,

**n**=level number.

**ACTION:** Information only, no action required.

**SYS1015**

AUTH data block does not exist.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1016**

SARG number is greater than SARG\_MAX.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1017**

Not enough protected data store can be allocated for SARG block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS1018**

Not enough protected data store can be allocated for AUTH\_PTR table.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS1019**

Not enough protected data store can be allocated for AUTHCODE block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS1020**

Not enough room exists in AUTH\_PTR\_TABLE.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1026**

CMF\_TIE\_PACKAGE not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output* guide and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS1027**

CMF\_DID\_PACKAGE not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output* guide and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS1028

NWK\_PACKAGE not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS1028

Room ID table occurs on tape with non-configured customer number.

**ACTION:** Information only, no action required.

## SYS1056

Unit number of DTD, MFC, MFE out of range.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS1057

MFE package not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS1058

MFE data corruption.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group. For further assistance, contact your technical support group.

## SYS1059

Caller's Name Display: Cannot set up special name table.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check the special name table. For further assistance, contact your technical support group.

**SYS1060**

Caller's Name Display: The average size of the name is not configured.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check MXLN. For further assistance, contact your technical support group.

**SYS1061**

Caller's Name Display: The maximum number of names is not configured.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check MXLN. For further assistance, contact your technical support group.

**SYS1062**

Caller's Name Display: Not enough memory for names.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check the U data and P data. For further assistance, contact your technical support group.

**SYS1063**

Caller's Name Display: No memory reserved for names.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check the U data and P data. For further assistance, contact your technical support group.

**SYS1064**

Caller's Name Display: Cannot find TN for dumped name.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check for the missing TN. For further assistance, contact your technical support group.

**SYS1065**

Caller's Name Display: Name is loaded for TN that has no CND data.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check CND data. For further assistance, contact your technical support group.

**SYS1066**

Caller's Name Display: Corruption during stealing from name pool.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1067**

Caller's Name Display: Trying to dump CND data for nonexistent attendant.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check the CND data. For further assistance, contact your technical support group.

**SYS1068**

Caller's Name Display: Cannot find secondary attendant block.

**ACTION:** Refer to the *administration input/output guide*, use LD 95 to print and then check for missing secondary attendant block. For further assistance, contact your technical support group.

**SYS1069**

Caller's Name Display: Trying to dump a monitored area title for a customer that does not exist.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1070**

Caller's Name Display: Cannot set up display group table.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS1082 adon**

Tape contains VNET package but is missing CR\_ADDON package. Any networking call attempts will fail.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.



**SYS1083**

Digit buffering is not supported and outpulsing rate is reset to 100ms.

**ACTION:** Information only, no action required.

**SYS3000 c**

Customer **c** is missing from Call Park data block. The system cannot load the data block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3001 c**

Cannot build DN because DN information is missing from Call Park block for customer **c**.

**ACTION:** Refer to the *administration input/output guide*, use LD 50 to correct missing DN information.

**SYS3002 c dn**

Cannot build the remainder of the Call Park DNs for Customer **c**. **dn** is failed DN.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3003**

Speed Call list is partially missing.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3004**

Cannot build DN for ESN test maintenance lines.

**ACTION:** Contact your technical support group.

**SYS3005 FATAL**

Conversion was not done properly. Wrong generic/release.

**ACTION:** Check for proper source and target software. If the problem is not corrected contact your technical support group.

**SYS3006**

Conversion flag not set.

**ACTION:** Check for proper source and target software.  
Re-attempt conversion

**SYS3007**

SCC data table is required.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3008**

Card density on storage medium is greater than configured loop density.

**ACTION:** Refer to the *administration input/output guide*, use LD 22 CFN to print and check for correct loop density. Use LD 10, LD 11 or LD 14 to correct.

**SYS3009**

Card density in protected card block does not equal the card density on storage medium.

**ACTION:** Use LD 32 IDC to check the affected card. Use LD 10, LD 11 or LD 14 to correct.

**SYS3010**

Encountered card block with wrong card type.

**ACTION:** Refer to the *administration input/output guide* and use LD 97 FDLC to perform a forced download.

**SYS3011**

The expected number of card records not received from storage medium.

**ACTION:** Try a backup set of software. If the fault does not clear, contact your technical support group.

**SYS3012**

A higher density loop has a lower density card record for upper units.

**ACTION:** Use LD 32 STAT to check card density. Use LD 10, LD 11 or LD 14 to correct the fault.

**SYS3013**

ADM trunk type not supported. Route or trunk data block discarded.

**ACTION:** Information only, no action required.

**SYS3015**

Unable to allocate Protected Data Store (PDS) for set relocation.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3016**

Unable to allocate PDS for history, traffic, or TTY log file buffer.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3017**

Unable to allocate PDS for tone detector block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3018**

File LAST missing from tape list.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3019**

Multiple Programmable Code/DID ranges block found with no location code.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3020**

There is a Multiple Programmable Code and DID ranges block for a location code that does not have a MNXX block defined. MNXXX was allocated anyway.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3021**

The pointer to MNXXX block was not nil (possibly two MNXXX blocks for this location code).

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3022**

There is a Multiple Programmable Code and DID ranges block for a location code but the length is zero.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3024**

Data block can only be loaded when DTI package is selected. On code but the length is zero.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS3025**

Data block can only be loaded when AMP package is selected.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS3026**

Attempt to allocate pds for Tenant Data Block failed.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3027**

Block header customer number too large.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3028**

Block header route number too large.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3029**

Block header tenant number too large.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3030**

Tenant data blocks out of order, presumed missing.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3031**

Essential tenant data blocks are missing, Sysload disabled tenant service.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3032**

Tenant service package restricted but tenant data block detected.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS3034

Tenant service should not be packaged with mini-CDR.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS3035

Digital set data block cannot be loaded when digital set package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS3036

M3000 data block cannot be loaded when M3000 package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS3037

The first part of an atm schedule block was lost.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

## SYS3038

MSI Hardware register fault.

**ACTION:** Replace the MSI card by following the steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

## SYS3039

BG TIME/CATEGORY block without AUX CUST BLK.

**ACTION:** Contact your technical support group.

**SYS3040**

AWU time on the TN has been erased.

**ACTION:** Information only, no action required.

**SYS3041**

SLST package not allowed on SL-1 N machine. Trap is called.

**ACTION:** Have your technical support group contact Northern Telecom Technical Assistance Service to set the SLST package restriction flag.

**SYS3042**

Two supervisors have a NSVC key assigned for this ACD-Dn.

**ACTION:** Refer to the *administration input/output guide* and use LD 11 to correct the key assignment.

**SYS3043**

The ACD NSVC key is assigned to an invalid ACD-DN.

**ACTION:** Refer to the *administration input/output guide* and use LD 11 to correct the key assignment.

**SYS3044**

The ACD NSVC key is assigned to an agent's station.

**ACTION:** Refer to the *administration input/output guide* and use LD 11 to correct the key assignment.

**SYS3045**

The NSVC key is assigned to an illegal DN lamp key.

**ACTION:** Refer to the *administration input/output guide* and use LD 11 to correct the key assignment.

**SYS3046**

Cannot allocate memory space for Speed Call List header table.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3047**

Automatic conversion is not available for a given database. Database on tape is not updated to minimum release.

**ACTION:** Use the correct conversion procedure by following the steps in the *System and Software Upgrade Guide*.

**SYS3048**

Expecting an extension block on tape which is not there.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3049**

An illegal extension block is read by the tape. Block that has been read is not is not an extension of the previous block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3050**

The primary block is missing from the tape. The extension block read from the tape needs a primary block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3051**

Cannot load FTC data block if FTC is not packaged.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS3052**

Cannot get Protected Data Block for Auxiliary Customer Block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3053**

Cannot get Protected Data Block for creating Table 0.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.



**SYS3054**

Mini CDR module is entered when either DNXP or CDRE is present. Mini CDR is not supported when either DNXP or CDRE (or both) are present.

**ACTION:** Information only, no action required.

**SYS3055**

Digital Set Package not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS3056**

Customer ID for given Prexl\_block is out of range.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3057**

Customer data block does not exist for given prexl\_block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3058**

System out of memory. Cannot create storage for prexl\_block because no more PDS available.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS3060 c zz ss**

DN's hundreds group conflict with a shorter hundreds group.

**c** = customer number

**zz** = conflicting hundreds group

**ss** = is the shorter existing group

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3061 c xx yyyy**

This DN's hundreds group conflicts with a different hundreds group within this database.

**c** = customer number

**xx** = conflicting hundreds group

**yyyy** = is the longer existing group

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3062**

Private DN has already been defined as non-private DN line setup fail.

**ACTION:** Information only, no action required.

**SYS3063**

FGD package is restricted; FGD block could not be loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS3064**

FGD block number exceeds length of list allocated.

**ACTION:** Refer to the *ISDN Primary Rate Interface NTP*.

**SYS3065**

Unit number of MFVE receiver not zero or one.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3066**

Unit number of MFR receiver is not zero.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3067**

Can not allocate P\_NKDM\_TABLE for given customer.

Remove unnecessary configuration.

**ACTION:** Contact your technical support group.

**SYS3068**

Fatal error; no space for the conversion program.

**ACTION:** Make sure you are using the correct target software, ROM and memory cards.

**SYS3069**

Fatal error; the conversion program is not on the storage medium.

**ACTION:** Make sure you are using the correct target software, ROM and memory cards.

**SYS3070**

Fatal error, Conversion error: wrong version or wrong storage medium issue

**ACTION:** Make sure you are using the correct target software.

**SYS3071 CPND NAME dn**

A CPND name associated with the given DN was not loaded into memory because it was too long, invalid or there was not enough protected data store available.

**ACTION:** Re-enter the name in LD 95. If there are many of these messages then evaluate the available protected data store.

Change all sets with 'AST' to "NO" on the original software, then convert again. Verify the proper ISM parameters are met.

**SYS3072**

Block index is out of range for given ovflw\_index\_block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3073**

Block index does not correspond with given ovflw\_index\_block.

Block index is within range but it does not match with given ovflw\_index\_block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3074**

Ran out of memory. Cannot allocate PDS for AUTH\_TABLE\_block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS3076**

No more PDS. Cannot allocate PDS for ATM\_Sch\_Blk.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS3077**

No more PDS. Cannot allocate PDS for Cust\_ATM\_MHT block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS3078**

Cust ID out of range. ATM\_Sch\_Blkc customer ID is out-of-range of cDataPtr.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3079**

Customer Data is missing. No customer data exist for given cust ID for ATM\_Sch\_Blkc.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3080**

Hour given is out of range. ATM\_Sch\_Blkc number of hours out of range of 24 hours.

**ACTION:** Refer to the *administration input/output guide* and use LD 21 to check the schedule Use LD 16 to correct out of range of hours.

**SYS3081**

The value of printer is NIL. No ATM\_Sch\_Root\_Ptr exist for given Cust\_ID.

**ACTION:** Refer to the *administration input/output guide* and use LD 21 to check the schedule. Use LD 16 to correct the schedule.

**SYS3082**

No more protected data store. Cannot allocate PDS for ATM\_Sch\_Rovt\_Ent block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS3084**

Unable to allocate head/subhead table block for FGD ANI data.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS3085**

No NPA data block exists to which NXX data block can be attached.

**ACTION:** Use LD 90 to check the Bars/Nars programing.

**SYS3086**

No NXX data block exists to which SUB data block can be attached.

**ACTION:** Use LD 90 to check the Bars/Nars programing.

**SYS3087**

The block number read is greater than the block number expected.

**ACTION:** Contact your technical support group.

**SYS4007**

LLC data block found but feature is not packaged. Data block not loaded into the system.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4009**

Cannot allocate memory for PNI Table.

**ACTION:** To check the U data and P data, refer to the *ISDN Primary Rate Interface NTP*. For further assistance, contact your technical support group.

**SYS4010**

Cannot allocate memory for PNI customer table.

**ACTION:** To check the U data and P data, refer to the *ISDN Primary Rate Interface NTP*. For further assistance, contact your technical support group.

**SYS4011**

Cannot allocate memory for PNI count table.

**ACTION:** To check the U data and P data, refer to the *ISDN Primary Rate Interface NTP*. For further assistance, contact your technical support group.

**SYS4012**

MAX\_DGT\_MAN\_TBLS equal MAX\_DM\_TBLS. The system cannot automatically create a new Home Location Code (HLOC) Digit Manipulation Index. (DMI).

**ACTION:** Use LD 86 and 90 to check the DMI for HLOC and correct if necessary.

**SYS4013**

Patch block error.

**ACTION:** Contact your technical support group.

**SYS4014**

Aries set data block cannot be loaded when Aries set package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4015**

SYS cust number is out-of-range. The cust ID of ICI Table Block is bigger than the size of cDataPtr.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4016**

No customer data block exists for given cust ID, of ICI Table block.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4017**

No protected data store exists to allocate a new ICI table block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4020 Cust c RDB r CMFI t**

INC CMF TBL in non VNET route has been zeroed, where **c** = customer number, **r** = a route number, and **r** = an incoming CMF signalling table associated with the route.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4021 c RDB r ISST t**

ISST TBL in non VNET route has been zeroed, where **c** = customer number, **r** = route number, and **t** = an incoming supplementary service table associated with the route.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4023**

Unable to free unused PS for later PDS use.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4024 x**

**x** 256W chunks of memory are available.

**ACTION:** Information only, no action required.

**SYS4025**

Only top 256 elements of MS were saved when moving STK or adjusting its size.

**ACTION:** Information only, no action required.

**SYS4026**

Only top 256 elements of RAS were saved when moving STK or adjusting its size structures.



**ACTION:** Information only, no action required.

**SYS4033**

Loop block not allocated due to cap limit.

**ACTION:** Information only, no action required.

**SYS4034**

Duplicate clock source option.

**ACTION:** Information only, no action required.

**SYS4035**

Card block not allocated due to cap limit.

**ACTION:** Information only, no action required.

**SYS4036**

Page 5 option set, bug logical Page 509 not on page 5. No memory enhancement performed (XN and L only).

**ACTION:** Check the full, active memory map in LD 29, and use CHG to correct the problem. For further assistance, contact your technical support group.

**SYS4038**

MSM package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4040**

5 or 6 Hunt and Night DN's, and all Display DN's have been removed because the ENP pkg is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4041**

Display DN's are being removed because the customer does not have EDN option selected.

**ACTION:** Refer to the *administration input/output guide* and use LD 21 CDB to check the EDN option.

**SYS4100**

The ICDR data exists on the system tape but the ICDR package is disabled for the software active on the switch. All telephone sets and attendant consoles ICDR options are removed.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4101**

The MCT data exists on the system tape but the MCT packages is disabled for the software active on the switch. MCT options have been reset.

**ACTION:** Check the full, active memory map in LD 29 and use CHG to correct the problem. For further assistance, contact your technical support group.

**SYS4102**

Tape contains Enhanced Hot Line data but EHOT package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4103**

Hot Line Package must exist for EHOT package to be enabled.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4105**

This DN and all following DNs have been removed by Capacity X11 Administration Input/output.

**ACTION:** Information only, no action required.

**SYS4106**

This PSTRN trunk and all following PSTN trunks have been removed by Capacity Administration.

**ACTION:** Information only, no action required.

**SYS4107**

This attendant and all following attendants have been removed by Capacity Administration.

**ACTION:** Information only, no action required.

**SYS4108**

Total number of DNs removed by Capacity Administration.

**ACTION:** Information only, no action required.

**SYS4109**

Total number of PSTN trunks removed by Capacity Administration.

**ACTION:** Information only, no action required.

**SYS4110**

Total number of attendants removed by Capacity Administration.

**ACTION:** Information only, no action required.

**SYS4111**

Pilot DN block exists but tape is not equipped with GPHT package. PDBs are not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4112 nn**

More than 16 logical units cannot be configured. Therefore TTY **nn** is no longer configured.

**ACTION:** Information only, no action required.

**SYS4200**

Network Attendant Service (NAS) schedule block found on disk, but the NAS package is restricted. NAS data was not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4201**

One of NARS, NCOS or BRTE package required by Network Attendant Service (NAS) is restricted. NAS data was not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4202**

Warning: the disk is equipped with Network Attendant Service (NAS) and at least one of Attendant Overflow Position (AOP), Centralized Attendant Service Main (CASM) or CAS Remote (CASR). These packages are mutually exclusive. If the customer is using NAS, the AOP, CASM and CASR packages must be restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4203**

P\_AUX\_CDB is missing for the Network Attendant Service (NAS) schedule block to be loaded. NAS data was not loaded.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4204**

The SDI\_RECORD cannot be loaded or allocated during SYSLOAD.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4205**

Data can only be loaded when PRI2 package is selected.

**ACTION:** Information only, no action required.

#### SYS4206

Data can only be loaded when PRI2, DTI2, BRIT, or BRIL package is selected.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

#### SYS4207 c

No memory block (PDS) for Console Presentation Group (P\_cpg\_data\_blk) during conversion. Attendant parameters for customer **c** are lost.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

#### SYS4209

BKGD Port ID of "IS" changed to its ASCII equivalent "01". This was done because the previously defined BKGD port of "IS" conflicts with a new message type in the Hospitality Voice Services (HVS) feature.

**ACTION:** Continue to use the new port ID or "01", or change it to another valid ID. This error does not inhibit a subsequent data dump.

#### SYS4210 xxx

Where **xxxx** can be one of the following codes: 216 DDSL number exceeds length of list allocated: 563 Bad DPNSS channel block (data is lost).

These codes correspond to SYS216 and SYS563 on SLX systems.

**ACTION:** Contact your technical support group.

#### SYS4211

CPG number is outofrange (1-63).

**ACTION:** To check for the correct CPG number refer to the *administration input/output guide* and use LD 50.

**SYS4212**

Customer number for CPG data block is out-of-range (0-99).

**ACTION:** To check for the correct customer number refer to the *administration input/output guide* and use LD 50.

**SYS4213**

CPG (1-63) data block found but the CPG basic package (CPG\_BAS\_PACKAGE) is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4214**

No Protected Data Store (PDS) to allocate the CPG data block.

**ACTION:** Install more memory if applicable. Use the LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4215**

No Protected Data Store (PDS) to for CPG0 data block at SYS2 wrap up time.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test memory. If memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4216**

The protected CPG pointer block is nil (DNXL module) for a configured customer.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4217**

Customer configured, no CPG0 data block SYS2 will recover with the default values.

**ACTION:** To check the CPG0 data block refer to the *administration input/output guide* and use LD 50.

**SYS4218**

ATL package not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4219**

Cannot find the ACD Block for this Target Table.

**ACTION:** Use LD 23 to check the NACD programming.

**SYS4220**

Invalid DN for this NACD Target Table.

**ACTION:** Use LD 23 to check the NACD programming.

**SYS4221**

Cannot find the ACD Block for this Source Table.

**ACTION:** Use LD 23 to check the NACD programming.

**SYS4222**

Invalid DN for this NACD Source Table

**ACTION:** Use LD 23 to check the NACD programming.

**SYS4223**

Not enough Protected Data Store to set up FSNS pointer block.

**ACTION:** Install more memory if applicable. Use the LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

## **SYS4224**

More than one FSNS XXX block was found for the same customer, index and NPA.

**ACTION:** Check Bars/Nars programming

## **SYS4225**

The FSNS index record header was found to greater than the maximum value which is stored in the ESN data block.

**ACTION:** Check Bars/Nars programming

## **SYS4226**

Missing MCAD\_TABLE entries on FTC conversion. Cadence data will be set to the defaults.

**ACTION:** Contact your technical support group.

## **SYS4227**

Cannot get Protected Data to create a new MCAD ENTRY table. Cadence data will be set to the defaults.

**ACTION:** Contact your technical support group.

## **SYS4257**

On a cold start, this message reports the RLS/ISSUE/DATE/TIME, size in records and sequence number of the DATABASE last used for data dump.

**ACTION:** Information only, no action required.

## **SYS4301**

Aries data block cannot be loaded unless the Aries Package is equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## **SYS4304**

The system has found some corrupted LAPW data

**ACTION:** To print the LAPW data refer to the *administration input/output guide* and use LD 22. If you do not know the secondary password, contact your technical support group.



**SYS4305**

The root pointer is not set. The LAPW data will not be loaded.

**ACTION:** To print the LAPW data refer to the *administration input/output guide* and use LD 22. If you do not know the secondary password, contact your technical support group.

**SYS4306**

The LAPW package is not equipped. The LAPW data will not be loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4307**

PLDN package is not equipped; data has been cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4308**

Bad data encountered while loading DN\_GHBLK.

**ACTION:** Contact your technical support group.

**SYS4309**

Unable to allocate PDS GPHT data block.

**ACTION:** Install more memory if applicable. Use the LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4310**

Bad data encountered while loading SCL\_P\_GHBLK.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4311 l s c u**

The key template for the BCS set at this TN is missing. The data block cannot be loaded.

**ACTION:** The set must be redefined.

**SYS4312**

Attendant Alternative Answering (AAA) and Attendant Forward No Answer (AFNA) are mutually exclusive.

**ACTION:** Information only, no action required.

**SYS4313**

When a disk with IMS data and packages has been dumped to disk, and an IMS package is missing, then two SYS4313 messages are output on SYSLOAD instead of SYS0802.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4314 PR2 loop**

Conversion of PRI2 data block is not provided.

**ACTION:** After conversion check PRI database and re-enter if needed.

**SYS4315**

The Automatic Number Identification package (ANI) package 12 is not equipped. The data has been lost.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4317**

The database on tape is developmental, before the final issue.

**ACTION:** Except for testing, use a standard database.

**SYS4318**

1.5 and 2.0 RPE cannot coexist, 2.0 is removed.

**ACTION:** Information only, no action is required if you use 1.5 RPE. If you use 2.0 RPE, contact your technical support group.

**SYS4319**

No RPE2 package. RPE2 not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4320**

CASM package (26) is not allowed on this machine type.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4321**

CASR package (27) is not allowed on this machine type.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4322**

Dedicated trunks cannot be assigned to an ISA service route.

**ACTION:** Check your database in LD 16 and LD 14.

**SYS4323**

The step flag is turned off. Stepping to an ISA route is not allowed.

**ACTION:** To check the STEP refer to the *administration input/output guide* and use LD 21. Use LD 16 to correct.

**SYS4324**

The step flag is turned off. Stepping to an ISA service route is not allowed.

**ACTION:** To check the STEP refer to the *administration input/output guide* and use LD 21. Use LD 16 to correct.

**SYS4325**

The step flag is turned off. Stepping to a nonexisting route is not allowed.

**ACTION:** To check the STEP refer to the *administration input/output guide* and use LD 21. Use LD 16 to correct.

**SYS4326 I s c**

A card number has been found during SYSLOAD which is out-of-range. Valid card numbers are:

ENET: 1 - 10

Network/DTR card (NT8D18): 0-9 and 15

Network (NT8D04) card: 0-15

**ACTION:** To determine the correct range use LD 32 IDC I or IDC I s c and LD 97 to correct the problem.

**SYS4327**

DO NOT USE LD 43 TO DATADUMP. SYSTEM INFORMATION WILL BE LOST.

This TN is greater than the limit and cannot SYSLOAD.

**ACTION:** Have your technical support group contact Northern Telecom Customer Service for replacement software with expanded limits.

**SYS4328**

DO NOT USE LD 43 TO DATADUMP. SYSTEM INFORMATION WILL BE LOST.

This ACD Agent/Supervisor is greater than the limit and cannot SYSLOAD.

**ACTION:** Have your technical support group contact Northern Telecom Customer Service for replacement software with expanded limits.

**SYS4329**

DO NOT USE LD 43 TO DATADUMP. SYSTEM INFORMATION WILL BE LOST.

This ACD DN is greater than the limit and cannot SYSLOAD.

**ACTION:** Have your technical support group contact Northern Telecom Customer Service for replacement software with expanded limits.

**SYS4330**

DO NOT USE LD 43 TO DATADUMP. SYSTEM INFORMATION WILL BE LOST.

This AST set is greater than the limit and cannot sysload. If you datadump, system information will be lost.

**ACTION:** Have your technical support group contact Northern Telecom Customer Service for replacement software with expanded limits.

Change all sets with 'AST' to "NO" on the original software, then convert again. Verify the proper ISM parameters are met.

**SYS4332**

The IFC type of the ISA service route and the ISA route do not match.

**ACTION:** Refer to *ISDN Primary Rate Interface* NTP.

**SYS4333**

The ISDN package is restricted in this event. You cannot load the DCH number.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4334**

The PRA package is restricted. You cannot load the DCH number.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4335**

The DCH mode is dedicated in the ESL mode, and the ESL package is restricted. You cannot load the DCH number.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4336**

This telephone set is declared incorrectly as an ACD Agent station.

**ACTION:** Correct your database in LD 11.

**SYS4337**

The ACD\_POS\_LST\_PTR for the ACD-DN is not set correctly.

**ACTION:** Contact your technical support group.

**SYS4338** xxxx yyyyyy

ACD Package A is not equipped. The FFC package cannot be loaded.

**xxxx** = FFC type (LILO or NRDY)

**yyyyyy** = FFC that will not be loaded

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4339**

The Virtual Network Service (VNS) data block cannot be loaded.

**ACTION:** Contact your technical support group.

**SYS4340**

Those DNs cannot be built because the DN information is missing from the Virtual Network Services (VNS) data block.

**ACTION:** Contact your technical support group.

**SYS4341**

The rest of those DNs cannot be built because there is no valid Customer Block existing.

**ACTION:** Contact your technical support group.

**SYS4342**

RPA package is not equipped. RPA data lost.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4343**

Nil cust\_no/ffc/rpa\_dn pointer. RPA data lost.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4344**

Corruption in ffc rpa system parameter block; data lost.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4345**

This customer lost the SDAC data because the neither the SUPP nor PRTRANS packages are equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4346**

The ISDN International package is restricted from that operation. The TSYNC data is not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4347 c**

The DN information for customer **c** is missing. The system cannot build a DN in the database.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4348**

The Time Synchronization (TSYNCH) package has been found, but the International ISDN supplemental features are restricted from its use. The TSYNCH data is not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4349 c**

You cannot build a TSYNCH DN, because the DN information for that customer **c** is missing.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4350**

Hospitality IDC tree block not loaded since Hospitality package is unequipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4351**

Hospitality IDC tree block is not loaded.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.



**SYS4352**

Hospitality package is removed since some of the packages it requires are missing.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4353**

Hospitality Authcode block not loaded.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4356**

Mini-CDR is not allowed on the Option 11. The package has been disabled.

**ACTION:** To ensure that all the packages you have ordered are on the cartridge refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the cartridge. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4357**

The Remote Peripheral Equipment (RPE) package is not allowed the Option 11. The package has been disabled.

**ACTION:** To ensure that all the packages you have ordered are on the cartridge refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the cartridge. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4358**

The RPE2 package is not allowed on the Option 11. The package has been disabled.

**ACTION:** To ensure that all the packages you have ordered are on the cartridge refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the cartridge. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4359**

Program type in the program header is invalid.

**ACTION:** Contact your technical support group.

**SYS4360**

Conflicting information found in program header.

**ACTION:** Contact your technical support group.

**SYS4361**

Overlay number in program header is out of range.

**ACTION:** Check to be sure the proper ROM is installed.

**SYS4362**

No program ROM was found.

**ACTION:** Check to be sure the proper ROM is installed.

**SYS4363**

Checksum on program ROM failed.

**ACTION:** Replace the ROM card by following the steps in the *Hardware replacement* guide. After replacing the card verify the fault is cleared.

**SYS4365**

Fatal error: DNXL program not found on the storage medium.

**ACTION:** To ensure that all the packages you have ordered are on the disk, refer to the *administration input/output guide*, use LD 22 PRT, PKG Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4366**

Fatal error: SYS4 program not found on the storage medium. (Please note that SYS4366 is only on the X81 stream at this time.)

**ACTION:** To ensure that all the packages you have ordered are on the disk, refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4367**

Fatal error:

**ACTION:** If packages IDA, DPNSS, and DASS are equipped, the QPC948B ROM must be used. This message will always be given in conjunction with a SYS0088 message.

**SYS4368**

Fatal Error: The DNXL program cannot be found on the storage medium.

**ACTION:** Contact your technical support group.

**SYS4369**

Fatal Error: The SYS4 program cannot be found on the storage medium.

**ACTION:** Contact your technical support group.

**SYS4370**

Fatal Error: You must use QPC948B ROM if any of the following packages are equipped: IDA, DPNSS and DASS.

**ACTION:** Make sure you have installed the correct ROM by following the instructions in the *System and Software Upgrade Guide*.

**SYS4371**

RPA data lost; in proc rpax\_parm\_blk; dnxlptr is nil.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4372**

rpa data lost; in proc rpax\_parm\_blk; rpa\_ffc\_parm\_ptr already exists.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4373**

RPA data lost; in proc rpax\_parm\_blk; not enough memory for rpax parameter blk.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4374**

RPA data lost; in proc rpsys\_head\_blk; rpa\_system\_ptr:  
p\_aux\_cust\_hdr not nil, data already exists.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4375**

RPA data lost; in proc rpsys\_head\_blk, not enough memory for  
rpa\_system\_blk or system parameter block.

**ACTION:** Install more memory if applicable. Use LD 35  
STAT MEM to get the memory status and use MEM xx to test  
the memory. If the memory test fails, replace the memory card by  
following the steps in the *Hardware replacement* guide. For further  
assistance with the commands or system responses refer to the *CED*  
chapter in this guide.

**SYS4376**

RPA data lost; in proc rpsys\_parm\_blk, rpa\_system\_ptr:  
p\_aux\_cust\_hdr is nil.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4377**

RPA data lost; in proc rpsys\_parm\_blk, rpa\_system\_parm\_ptr[ ]:  
sys\_head\_ptr not nil. Data already exists.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4378**

RPA data lost; in proc rpsys\_parm\_blk, not enough memory for rpa  
traffic block.

**ACTION:** Install more memory if applicable. Use LD 35  
STAT MEM to get the memory status and use MEM xx to test  
the memory. If the memory test fails, replace the memory card by  
following the steps in the *Hardware replacement* guide. For further  
assistance with the commands or system responses refer to the *CED*  
chapter in this guide.

**SYS4379**

RPA data lost; in proc rpa\_dnpsa\_tree, not enough memory for rpa dn block or dn-psa block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4380**

RPA data lost; in proc rpa\_dnpsa\_tree, digit should not be 0.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4381**

RPA data lost; in proc rpa\_dnpsa\_tree, result from rpa\_trans is not.rpa\_invalid\_dn

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4382**

RPA data lost; in proc rpa\_trans, dnxlptr is nil or digit\_count > maximum size of digit corruption in dn psa tree.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4383**

RPA data lost; in proc valid\_ffc, wrong data type.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4384**

PGIP and PGSP FFCs will not be rebuilt when loading phase 6.65 and up.

**ACTION:** Information only, no action required.

**SYS4385**

Data block is unusable. It was dumped on an issue prior to 6.67; data lost.

**ACTION:** Try to Sysload on a backup set of software. If the fault continues contact your technical support group.

**SYS4387**

Cannot get pds for the idc name block.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4391**

1.5 Mb/s DTI/PRI pad category table data can only be loaded when GPRI package (167) is equipped.

**ACTION:** Enable package #167 to load 1.5 Mbps DTI/PRI pad category tables. To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4392**

The site IDs in the Flash directories (SCORE and cartridge) do not match.

**ACTION:** This is only a warning and does not affect the system load.

**SYS4393 x**

Flash ROM on device **x** has failed checksum. **x** = 4 indicates cartridge Flash ROM and **x** = 8 indicates SCORE Flash ROM.

**ACTION:** Order and replace the Flash ROM.

**SYS4394 x**

Can not find a directory record on device **x**. **x** = 4 indicates cartridge Flash ROM and **x** = 8 indicates SCORE Flash ROM. If **x** is not shown then system should not load.

**ACTION:** Contact your technical support group.

**SYS4395**

Unable to read a control record.

**ACTION:** Contact your technical support group.

**SYS4397**

Both Flash ROMs failed checksum.

**ACTION:** Contact your technical support group.

**SYS4398**

Flash handler status is not idle.

**ACTION:** Contact your technical support group.

**SYS4399**

The cartridge has failed security check.

**ACTION:** Make sure you have the proper key codes and try again.

**SYS4400**

Could not post-process Digital DPNSS Signaling Link (DDSL).

**ACTION:** Contact your technical support group.

**SYS4401**

Analogue Private Network Switching System (APNSS) TN lost.

**ACTION:** Contact your technical support group.

**SYS4402**

FAXS package is removed because EES package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4405**

AMP package (78) is not allowed on this machine type.

**ACTION:** Information only, no action required.

**SYS4406**

MFC package (128) is not allowed on this machine type.

**ACTION:** Information only, no action required.

**SYS4407**

MFE package (135) is not allowed on this machine type.

**ACTION:** Information only, no action required.

**SYS4408**

L1 package (188) is not allowed on this machine type.

**ACTION:** Information only, no action required.

**SYS4409**

RPA package (187) is not allowed on this machine type.

**ACTION:** Information only, no action required.

**SYS4410**

X25 package (153) is not allowed on this machine type.

**ACTION:** Information only, no action required.

**SYS4411**

Prerequisite package is missing during a sysload with EMCT package. EMCT package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4412 x**

The I/O address of port **x** is the same as a previously built port. Port **x** will be taken out of the configuration record (LD 17).

**ACTION:** Information only, no action required.

**SYS4413**

The number of Logical Terminal IDs has reached the limit. No further LTIDs can be loaded.

**ACTION:** Information only, no action required.

**SYS4414**

Cannot allocate protected storage.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by



following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4415**

Cannot find Digital Subscriber Loop (DSL) data.

**ACTION:** Contact your technical support group.

**SYS4416**

Basic Rate Interface (BRI) package restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4417**

MISP cannot be associated with line card because protected loop data block for the card does not exist.

**ACTION:** Contact your technical support group.

**SYS4418**

MISP cannot be associated with line card because protected card data block for the card does not exist.

**ACTION:** Contact your technical support group.

**SYS4419**

Cannot find USID map.

**ACTION:** Information only, no action required.

**SYS4420 dn**

WARNING: Multiple TNs associated with BRI **dn**.

**ACTION:** Information only, no action required.

**SYS4421**

The number of DSLs has reached the limit. No further DSLs can be loaded.

**ACTION:** Information only, no action required.

## SYS4422

The JDMI package is not support on this machine type.

**ACTION:** Information only, no action required.

## SYS4423 CUST x DN xxxx TN l s c u

During DN translation in sysload, no MARP or more than one MARP was found in the database for **DN nnnn** in customer **x**. Only one MARP should be defined for a DN. The MARP database information for **TN l s c u** has been corrected and a default MARP TN selected for the DN. This corrected database can be saved or altered further by service change before saving with a data dump.

**ACTION:** Use LD 10 or 11 to alter MARP and use LD 43 to save changes to the primary data store.

## SYS4424

Invalid ROM version. Install ROM for X11 Release 18.

**ACTION:** Install the proper ROM by following the instructions in the *System and Software Upgrade Procedure Guide*.

## SYS4425

WARNING: Memory autoconfiguration has occurred. Verify that the installed memory agrees with the tested memory. Adjust MTPY prompt in LD17 if multiple cards are in use. Output:

**MEMORY AUTOCONVERSION**

**MTYP xxxx xxxx xxxx**

**MEMORY MAX ADDRESS IS yyyy**

where,

**xxxx** = memory type configured (768, 1MEG, etc.)

**yyyy** = highest configured address (i.e. 1FFFFFF for 2Meg)

**ACTION:** Information only during an upgrade.

## SYS4426

MSDL/MISP master table does not exist or cannot be allocated.

Output: MSDL/MISP <msdlmisp index in decimal>.

**ACTION:** Contact your technical support group.

## SYS4427

MSDL/MISP index is invalid. Output: SYS4427 MSDL/MISP <msdlmisp index in decimal>.

**ACTION:** Contact your technical support group.

**SYS4428**

MSDL/MISP MSDL\_MISP\_BLOCK does not exist. Output:  
SYS4428 SID BLK <msdlmisp index in decimal>.

**ACTION:** Contact your technical support group.

**SYS4429**

Conv: No memory is available. Can not allocate the phy\_dump\_array structure.

**ACTION:** Make sure you have the proper ROM and memory card installed before you attempt the upgrade.

**SYS4430**

Conv: No memory is available. Can not allocate the p\_async\_block structure.

**ACTION:** Make sure you have the proper ROM and memory card installed before you attempt the upgrade.

**SYS4431**

SYS4431 = Conv: The conversion of ESDI asynchronous data block failed, because the corresponding P\_ASYNC\_BLOCK cannot be found, due to a database corruption.

**ACTION:** Contact your technical support group.

**SYS4432**

Conversion of CSL failed: The ESDI parameter download data block is missing from the database.

**ACTION:** Reload the source software and ensure there are no problems, then dump to the target software.

**SYS4433**

Conversion of CSL failed: The ESDI parameter download data block is not set up for the synchronous mode.

**ACTION:** Correct ESDI for Synchronous mode.

**SYS4434**

Conv: The required entry in DUMP\_CARD\_TYPE structure is not free and is in use by another IO unit. Output:

INDX: <occupied physical address in decimal>

CARD: <card type in decimal. This is the card type occupying

the entry, which we assumed to be free.>

**ACTION:** Contact your technical support group.

**SYS4435**

Conv: The XSM is lost because the SDI data block was not previously created, due to an earlier error.

**ACTION:** Refer to the *administration input/output guide* and use LD 17 to program the XSM.

**SYS4436**

The block PHY\_ARRAY is missing. It must exist and should have been loaded from tape. Therefore this is a database corruption.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4437 SDI x**

The P\_SDI\_BLK\_PTR pointer is nil for the given logical SDI number in decimal. This indicates one of the following:

1. Corruption in the configuration record.
2. Corruption in the P\_SDI\_BLK\_PTR

To be consistent, CONFIGTTYOP is zeroed out for the specific device.

**ACTION:** Contact your technical support group.

**SYS4438**

Corrupt database. Bad card type. Only SDI, SDI2, XSDI, SDI4, DCHI and MSDI cards are allowed for asynchronous I/O. Output:

CARD: <card type in decimal>

SDI: <sdi number in decimal>

**ACTION:** Contact your technical support group.

**SYS4439 SDI x**

The P\_SDI\_BLK\_PTR pointer is nil for the given SDI number in decimal.

This indicates one of the following:

1. Corruption in the configuration record.
2. Corruption in the P\_SDI\_BLK\_PTR

To be consistent, CONFIGTTYOP is zeroed out for the specific device.

**ACTION:** Contact your technical support group.

**SYS4440**

Procedure GET\_PHY\_BLK failed: dev\_no is not valid. Output:

LU TYPE: <logical application type in decimal>

LOG NUM: <logical application number in decimal>

DEV NUM: <physical device number in decimal>

PRIO NUM: <IO polling table priority number in decimal>

OPTION: <optional parameter in decimal>

**ACTION:** Contact your technical support group.

**SYS4441**

Procedure GET\_PHY\_BLK failed: port\_no is not valid. Output:

LU TYPE: <logical application type in decimal>

LOG NUM: <logical application number in decimal>

DEV NUM: <physical device number in decimal>

PRIO NUM: <IO polling table priority number in decimal>

OPTION: <optional parameter in decimal>

**ACTION:** Contact your technical support group.

**SYS4442**

Procedure GET\_PHY\_BLK failed: Too many TTY, printer, DCH, AML or MSDL units. Output:

LU TYPE: <logical application type in decimal>

LOG NUM: <logical application number in decimal>

DEV NUM: <physical device number in decimal>

PRIO NUM: <IO polling table priority number in decimal>

OPTION: <optional parameter in decimal>

**ACTION:** Contact your technical support group.

**SYS4443**

Procedure GET\_PHY\_BLK failed: Undefined logical application type. Output:

LU TYPE: <logical application type in decimal>

LOG NUM: <logical application number in decimal>

DEV NUM: <physical device number in decimal>  
PRIO NUM: <IO polling table priority number in decimal>  
OPTION: <optional parameter in decimal>  
**ACTION:** Contact your technical support group.

**SYS4444**

Procedure GET\_PHY\_BLK failed: Cannot allocate PDS for the physical IO block. Output:  
LU TYPE: <logical application type in decimal>  
LOG NUM: <logical application number in decimal>  
DEV NUM: <physical device number in decimal>  
PRIO NUM: <IO polling table priority number in decimal>  
OPTION: <optional parameter in decimal>  
**ACTION:** Contact your technical support group.

**SYS4445**

Procedure GET\_PHY\_BLK failed: Too many loop devices and serial card devices. Output:  
LU TYPE: <logical application type in decimal>  
LOG NUM: <logical application number in decimal>  
DEV NUM: <physical device number in decimal>  
PRIO NUM: <IO polling table priority number in decimal>  
OPTION: <optional parameter in decimal>  
**ACTION:** Contact your technical support group.

**SYS4446**

Procedure GET\_PHY\_BLK failed: Cannot find the physical IO block previously allocated. Output:  
LU TYPE: <logical application type in decimal>  
LOG NUM: <logical application number in decimal>  
DEV NUM: <physical device number in decimal>  
PRIO NUM: <IO polling table priority number in decimal>  
OPTION: <optional parameter in decimal>  
**ACTION:** Contact your technical support group.

**SYS4447**

Procedure GET\_PHY\_BLK failed: The port is already in use by another application. Output:

LU TYPE: <logical application type in decimal>

LOG NUM: <logical application number in decimal>

DEV NUM: <physical device number in decimal>

PRIO NUM: <IO polling table priority number in decimal>

OPTION: <optional parameter in decimal>

**ACTION:** Contact your technical support group.

**SYS4448**

The MSDL/MISP socket ID data structures do not exist.

**ACTION:** Contact your technical support group.

**SYS4449**

Database corruption. The P\_ESDI\_TBL\_HDR is nil. Output: CSL <esdi number in decimal>.

**ACTION:** Contact your technical support group.

**SYS4450**

Database corruption. The content of pointer P\_ESDI\_BLK\_PTR[ESDI\_PORT\_NO]: P\_ESDI\_TBL\_HDR is nil. Output: CSL <esdi number in decimal>.

**ACTION:** Contact your technical support group.

**SYS4451**

The given AML number is removed from the VAS list belonging to the given VAS number, since the protected AML data block belonging to the given AML number, does not exist. Output: VAS <vas number in decimal>.

**ACTION:** Contact your technical support group.

**SYS4452**

Corruption: The ESDI block number 49 is removed from X11 Release 18. It is not allowed to exist in X11 Release 18 and later, databases. Output: ESDI <esdi number in decimal>.

**ACTION:** Information only, no action required.

**SYS4453**

Corruption: The CSL block number 50 is removed from X11 Release 18. It is not allowed to exist in X11 Release 18 and later, databases.  
Output: AML <aml number in decimal>.

**ACTION:** Information only, no action required.

**SYS4454**

Corruption. The PHY\_BLK\_PNTR is nil. The pointer should point to PHY\_ARRAY and must have been loaded from tape previously. As a result the given AML block is disregarded. Output: AML <aml number in decimal>.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4455 x**

Warning: AML **x** is not loaded because the address is occupied by a previously loaded device. X11 Release 17 and earlier can configure an unused ESDI AML on top of an existing port. X11 Release 18 and later removes the unused ESDI.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4456**

The logical IO table header for csl\_log\_appli type for the given logical AML number cannot be set up. As a result the given AML block is disregarded. Output: AML <aml number in decimal>.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4457**

The X25 block type (i.e., block 75) is no longer supported. Output: X25 <X25 number (i.e., esdi number) in decimal>.

**ACTION:** Information only, no action required.

**SYS4458**

The logical master head IO tables cannot be allocated due to lack of memory. As a result the given DCH block is disregarded. Output: DCH <dch number in decimal>.



**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4459**

The AML number is out of range. Output: AML <aml number in decimal>.

**ACTION:** Use LD 22 to check the configuration record.

**SYS4460**

The SDI number is out of range. Output: SDI <sdi number id decimal>.

**ACTION:** Use LD 22 to check the configuration record.

**SYS4461**

WARNING: Since the physical dump array block is not loaded from tape then it is created blindly. The reasons that the block is missing from tape are:

1. Conversion from Release 17 to 18 failed.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

2. The tape has only the minimum database, that is, only the configuration record and no other datablocks. This last case is not a database conversion or loading corruption and is normal.

**ACTION:** Information only, no action required.

**SYS4462**

Failed to allocate memory for logical master head I/O table, or failed to allocate memory for the physical DUMP\_CARD\_TYPE structures.

**ACTION:** Check for the proper ROM or install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4463**

Failed to allocate memory for P\_ASYNC\_BLOCK structure. Output: INDX: <sdi number in decimal>.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4464**

The asynchronous application type is not allowed on the ESDI card type starting from RLS 18. Output: INDX: <sdi number in decimal>.

**ACTION:** Information only, no action required.

**SYS4465**

Warning: Since the card type for the given SDI application type was bad, the memory previously allocated for the given SDI application type, is released. Output: INDX: <sdi number in decimal>.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4466**

Warning: Since user types are defined but their logical SDI data structures do not exist, due to a corruption, the user types are cleared from the configuration record data structure. Output: INDX: <sdi number in decimal>.

**ACTION:** Contact your technical support group.

**SYS4467 XSDI**

Block type number 93 is no longer supported starting from X11 Release 18.

**ACTION:** Information only, no action required.

**SYS4468 XSDI**

Out of PDS to allocate SDI\_MHT\_BLK block type.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test memory. If memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4469**

The History File cannot be allocated, because of package restriction, or because there is no more space in the IO polling table.

**ACTION:** Contact your technical support group.

**SYS4470**

ISM limit for the D-channel is reached. The total D-channels configured on the existing database, is more than the number the customer is allowed to have. Output: DCH <dch number in decimal>.

**ACTION:** Information only. Check ISM parameters in LD 22 REQ SLT.

**SYS4471**

ISM limit for the AML is reached. The total AML links configured on the existing database, is more than the number the customer is allowed to have. Output: AML <aml number in decimal>.

**ACTION:** Information only. Check ISM parameters in LD 22 REQ SLT.

**SYS4472**

Both MSDL and BRI packages are restricted, so the data associated with the MSDL or MISP cards is not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4473**

The block type\_sid\_blk (#104) cannot be loaded because MSDL package 222 is restricted. Output: SID BLK <msdlmisp index in decimal>.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4474**

Corrupt database. Bad card type. Only DCHI and MSDL cards are allowed for DCH links. Output:

CARD: <card type in decimal>

DCHI <dch number in decimal>

**ACTION:** Contact your technical support group.

**SYS4475**

Corrupt database. Bad card type. Only ESDI and MSDL cards are allowed for AML links. Output:

CARD: <card type in decimal>

AML <aml number in decimal>

**ACTION:** Contact your technical support group.

**SYS4476**

FPN package not equipped, cannot load DTAD data.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4477**

FC68 package 223, and Japan Trunk package 97, are mutually exclusive. FC68 package is turned off automatically.

**ACTION:** Information only, no action required.

**SYS4478**

TN is thrown out because the size of the protected TN block has exceeded 255 words.

**ACTION:** Information only, no action required.

**SYS4479**

Fatal error: The SYSP program cannot be found on the storage medium.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4480**

Cannot allocate memory for a group I/O table.

**ACTION:** Contact your technical support group.

**SYS4481**

The Network Call Pickup package has been restricted because some or all of its prerequisite packages are not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4488**

WARNING: the ARDL package (#304) and the OPAO package (#104) are mutually exclusive. ARDL package is turned off automatically.

**ACTION:** Contact your technical support group.

**SYS4500 x**

Skipping slot **x**. Cannot calculate address to check for CP with cable.

**ACTION:** Contact your technical support group.

**SYS4501 x**

Skipping slot **x**. Cannot get card ID.

**ACTION:** Contact your technical support group.

**SYS4502**

Timeout waiting for response from remote CP. Check that both CPs have the same number of SIMMs.

**ACTION:** Information only, no action required.

**SYS4503**

Remote processor is not CP. Be sure remote processor is CP.

**ACTION:** Contact your technical support group.

**SYS4504**

CP redundancy impossible. No CP to CP cable.

**ACTION:** Check to ensure cables are attached. If cables are attached remove them and check for bent pins.

**SYS4505**

CP redundancy impossible. There is no remote power.

**ACTION:** Check the CE power supply on the remote Core module. Make sure the CP to CP cable is properly connected.

**SYS4506**

CP redundancy impossible. Both shelves have the same ID.

**ACTION:** Set the JB4 jumper on the backplane so both sides do not match.

**SYS4507**

CP redundancy impossible. Both switches are in MAINT.

**ACTION:** Check that at least one of the CP Norm/Maint switches is in Norm mode (up).

**SYS4508**

CP single mode: could not synchronize CSA space.

**ACTION:** Contact your technical support group.

**SYS4509**

Could not set CP semaphore bit (side x).

**ACTION:** Contact your technical support group.

**SYS4510**

CP single mode: memory shadow test failed.

**ACTION:** Reseat the standby CP and use SHDW in LD 135 to restore redundancy. If redundancy cannot be restored, replace the CP card by following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**SYS4511 x**

Cannot open BIC window (slot x). Cannot check for CP cable.

**ACTION:** Contact your technical support group.

**SYS4512 x**

Cannot close BIC window (slot **x**).

**ACTION:** Contact your technical support group.

**SYS4513 x**

Could not get CP semaphore bit (side **x**).

**ACTION:** Contact your technical support group.

**SYS4514 x**

Skipping slot **x**, cannot calculate address to see if CP bit is set.

**ACTION:** Contact your technical support group.

**SYS4515**

Unable to find the active CMDU.

**ACTION:** Unseat and reseat the IOP and CMDU cards and then reload.

**SYS4516**

Unable to find the diskos.sym file.

**ACTION:** Contact your technical support group.

**SYS4517 x**

Switching from CPU **x** to preferred side.

**ACTION:** Information only, no action required.

**SYS4520**

Cannot get available memory for SL-1 Memory Control from Memory management. Sysload fails due to lack of memory.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4521**

Cannot turn on memory protection. Input address is invalid.

**ACTION:** Contact your technical support group.

**SYS4522**

Cannot turn off memory protection. Input address is invalid.

**ACTION:** Contact your technical support group.

**SYS4523** yyyy mm dd hh mm ss

HD0 Database datadumped yyyy/mm/dd hh:mm:ss.

**ACTION:** Information only, no action required.

**SYS4525** yyyy mm dd hh mm ss

HD0 Database datadumped yyyy/mm/dd hh:mm:ss.

**ACTION:** Information only, no action required.

**SYS4527** iiii dd/mm/yyyy hh:mm:ss rr

This message refers to the X11 Release and issue **iiii**, date and time **dd/mm/yyyy hh:mm:ss** and size **rr** of the database to be sysloaded.

The date and time indicate when the file was last written.

**ACTION:** Information only, no action required.

**SYS4528** yyyy mm dd hh mm ss

HD Database datadumped yyyy/mm/dd hh:mm:ss.

**ACTION:** Information only, no action required.

**SYS4529** yyyy mm dd hh mm ss

FD0 Database datadumped yyyy/mm/dd hh:mm:ss.

**ACTION:** Information only, no action required.

**SYS4530** yyyy mm dd hh mm ss

FD1 Database datadumped yyyy/mm/dd hh:mm:ss.

**ACTION:** Information only, no action required.

**SYS4531**

During conversion, XTD and/or RDB DFQ has been changed to XTDT.

**ACTION:** Use LD 97, LD 20 and LD 21 to ensure that configuration is as desired for XTD operation.

**SYS4532**

The CPSI entry cannot be allocated; the limit for SIO devices has been reached.

**ACTION:** Information only, no action required.

**SYS4533**

Cannot allocate protected data store for XTD Table.



**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test memory. If memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4534**

Warning: IEN package or SACP package not equipped.  
Configured IEN ICI keys are removed. Procedure REMOVE\_IEN\_ICI (module SYSP).

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4535**

Warning: IEN Block Timer is reset to its default value because SACP or NAS package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4538**

Inconsistencies in boundaries of previous sl1 load.

**ACTION:** Contact your technical support group.

**SYS4539**

Inconsistencies in boundaries of previous ovl load.

**ACTION:** Contact your technical support group.

**SYS4540**

Error loading SL-1 file into memory.

**ACTION:** Contact your technical support group.

**SYS4541**

Error loading Overlay file into memory.

**ACTION:** Contact your technical support group.

**SYS4542**

Error in loading, last address <n>.

**ACTION:** Contact your technical support group.

**SYS4543**

Error returned from segInit2<n>.

**ACTION:** Contact your technical support group.

**SYS4544**

Error getting dloPathFileName for ovlres.

**ACTION:** Reinstall software from installation disks and reload the system.

**SYS4545**

Unable to open <file name>.

**ACTION:** Reinstall software from installation disks and reload the system.

**SYS4546**

Error sl1\_start\_addr <n>, last sl1\_prot\_address <x>.

**ACTION:** Contact your technical support group.

**SYS4547**

Error initializing SL-1 pool and data area.

**ACTION:** Contact your technical support group.

**SYS4548**

Error getting dloPathFileName for ovlres.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4549**

Unable to open <file name>.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4550**

Error in loading, last SL-1 address <n>.

**ACTION:** Contact your technical support group.

**SYS4551**

Overlay start address <n> overlaps end of SL-1 area <x>.

**ACTION:** Contact your technical support group.

**SYS4552**

Error ovl\_start\_addr <n>, last\_ovl\_prot\_addr <x>.

**ACTION:** Contact your technical support group.

**SYS4553**

Error initializing Overlay data area.

**ACTION:** Contact your technical support group.

**SYS4554**

Error calling ovlres entry.

**ACTION:** Contact your technical support group.

**SYS4555**

Invalid parameter to ldrNextPage, address <n>.

**ACTION:** Contact your technical support group.

**SYS4556**

Seek error while loading (OVL or INSTALL) code file.

**ACTION:** Reload the system using backup software. If the fault still exists contact your technical support group.

**SYS4557**

Error reading a\_out header from file (OVL or INSTALL).

**ACTION:** Reinstall software from installation disks and reload the system.

**SYS4558**

Invalid a\_out header in file.

**ACTION:** Contact your technical support group.

**SYS4559**

Error reading link header.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4560**

Invalid link header in file.

**ACTION:** Contact your technical support group.

**SYS4561**

Module not linked to page boundary.

**ACTION:** Contact your technical support group.

**SYS4562**

Seek error while loading (OVL or INSTALL) code file.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4563**

Error reading a\_out header into memory (OVL or INSTALL).

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4564**

Error reading text segment from disk into memory (OVL or INSTALL)

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4565**

Error reading data segment from disk into memory (OVL or INSTALL).

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4566**

Seek error while loading SL-1 code.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4567**

Error reading a\_out file from SL-1 file.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4568**

Invalid a\_out header in SL-1 file.

**ACTION:** Contact your technical support group.

**SYS4569**

Error reading link header from file.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4570**

Invalid link header in file.

**ACTION:** Contact your technical support group.

**SYS4571**

Module not linked to page boundary.

**ACTION:** Contact your technical support group.

**SYS4572**

Seek error while loading code.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4573**

Error reading a\_out header from disk into memory.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4574**

Error reading text segment from disk into memory.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4575**

Invalid data segment in SL-1 module.

**ACTION:** Contact your technical support group.

**SYS4576**

Error access in code file.

**ACTION:** Reinstall the software from the installation disks and reload the system.

**SYS4577**

Error reading data segment from disk into memory.

**ACTION:** Reload the system by pressing the Manual Reload button.

**SYS4578**

Invalid a\_out header in memory (OVL or INSTALL).

**ACTION:** Contact your technical support group.

**SYS4579**

Invalid link header in memory (OVL or INSTALL).

**ACTION:** Contact your technical support group.

**SYS4580**

End of Protected data = x (OVL or INSTALL).

**ACTION:** Contact your technical support group.

**SYS4581**

Unprotected data start x overlaps Unprotected data end at y (OVL or INSTALL).

**ACTION:** Contact your technical support group.

**SYS4582**

Error copying data from Protected memory to Unprotected memory for static modules.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4583**

Invalid a\_out header in memory.

**ACTION:** Contact your technical support group.

**SYS4584**

Invalid link header in memory.

**ACTION:** Contact your technical support group.

**SYS4585 x**

End of Protected data = x.

**ACTION:** Contact your technical support group.

**SYS4586 x y**

Unprotected data start x overlaps Protected data end at y.

**ACTION:** Contact your technical support group.

**SYS4587**

Error copying data from Protected memory to Unprotected memory for SL-1 modules.

**ACTION:** Reload the system using the backup software, as the primary software may be corrupted. If the fault persists, contact your technical support group.

**SYS4588**

Feature Group D not allowed on Option 11 machine. Package 158 has been disabled.

**ACTION:** Information only, no action required.

**SYS4589**

Customer n has DITI = YES in LD 15 but the DID to TIE package (176) is equipped, DID to TIE calls will be restricted by the DID to TIE package.

**ACTION:** Have your technical support group contact Northern Telecom Technical Assistance Service to set the DID to TIE package restriction flag. You can use LD 22 PRT, PKGxxx to check the restricted status of the package.

**SYS4590**

BRIT package restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4592**

BRIL package restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4593**

Either the BRIL or the BRIT package needs to be equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22

PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4594**

BRIL application will not be configured on any MISP because the BRIL package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4595**

BRIT application will not be configured on any MISP because the BRIT package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4596 xx yy**

PEMD data in the route datablock was erased due to PEMD package restriction.

**xx** = customer number

**yy** = route number

**ACTION:** Contact your technical support group.

**SYS4600**

The DTI package is restricted and either the BRIT package is restricted or the DTI2 package is equipped or the PRI2 package is equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.



**SYS4601**

M911 package is restricted, therefore NPID block cannot be loaded in memory.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4602**

NPID block exceeds length of block allocated.

**ACTION:** Refer to ISDN Primary Rate Interface NTP.

**SYS4605 xx**

SICA Table **xx** is erased due to PEMD package restriction.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4606 x**

That CDR Link port has been removed.

**x** = port number

**ACTION:** Information only, no action required.

**SYS4607 x**

That Low Speed Link port has been removed.

**x** = port number.

**ACTION:** Information only, no action required.

**SYS4608**

The port allocated for STA is being used by another application.

**ACTION:** To check the Single Terminal Access port refer to the *administration input/output guide* and use LD 22. Use LD 17 to correct.

**SYS4609**

STA logical number is out-of-range.

**ACTION:** To check the Single Terminal Access port refer to the *administration input/output guide* use LD 22. Use LD 17 to correct.

## **SYS4610**

STA logical number is out-of-range.

**ACTION:** Contact your technical support group.

## **SYS4613**

Protected loop block does not exist.

**ACTION:** Contact your technical support group.

## **SYS4614**

Cannot update card pointers to BRSC data block because card data blocks exist.

**ACTION:** Contact your technical support group.

## **SYS4615**

Cannot associate BRSC with line card because protected card data block does not exist.

**ACTION:** Contact your technical support group.

## **SYS4616 xxxx yyyy**

Unable to allocate protected data storage for DCH call reference table.

**xxxx** = mnemonic of feature affected

**yyyy** = name of data structure affected

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

## **SYS4617**

Unable to allocate protected data storage for limited access to overlays (LAPW). The LAPW package has been restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4620**

Attendant Blocking of DN cannot be enabled because Semi-Automatic Camp-On is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4621 s**

s Kwords of expanded memory have been auto-configured. MTYP prompt in LD 17 has been updated. This message will only occur on a new system installation.

**ACTION:** No action required. This is the standard message for the auto-installation of expanded memory.

**SYS4623**

IPRA package is restricted, but there is an international interface. The interface cannot be enabled with the current software packaging.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4624**

The number of Meridian 1 Packet Handler Digital Subscriber Loops (DSLs) reached the limit. No further MPH DSLs can be sysloaded.

**ACTION:** Information only, no action required.

**SYS4625**

B-channel TN not in MPH loop data block.

**ACTION:** Contact your technical support group.

**SYS4626**

LAPB data block does not exist.

**ACTION:** Contact your technical support group.

**SYS4627**

X25P data block does not exist.

**ACTION:** Contact your technical support group.

## SYS4628

Resident code is compressed, but the decoding table does not exist.

**ACTION:** Contact your technical support group.

## SYS4629

Meridian 1 Packet Handler (MPH) package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS4630

The MPH application cannot be configured on an MISP because the MPH package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS4631

KD3 Package unequipped - Data is discarded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS4632

MFK5/MFK6 data corruption.

**ACTION:** Contact your technical support group.

## SYS4633 n

Cannot load data block for PRI loop **n** when INBD package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4634 n**

Backup D-channel **n** is not loaded for this interface.

**ACTION:** Information only, no action required.

**SYS4635**

Cannot allocate Protected Data Store for AOC parsing tables.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4636**

The Voice Mailbox Administration data block exists without the feature configured.

**ACTION:** Contact your technical support group.

**SYS4637**

The Voice Mailbox Administration data block contains invalid TNs.

**ACTION:** Contact your technical support group.

**SYS4638**

There is no memory available to build the Voice Mailbox data block.

**ACTION:** Contact your technical support group.

**SYS4639**

Voice Mailbox data exists without the feature package configured. The mailbox data has been discarded.

**ACTION:** Contact your technical support group.

**SYS4640**

Voice Mailbox Administration application data exists with the feature package restricted. The application data is discarded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4641**

Superloops 32, 36, 40, 48 have been added to the configuration. This only occurs when upgrading to the Option 11E CPU and these loops do not already exist.

**ACTION:** No action required. Standard message for the auto-configuration of superloop data.

**SYS4642**

Superloops 32, 36, 40, 48 have NOT been added to the configuration. This message only occurs when upgrading to the Option 11E CPU and one of these loops is already configured.

**ACTION:** Check that the configuration is as desired. If a third box is being added to the system then Superloops 32, 36, 40, and 48 must exist.

**SYS4643**

M2317 data block cannot be loaded when package is not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4645**

Only one of the language packages may be equipped. The MLMS feature has been disabled (Option 61C/81 only).

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4646**

Mismatch between language pkg read at cold start and during SYSLOAD (Option 61C/81 only).

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4647**

The MLMS language packages is allowed on Option 61C/81 systems only. The packages were disabled.

**ACTION:** Information only, no action required.

**SYS4648 III**

Phantom loop **III** is found, but the PHTN package is restricted. Phantom loop **III** is not loaded. All phantom TNs configured on this loop will not be loaded and existing SYS messages will be given.

**OUTPUT:** **III** = phantom loop

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4649**

MCT data exists without the MCT package. The data is cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4650**

SCDR data exists without the SCDR package. The data is cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4651**

CDR link and the MCT packages are mutually exclusive. The CDR link package is turned off.

**ACTION:** Information only, no action required.

**SYS4653**

A BCS Phantom loop is found, but either the phantom or csl package is not equipped.

**ACTION:** Remove the loop and all associated data. Refer to the *administration input/output guide* and use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4654**

Procedure SAMM\_PBX\_SRVR Standalone Meridian Mail server not loaded - out of PDATA

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4655**

Procedure SAMM\_PBX\_SRVR. Too many Standalone Meridian Mail servers loaded, not included in the table, TN not loaded.

**ACTION:** Contact your technical support group.

**SYS4656**

Cannot allocate protected data store for xpec. This error message will be called from new proc SETUP\_INIT\_XPEC in MODULE SYS4XXX.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS4657**

Warning. Existing CIST data are removed because CIST package 221 is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22



PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4658**

Existing ACRL data is removed because the ACRL package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4663**

TN 0 0 0 0 is not valid. TN is rejected.

**ACTION:** This is not a problem. Call your technical support group to have the TN removed.

**SYS4664**

LAPW password nn is removed because it is a Set Based Administration password and the ADMINSET package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4665**

Set Based Administration logon limits are set to zero because the ADMINSET package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4666**

The ADMINSET package is equipped, but one of its dependant packages (FFC package, LAPW package, Multi-User package) is restricted. Set Based Administration login limits are set to zero.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4667**

On sysload, CCB data exists, but the CCB package is restricted. CCB data is cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4668**

Call Pickup Network Wide cannot be loaded as ISDN package 145 is restricted.

**ACTION:** Load with the ISDN package equipped.

**SYS4669**

The DPNSS\_ES package is equipped, but the DPNSS package is not. Since DPNSS is a pre-requisite for DPNSS\_ES, DPNSS\_ES is forced unequipped.

**ACTION:** Refer to the *administration input/output guide*, use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4679**

CAC defined for BCS, PBX or route exceeds the CIS maximum range for CAC (9). CAC is set to CIS default value for CAC (3).

**ACTION:** Contact your technical support group.

**SYS4690**

China Attendant Monitor Package (CHINA) package 285 is not equipped but the Attendant Monitor option is allowed, then the options are reset to disable the China Attendant Monitor feature.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22

PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4691**

BTD package is not equipped, the BTD tables have been removed.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4692**

Unable to allocate protected memory for BTD Table 0.

**ACTION:** Contact your technical support group.

**SYS4693**

IDC package is removed since NFRC package is missing.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4694 cc rr**

Due to unequipped IDC package, IDC data has been lost in customer **cc** or IDC data has been lost in Route **rr** of Customer **cc**.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4695**

The mnemonic, filter and exception tables have been removed.

NOTE: Their functionality has been replaced by the new Event Default and Preference Tables for Option 81 switches.

**ACTION:** Information only, no action required.

## SYS4698

If package 46 is not equipped and the feature is, it indicates that package 46 is not equipped and that the TMAR bit for customer y is cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS4699

WARNING: Existing ARDL data is reset to its default values, because ARDL package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS4700

A Secondary Call Park Block has been discarded due to CPRKNET package missing.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS4701

Customer Call Park option changed from CPN to CPA due to CPRKNET package missing.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS4702

A Secondary Call Park Block has been discarded since the customer does not have a Primary Call Park Block.

**ACTION:** Contact your technical support group.

**SYS4707 x**

Removing TAT entry in RCAP since TAT package is not equipped, where **x** = D-channel number.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4708 x**

Removing TAT database from D-channel that does not reside on the MSDL card, where **x** = D-channel number.

**ACTION:**

**SYS4712**

PTU or MFC package not equipped; PTU data cleared in customer data block. Equip PTU and MFC packages and reload if PTU is required.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4713**

PTU or MFC package not equipped; PTU data cleared in route data block. Equip PTU and MFC packages and reload if PTU is required.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4714 cust table-number**

PTU and MFC packages are not equipped. PTU data cleared in incoming R2MF table.

**ACTION:** Equip PTU and MFC packages and reload if PTU is required.

## **SYS4716**

The VDN block cannot be loaded during SYSLOAD. The VNS database cannot be restored.

**ACTION:** Redefine the VDN data block.

## **SYS4717**

The ARDL package (#304) and the OPOA package (#104) are mutually exclusive. ARDL package is automatically turned off.

**ACTION:** Contact your technical support group.

## **SYS4718**

Cannot load EuroISDN Network Mode data when Master Mode package is restricted.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software

## **SYS4719 table-number**

PTU and MFS packages are not equipped. PTU data cleared in outgoing R2MF table.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software

## **SYS4720**

Either the Speed Call or System Speed Call package is restricted and the data exists.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## **SYS4722**

Customer Call Park data is lost due to Call Park database memory allocation problems.

**ACTION:** Contact your technical support group.

**SYS4723**

Customer option is changed to CPD due to Call Park database memory allocation problem.

**ACTION:** Contact your technical support group.

**SYS4729 xx**

xx = %DNIS MMCS informations were found and MMCSS package is restricted, the fields are set to default value INDGT, PRDL, INDI, DTIM, DIG#, DIIE.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS4751**

The keys in this phone set are removed at the end since they exceed capacity (see SYS4750 for more). User may need to reconfigure the keys on this set. The phone set will not be taken out of service.

**ACTION:** Since some keys are lost at the end, use the overlay and reconfigure the keys if necessary.

**SYS5714**

Cannot allocate protected data store for XTD Table.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory.

If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide

**SYS6692 x1**

x1 = %Invalid input when the MMCS package is not equipped

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS6693 x2**

x2 = %DTM should be defined to have PRDL=DNIS.

## SYS8980

Data block can only be loaded when STIE package is equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS8981

ICP Package not equipped.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS8982

Attempt to write a protected bit field for a specific bit offset and bit width which do not fit in a 16 bit word.

**ACTION:** Contact your technical support group.

## SYS8983

CLED package not equipped, data cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS8984

Digital console package not equipped, data cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

## SYS8985

FFC code corruption.

**ACTION:** Contact your technical support group.



**SYS8986**

Flexible Feature Code is out of Protected Data (PDATA) storage.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS8987**

FFC customer pointer is missing. The FFCs are not ready.

**ACTION:** Contact your technical support group.

**SYS8988**

FFC package (139) is not equipped. FFCs have been removed.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS8989**

Package not equipped, FFC will not be loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS8990**

OPCB package not equipped, data cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS8991**

Supp package not equipped, special service list data cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22

PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS8992**

MPO package is restricted but MPO data is found. MPO data is cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS8993**

DTI2 - DTI2 package not equipped, data cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS8994**

DTI2 - JDMI package not equipped, data cleared.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS8995**

ART head table not found, data lost.

**ACTION:** Contact your technical support group.

**SYS8996**

Unable to allocate protected data store for TBAR.

**ACTION:** Install more memory if applicable. Use LD 35 STAT MEM to get the memory status and use MEM xx to test the memory. If the memory test fails, replace the memory card by following the steps in the *Hardware replacement* guide. For further assistance with the commands or system responses refer to the *CED* chapter in this guide.

**SYS8997**

Duplicate Art number found, date lost.

**ACTION:** Contact your technical support group.

**SYS8998**

ART number out of range, data lost.

**ACTION:** Contact your technical support group.

**SYS8999**

TBAR package not equipped, data not loaded.

**ACTION:** To ensure that all the packages you have ordered are on the disk refer to the *administration input/output guide* and use LD 22 PRT, PKG. Check to ensure that there are no extra packages on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software.

**SYS9026**

DPNSS1 MWI: an NSI table cannot be restored.

**ACTION:** Redefine the MWI NSI table.

**SYS9028**

System is not ESA packaged. ESA data has been discarded.

**ACTION:** Contact your technical support group.

**SYS9029**

ESA data is for an undefined customer. ESA data has been discarded.

**ACTION:** Contact your technical support group.

**SYS9030**

System is not ESA\_CLMP packaged. ESA\_APDN has been reset to YES.

**ACTION:** Contact your distributor if the system packaging is incorrect.

**SYS9031**

Invalid DFCL configuration is encountered in the ESA block. DFCL has been reset to null.

**ACTION:** Contact your distributor if the system packaging is incorrect.

## **SYS9032**

NI-2 CBC package not equipped. NI-2 CBC data lost.

**ACTION:** Install NI-2 CBC package.

## **SYS9033**

Diversion remote capability is removed since the QSIG-SS package is restricted.

**ACTION:** Enable the QSIG-SS package and Sysload the system again.

## **SYS9034**

The RCAP MQC is removed because the MEET package is restricted.

**ACTION:** Contact your technical support group.

## **SYS9037**

Customer has configured a RAN route with data requesting the RAN broadcast package but RAN broadcast package restricted. Broadcast capability removed from route, ringback tone provided while waiting and new RAN machine types changed.

**ACTION:** Enable RAN Broadcast package. DO NOT DATADUMP, system information will be lost.

## **SYS9038**

Number of broadcasting routes exceeds ISM limit. Broadcast capability removed from route.

**ACTION:** Customer must contact distributor to increase ISM limit. DO NOT DATADUMP, system information will be lost.

## **SYS9039**

Number of broadcast RAN connections exceeds ISM limit.

**ACTION:** Customer must contact distributor to increase ISM limit. DO NOT DATADUMP, system information will be lost.

## **SYS9040**

Customer has broadcasting music route configured but music Broadcast package restricted.

**ACTION:** Enable music Broadcast package. DO NOT DATADUMP, system information will be lost.

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## SYS – System Loader

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**SYS9071**

ERDN datas ('Redundancy for ethernet on Core feature) have been discarded due to MMCS package restriction.

**ACTION:** For ERDN feature, MMCS package #317 is required. Contact your technical support group.

**SYS9072**

CTMO data (CDN time-out) has been cleared due to MMCS package restrictions.

**ACTION:** For CTMO, MMCS package #317 is required. Contact your technical support group. 

**SYS9115**

Unable to allocate protected memory for ANI block or ANI Table. Some ANI Entries could be lost.

**ACTION:** Action: User Overlay 21 to print the ANI Entries. Try to configure the entries that are needed, or contact your technical support.

**SYS9117**

Taiwan R1 data in RDB but package is off. Data is lost.

**ACTION:** Action: Equip TWR1 package and reload. Contact your technical support group.

**SYS9118**

Taiwan R1 data in the trunk data block but the package is off. Data is lost.

**ACTION:** Action: Equip TWR1 package and reload. Contact your technical support group.

**SYS9120**

The QSIG call transfer remote capability is removed during the sysload since the QSIG-SS package is restricted.

**ACTION:** Action: Equip the package #316 and sysload a second time. Reconfigure RCAP to ETI or CTO.

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**SYS — System Loader**

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**SYS9123**

Unable to allocate memory for the access prefix block or access prefix table.

**ACTION:** Action: A memory fault must be cleared or more memory must be equipped.

**SYS9124**

Access prefix data cannot be loaded as ISDN package #145 is restricted.

**ACTION:** Action: Feature DAPC is part of the ISDN package #145.

**SYS9125**

The ACLI package is not equipped.

**ACTION:** Action: Equip the ACLI package.

**SYS9126**

System is PRA package restricted. ICS data is discarded while sysloading.

**ACTION:** Contact your technical support group.

**SYS9127**

System is DTI package restricted. ICS data is discarded while sysloading.

**ACTION:** Contact your technical support group.

**SYS9128**

Package #350 unrestricted with package #240 restricted.

**ACTION:** Contact your technical support group.

**SYS9129**

Package #350 restricted with MWUN set to 32.

**ACTION:** Contact your technical support group.

**SYS9130**

Incompatible units have been configured on the same line card.

**ACTION:** Contact your technical support group.

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## SYS – System Loader

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**SYS9135**

Access prefix data cannot be loaded as the ISDN package #145 is restricted.

**ACTION:** Action: The feature DAPC is part of the ISDN package #145.

**SYS9137**

The prompts related to the BSFE feature are set to default values as the BFS package is not equipped.

**ACTION:** Contact your technical support group.

**SYS9150**

Phantom TN superloops are moved to current loop +32 and Phantom TN cards are moved to current card +20 (for Option 11C only).

**ACTION:** Contact your technical support group.

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## SYS — System Loader

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## TDS — LD 34 Checking TDS, DTR and

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# TDS

Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter of this guide.

## How the TDS works

The digitone receiver portion of the Tone and Digit Switch (TDS) diagnostic, checks for a response to all digitone frequencies. The TDS diagnostic also tests tone detectors and dial tone detectors.

## Digitone Receiver

The digitone receiver (DTR) has two basic functions as follows:

- ◆ Routes dial tone from the Tone and Digit Switch to DTMF or MF4 telephone sets and DTMF trunks.
- ◆ Converts digitone from DTMF telephone sets and trunks to MESSINs.

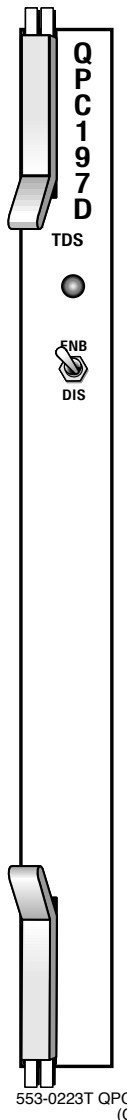
One DTR services one telephone or trunk at a time.

DTRs are chosen by the system in cyclic order from the highest TN to the lowest TN.

| DTR commands                                |                                                                                                                                                                                                                                        |         |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                                     | Description                                                                                                                                                                                                                            | Release |
| <b>List disabled DTR or XTD</b>             |                                                                                                                                                                                                                                        |         |
| <b>SDTR</b>                                 | List the TNs of all disabled DTR or XTD units                                                                                                                                                                                          | xtd-8   |
| <b>List disabled DTR or XTD Unit</b>        |                                                                                                                                                                                                                                        |         |
| <b>SDTR I s c (u)</b>                       | Get status of specified DTR or XTD card or unit.                                                                                                                                                                                       | basic-1 |
| <b>List all disabled Digitone Receivers</b> |                                                                                                                                                                                                                                        |         |
| <b>STAT</b>                                 | List TNs of all disabled digitone receivers<br><b>NONE</b> is output if there are no disabled digitone receivers                                                                                                                       | basic-1 |
| <b>Disabled DTR or XTD Unit</b>             |                                                                                                                                                                                                                                        |         |
| <b>DISR I s c (u)</b>                       | Disable specified Digitone receiver or XTD card or unit.                                                                                                                                                                               | xtd-8   |
| <b>Test a Digitone Receiver</b>             |                                                                                                                                                                                                                                        |         |
| <b>DTR I s c (u)</b>                        | Test specified unit on digitone receiver card or unit.<br><br>This test may be performed while the card is enabled or disabled. If a disabled card passes the test, it is enabled automatically. This command also applies to the XTD. | xtd-8   |
| <b>Enable a DTR</b>                         |                                                                                                                                                                                                                                        |         |
| <b>ENLR I s c (u)</b>                       | Enable specific Digitone receiver.                                                                                                                                                                                                     | basic-1 |
| <b>Stop a test</b>                          |                                                                                                                                                                                                                                        |         |
| <b>END</b>                                  | Stop execution of current command.<br><br>May also abort LD 34.                                                                                                                                                                        | basic-1 |

# TDS

## TDS — Tone and Digit Switch



The Tone and Digit Switch is a network type circuit that only transmits on the network bus. Most systems have a TDS card on each network shelf.

### Purpose

The Tone and Digit Switch is used to do the following:

- ◆ generate tones required by the system
- ◆ activate the digit out-pulsing relays on the trunk cards

### Function

The CPU selects the required tones or dial pulse digits by writing commands into the control memory of the TDS which gates them onto the TDS network link during the proper timeslots. The TDS performs two functions:

**Tones** - Generates the following tones from ROM in the form of eight bit PCM:

- ◆ **ringing for the 1000 series telephones\*** consists of 553 and 660 Hz both with 3rd and 5th harmonics modulated at 10 or 20 Hz
- ◆ **miscellaneous tone** consists of 440 Hz
- ◆ **dial tone** consists of 350 and 440 Hz
- ◆ **ringback tone** consists of 440 and 480 Hz, on for 2 seconds and off for 4 seconds
- ◆ **high tone** consists of 480 Hz
- ◆ **low tone** consists of 480 and 620 Hz, Busy tone at 60 ipm, Overflow at 120 imp
- ◆ **digitone** consists of digits 0 to 9, \*, #

**Dial pulse** - Generates dial pulse by sending zeros to close and ones to open the trunk pulsing relays on a trunk card.

## **Features**

The faceplate includes the following features:

- ◆ an LED, when lit indicating a disabled card
- ◆ an ENB/DIS switch to hardware enable or disable the card

The component side of the card contains straps which allow selection of the following:

- ◆ 10 or 20 Hz ringing option for SL-1 and 1000 series telephones \*
- ◆ high or low tone

\* Digital 2000 and 3000 series telephones ringing is generated from within the telephone.

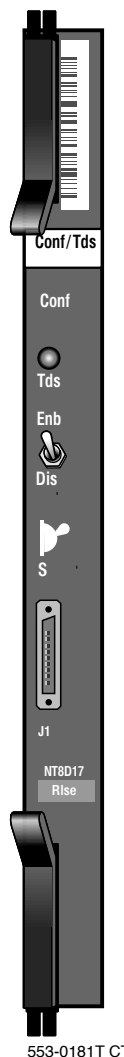
# TDS

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| TDS commands                           |                                                                                                                                                                                                                                                                                                                                 |         |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                                | Description                                                                                                                                                                                                                                                                                                                     | Release |
| <b>List all disabled Tone Detector</b> |                                                                                                                                                                                                                                                                                                                                 |         |
| <b>STAD</b>                            | List all disabled Tone Detectors<br><br><b>NONE</b> is output if there are no disabled tone detectors.                                                                                                                                                                                                                          | basic-1 |
| <b>Check status of a Tone Detector</b> |                                                                                                                                                                                                                                                                                                                                 |         |
| <b>STAD I s c (u)</b>                  | Get status of Tone Detector card or unit.<br><br>The status is either idle, busy, maintenance busy or not equipped.                                                                                                                                                                                                             | basic-1 |
| <b>Test a Tone Detector</b>            |                                                                                                                                                                                                                                                                                                                                 |         |
| <b>TDET I s c (u)</b>                  | Perform self-test and tone detection on specified card or unit.<br><br>Performs the self-test and basic tone detection functions of the Meridian 1/Meridian SL-1 Tone Detector card or unit. This test may be performed while the card is enabled or disabled. If a disabled card passes the test, it is enabled automatically. | basic-1 |
| <b>Stop a test</b>                     |                                                                                                                                                                                                                                                                                                                                 |         |
| <b>END</b>                             | Stop execution of current command.<br><br>May also abort LD 34.                                                                                                                                                                                                                                                                 | basic-1 |
| <b>Disable a Tone Detector card</b>    |                                                                                                                                                                                                                                                                                                                                 |         |
| <b>DISD I s c</b>                      | Disable the specified Meridian 1/Meridian SL-1 Tone Detector card.<br><br>Disables both units and lights the LED.                                                                                                                                                                                                               | basic-1 |
| <b>Disable a Dial Tone Detector</b>    |                                                                                                                                                                                                                                                                                                                                 |         |
| <b>DISD I s c (u)</b>                  | Disable specific dial tone detector.<br><br>If both units on the card are disabled and the card LED lights.                                                                                                                                                                                                                     | basic-1 |
| <b>Enable a Tone Detector</b>          |                                                                                                                                                                                                                                                                                                                                 |         |
| <b>ENLD I s c (u)</b>                  | Enable tone detector on specified card or unit.                                                                                                                                                                                                                                                                                 | basic-1 |

## Conf/Tds — Conference Tone and Digit Switch



553-0181T C

The Conference Tone and Digit Switch (CT) card combines the functionality of the existing conference and tone and digit switch. It occupies one network slot and uses two network loops.

### Purpose

The conference portion of the CT card remains the same, except that both A or Mu law are now provided. The Tone and Digit Switch (T& DS) portion of the card now provides 256 tones, Music Trunk Interface (MTI) and Multi- Frequency Sender (MFS) tones.

### Function

**Conference** - The selection of A law or Mu law is set in software according to a country code. The code information is downloaded from the CPU to an onboard CT microprocessor unit, which sets the card in the proper companding mode.

**Tone and Digit Switch** - The 256 tones are generated from 1mega-bit EPROM.

A Master Cadence Table (MCT) will store up to 256 ringing cadences. The MCT table is created by the user for their particular country and is downloaded from the CPU during CT card enabling or initialization. The default is the North American MCT. The CT microprocessor firmware is used to generate the cadences freeing the CPU for other tasks.

Music Trunk Interface, for certain international markets, uses external cards providing eight channels of music announcements, record tones and cadences. These announcements can come from an analog Music Trunk or Kapsch Digital announcer.

Multi Frequency Sender tones are provided for the signaling of ANI digits over CAMA trunks to toll switching CAMA, TOPS or TSPS offices.

# TDS

## Features

The faceplate includes the following features:

- ◆ an LED for Conf and an LED for TDS, when lit indicating a disabled function
- ◆ an ENB/DIS switch to hardware enable or disable the card
- ◆ a connector (J1) to attach a Music Trunk Interface

The component side of the card contains a switch to set the attenuation levels and warning tone on or off, and a strap to set the warning tone level.



| Conf/T&DS commands          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Release |
| <b>List all TDS Loops</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
| <b>STAT loop</b>            | <p>Get status TDS loop.</p> <p>The response may include <b>OPS DSBL</b>, indicating that the outpulsing function of the TDS card has been disabled.</p> <p><b>FAULTY HW: NO RESPONSE</b> = loop identified as faulty by the LRIP function. Refer to the FHW chapter.</p>                                                                                                                                                                                                                                                                                                                                                                                                                | basic-1 |
| <b>Disable a TDS</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
| <b>DISL loop</b>            | <p>Disable tone and digit loop.</p> <p>For Conference/TDS/MFS cards see note with ENLL command.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |
| <b>Disable Conf/TDS/MFS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
| <b>DISX I</b>               | <p>Disable Conf/TDS/MFS card on loop I and I + 1.</p> <p>Disables the entire combined Conference, Tone and Digit Switch, and MF Sender (NT8D17) card. Both the even numbered TDS/MFS loop and adjacent conference loop are disabled. loop = 0, 2, 4, . . . 158</p> <p>The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions. However, this only prevents the loop from being used by software and does not affect the hardware status of the card.</p> <p>The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card.</p> <p>This command can be used in LD 34, LD 38 and LD 46.</p> | xct-15  |
| <b>Enable TDS</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |
| <b>ENLL I</b>               | <p>Enable tone and digit switch loop I.</p> <p>For Conference/TDS/MFS cards the DISX and ENLX commands must be used whenever the faceplate switch of the card has been toggled. ENLL will software enable the card but the card will not be properly reset.</p>                                                                                                                                                                                                                                                                                                                                                                                                                         | basic-1 |

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### Conf/T&DS commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Enable Conf/TDS/MFS

|               |                                               |        |
|---------------|-----------------------------------------------|--------|
| <b>ENLX I</b> | Enable Conf/TDS/MFS card on loop I and I + 1. | xct-15 |
|---------------|-----------------------------------------------|--------|

This command can be used in LD 34, LD 38 and LD 46.

Enables the entire combined Conference, Tone and Digit Switch, and MF Sender (NT8D17) card. Both the even numbered TDS/MFS loop and adjacent conference loop are enabled. (loop = 0, 2, 4, . . . 158) The Conf/TDS card is not enabled automatically when it is inserted.

Both loops must have been previously disabled. This command initiates card tests and the download of software.

The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions. However, this only prevents the loop from being used by software and does not affect the hardware status of the card. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card.

Enabling more than 16 conference loops may cause the system to lockup.

## Maintenance telephone commands

The following commands are used from a maintenance telephone to test the various tones. Both the command and the dial pad equivalents are shown.

| Maintenance telephone commands |                                                                                                                                                                            |         |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                        | Description                                                                                                                                                                | Release |
| <b>Select table number</b>     |                                                                                                                                                                            |         |
| <b>8225#xx##</b>               | TABL#xx##<br><br>Select table number xx. If this command is not issued before any tone request command, then table 0 is assumed (Generic X11 with supplementary features). | basic-4 |
| <b>Remove any active tone</b>  |                                                                                                                                                                            |         |
| <b>2##</b>                     | C##<br><br>Remove any active tone.                                                                                                                                         | basic-1 |
| <b>Busy tone</b>               |                                                                                                                                                                            |         |
| <b>279#loop##</b>              | BSY#loop##<br><br>Provide busy tone from tone and digit loop.                                                                                                              | basic-1 |
| <b>Call Waiting tone</b>       |                                                                                                                                                                            |         |
| <b>294#loop##</b>              | CWG#loop##<br><br>Give call waiting tone from loop.                                                                                                                        | basic-1 |
| <b>Camp-On tone</b>            |                                                                                                                                                                            |         |
| <b>267#loop##</b>              | CMP#loop##<br><br>Provide Camp-On tone from loop.                                                                                                                          | basic-1 |
| <b>Dial tone</b>               |                                                                                                                                                                            |         |
| <b>342#loop##</b>              | DIA#loop##<br><br>Provide dial tone from tone and digit loop.                                                                                                              | basic-1 |
| <b>Distinctive Ringing</b>     |                                                                                                                                                                            |         |
| <b>3764#loop##</b>             | DRNG#loop##<br><br>Provide distinctive ringing from loop.                                                                                                                  | basic-1 |

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| Maintenance telephone commands (continued) |                                                                                  |         |
|--------------------------------------------|----------------------------------------------------------------------------------|---------|
| Command                                    | Description                                                                      | Release |
| <b>Distinctive Ringing</b>                 |                                                                                  |         |
| 5374#loop##                                | JDRG#loop##<br>Provide distinctive ringing from loop.                            | basic-8 |
| <b>Interrupted dial tone</b>               |                                                                                  |         |
| 5438#loop##                                | JIDT#loop##<br>Provide interrupted dial tone from loop.                          | basic-8 |
| <b>Intrusion tone</b>                      |                                                                                  |         |
| 486#loop##                                 | ITN#loop##<br>Provide intrusion tone from loop.                                  | basic-1 |
| <b>Outpulsing</b>                          |                                                                                  |         |
| 2878#xx##                                  | CUST#xx##<br>Test outpulsing for customer XX.                                    | basic-1 |
| <b>Overflow tone</b>                       |                                                                                  |         |
| 683#loop##                                 | OVF#loop##<br>Provide overflow tone from loop.                                   | basic-1 |
| <b>Override tone</b>                       |                                                                                  |         |
| 673#loop##                                 | ORD#loop##<br>Provide override tone from loop.                                   | basic-1 |
| <b>Paid Call Restriction tone</b>          |                                                                                  |         |
| 7278#loop##                                | PCRT#loop##<br>Test the Paid Call Restriction (PCR) tone after the TABL command. | pcr-7   |
| <b>Ringback tone</b>                       |                                                                                  |         |
| 725#loop##                                 | RBK#loop##<br>Provide Ringback tone from loop.                                   | basic-1 |
| <b>Ring tone</b>                           |                                                                                  |         |
| 764#loop##                                 | RNG#loop##<br>Provide ring tone from loop.                                       | basic-1 |

**Maintenance telephone commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Signals through Kapsch digital announcer or music interface**

|                    |                                                                                                                |         |
|--------------------|----------------------------------------------------------------------------------------------------------------|---------|
| <b>266x#loop##</b> | ANNx#loop##<br>Provides signals coming through source number x of KAPSCH Digital Announcer or Music Interface. | basic-6 |
|--------------------|----------------------------------------------------------------------------------------------------------------|---------|

**Special dial tone**

|                   |                                                 |         |
|-------------------|-------------------------------------------------|---------|
| <b>735#loop##</b> | SDL#loop##<br>Give special dial tone from loop. | basic-1 |
|-------------------|-------------------------------------------------|---------|

**Test outputpulsing**

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>677#loop#x#</b> | OPS#loop#x##<br>Test outputpulsing from Meridian 1/Meridian SL-1 to idle trunk. Outputpulses from tone and digit loop using the 10 or 20 pps outputpulsers to any idle trunk. This command connects the Meridian 1/Meridian SL-1 telephone to the trunk and a test call on the trunk may be made using the outputpulses selected.<br><br>Where:<br><br>xx = 10 or 20 representing the trunk class of service (LD 14 CLS = P10 or P20).<br><br>When the test call is completed, the program must be re-entered by keying SPRE 91 before entering another command, where SPRE denotes the Special Service Prefix code, unique for each customer. | basic-1 |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**Test tone**

|                   |                                            |         |
|-------------------|--------------------------------------------|---------|
| <b>878#loop##</b> | TST#loop##<br>Provide test tone from loop. | basic-1 |
|-------------------|--------------------------------------------|---------|

**Test tone and cadence number**

|                        |                                                                                                                                                                                                                                                                                                 |        |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>9288#loop#t#c##</b> | XCTT#loop#t#c##<br>Test tone and cadence number on Conference/TDS/MFS card. Where:<br><br>loop = loop number of Conference/TDS/MFS (NT8D17)<br>t = tone number<br>c = cadence number<br><br>Refer to Flexible Tone and Cadences (553-2711-180) for the Conference/TDS tone and cadence numbers. | xct-15 |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|

# TDS

## Maintenance telephone commands (continued)

| Command                   | Description                                                            | Release |
|---------------------------|------------------------------------------------------------------------|---------|
| <b>Tone to last party</b> |                                                                        |         |
| <b>857#loop##</b>         | TLP#loop##<br>Provide tone to last party from the tone and digit loop. | basic-1 |

## TDS messages

### TDS000

Program identifier indicating that the program has been loaded.

**ACTION:** The TDS program is loaded and ready for you to enter commands.

### TDS001 loop

TDS **loop** has incorrect Digitone cycle. Outpulsing from that TDS may be faulty, or 100 ms Digitone burst is being used in a system defined for a 50 ms operation or vice versa.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### TDS002 loop

TDS **loop** is transmitting erroneous Digitone frequencies. Digitone outpulsing from that TDS will be faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### TDS003 loop

20 pps outputter on TDS **loop** has bad timing or is not producing the correct number of pulses per request. 20 pps outpulsing is faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS004 loop**

10 pps outputer on TDS **loop** has bad timing or is not producing the correct number of pulses per request. 10 pps outputing is faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS005 loop**

An outputer on TDS **loop** did not complete a digit. 10 or 20 pps outputing is faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS006 loop**

All outputers on TDS **loop** have been disabled due to a system I/O interface fault.

**ACTION:** Use DISX 1 to disable and ENLX 1 to enable the TDS loop.

**TDS008 loop**

The Digitone pulse on TDS **loop** did not complete cycle. Digitone outputing is faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS010 loop**

Channel errors. Bad channels are disabled. Capacity of TDS is reduced. Outputing and/or tone faults may occur.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS011 loop x**

The Tone Detector is unable to detect tone **x** generated by TDS **loop**, where:

**x** = 1 for Dial Tone

**x** = 2 for Busy Tone

**x** = 3 for Overflow Tone

**x** = 4 for Ringback Tone

**x** = 5 for Test Tone

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TDS012

Loop is not an active TDS. It is disabled. This code will only occur with a test that is invoked manually.

**ACTION:** Use ENLL 1 to enable the card prior to testing. Re-enter the command.

## TDS013 loop

TDS not allowed in that **loop**.

**ACTION:** Ensure that this is the command you wanted to use.

## TDS014 loop

Tone path could not be established to tone and digit **loop**.

**ACTION:** Use STAT 1 to check for disabled TDS loops. If none are disabled, try later when traffic is reduced.

## TDS015 loop

TDS **loop** is not responding. Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

1. TDS **loop** is not responding.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

If the fault persists, suspect:

2. any other TDS card

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

3. the Peripheral Signaler (PS) card

**ACTION:** Replace the PS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.



**TDS016**

TDS is already enabled.

**ACTION:** Ensure that this is the command you wanted to use.

**TDS017**

No TDS available for Digitone receiver testing.

**ACTION:** Try later when traffic is reduced.

**TDS018 xx yy**

The digit sent **xx** from CCITT TDS did not match the digit received **yy** from the DTR.

**ACTION:** Use DISX 1 to disable and ENLX 1 to enable the TDS. If the problem persist replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS019**

1. Faulty TDS. Start at the first or most likely cause and go down the list until the fault is cleared. If the fault does not clear, call your technical support group.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Incompatible ( $\mu$ -law or A-law) TDS.

**ACTION:** Make sure the proper hardware is being used.

3. Faulty DTR card.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS020**

Card disabled. To test card, it must first be enabled.

**ACTION:** Use ENLL 1 to enable the card.

**TDS021**

Invalid unit used with DTR, ENLR or DISR command. Each Digitone Receiver uses TN pair.

**ACTION:** Re-enter the command using an even number unit.

## TDS032 loop

Card not responding.

**ACTION:** Check to make sure your data is correct and re-enter the command. If the card is not physically present in the shelf and should be, install a TDS card and program the TDS loop. If the card is physically present in the shelf, replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TDS100 l s c

The specified Digitone receiver has been disabled due to lack of response or faulty operation. The DTR card indicated in the message is disabled only if 50 percent of system Digitone Receivers (DTRs) have not already been disabled. This failure rate will always leave 50 percent of Digitone Receivers enabled, regardless of performance.

1. Suspect a faulty DTR card.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Suspect a faulty TDS card if the fault persists or if more than one Digitone receiver is shown as faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TDS101 l s c

Specified Digitone receiver has been disabled due to loss of speech transmission capability. As for TDS100.

1. Suspect a faulty DTR card.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Suspect a faulty TDS card if the fault persists or if more than one Digitone receiver is shown as faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS102**

Digitone receiver requested is busy.

**ACTION:** Try again later.

**TDS103**

TN specified is not equipped to be a Digitone receiver.

**ACTION:** Ensure that this is the command you wanted to use.

**TDS104**

No Digitone Receiver found.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. Use PRT or LTN in LD 20 to print list of DTRs.

**TDS105 I s c**

The specified Digitone Receiver has been disabled due to a failure to detect A, B, C, D digits. Card is disabled only if 50 percent of system Digitone Receivers have not already been disabled. This failure rate always leaves 50 percent of Digitone Receivers enabled.

1. Suspect a faulty DTR card.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. Suspect a faulty TDS if fault persists or if more than one Digitone receiver is shown faulty.

**ACTION:** Replace the TDS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS120**

The ANN command cannot be used. ANN command is used for Kapsch Digital announcer or Music interface.

**ACTION:** Ensure that this is the command you wanted to use.

**TDS121**

The source number is out-of-range (1-8).

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TDS201

The last request is not finished executing. Only END is allowed.  
The END will terminate the execution.

**ACTION:** Use the END command to end the test or wait until the test has finished.

## TDS202

Invalid parameter. Wrong number of parameters for this command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TDS203

Invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

## TDS204

Loop is out-of-range. Loops 0 to 159 only are allowed.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TDS205

Shelf is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TDS206

Card is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TDS207

Unit is out-of-range (0 to 1).

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TDS208

Command requested is allowed only from a maintenance telephone. Tones or outpulsing cannot interact with a TTY. You cannot hear a tone through a DTE.

**ACTION:** Use a maintenance telephone to enter the command.

**TDS209**

Customer does not exist.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TDS210**

Card does not exist in data base.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TDS212**

Requested trunk type that uses the desired outputser is not available. Be sure the system contains the desired trunks. If they exist, all trunks in that category may be busy or unequipped.

**ACTION:** Information only, no action required.

**TDS301 l s c (u) x y**

The specified tone detector has been disabled due to faulty operation or lack of response, where x and y indicate the mode and test it has failed. The rest of the testing is canceled.

| <b>xy</b>       | <b>Mode</b>                                                    |
|-----------------|----------------------------------------------------------------|
| <b>00040001</b> | Mode I Precise Tone                                            |
| <b>00040003</b> | Mode I Tone Duration > 50 ms                                   |
| <b>00040005</b> | Mode I Tone Duration > 300 ms                                  |
| <b>00040005</b> | Mode I Tone Duration > 300 ms, Tone is<br>turned off at 256 ms |
| <b>00050001</b> | Mode I Precise Busy Tone                                       |
| <b>00050003</b> | Mode I Non-Precise Busy Tone                                   |
| <b>00060001</b> | Mode I Precise Overflow Tone                                   |
| <b>00060003</b> | Mode I Non-Precise Overflow Tone                               |
| <b>00060005</b> | Mode I Tone Duration < 300 ms                                  |
| <b>00070001</b> | Mode I Ringback Tone                                           |
| <b>00070003</b> | Mode I Any Tone                                                |
| <b>00080001</b> | Mode I Special Common Carrier Dial Tone                        |
| <b>00090001</b> | Mode I Unidentified Tone                                       |
| <b>00090003</b> | Mode II Unidentified Tone                                      |
| <b>00090005</b> | Mode IV Test Tone                                              |

**00090007**—Mode III Test Tone

**00090009**—Mode III Test Tone (Tone is turned off at 5.5 s)

**000A0001**—Mode V Single Frequency Tone

**000A0003**—Mode V Dual Frequency Tone

**ACTION:** Use the STAD command to list any disabled tone detectors. Use the TDET command to test the tone detectors and, if necessary, replace faulty detector cards, following the steps in the *Hardware replacement* guide.

## **TDS302 l s c (u)**

The specified tone detector has been disabled; unable to perform self-test.

**ACTION:** Use the STAD command to list any disabled tone detectors. Use the TDET command to test the tone detectors and, if necessary, replace faulty detector cards, following the steps in the *Hardware replacement* guide.

## **TDS303 l s c (u)**

Terminal number specified is not designated as a tone detector.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **TDS304**

No TDS is available for tone detector testing.

**ACTION:** Wait for the TDS card to become idle and attempt the test again.

## **TDS310**

Tone Detector (TDET) package is restricted.

**ACTION:** Information only, no action required.

## **TDS311**

Specified TN is not an MFR.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **TDS312**

No MFR units are configured.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TDS313**

Some units of MFR card are busy, test not done.

**ACTION:** Be patient. Try again later.

**TDS314**

No MFS available for MFR test.

**ACTION:** Be patient. Try again later.

**TDS315 I s c u**

MFR unit is busy. Test not performed.

**ACTION:** Be patient. Try again later.

**TDS316**

MFR is disabled due to faulty operation.

**ACTION:** Replace the MFR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS317**

Digitone Receiver's (NT8D16) Peripheral Controller (NT8D01) is disabled, nothing is performed.

**ACTION:** Use ENXP x or ENXP XPC x in LD 32 to enable the peripheral controller and re-enter the command.

**TDS318**

Superloop number must be a multiple of 4.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TDS319**

Digitone Receiver (NT8D16) failed self test.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS320**

Digitone Receiver (NT8D16) does not respond. Check Digitone Receiver and the Network Card/Peripheral Controller (NT8D04/NT8D01) communication path to the card for a fault.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

# TDS

## **TDS400**

FTC table 0 used for tone tests.

**ACTION:** Information only, no action required.

## **TDS411**

Dial Tone Detector package is not equipped.

**ACTION:** Information only, no action required.

## **TDS412**

Dial Tone Detector and Tone Detector packages are not equipped.

**ACTION:** Information only, no action required.

## **TDS500**

ANN command cannot be used because the Message Intercept (MIN) package is not equipped.

**ACTION:** Information only, no action required.

## **TDS501**

Source number out-of-range. Only 8 external sources (1 to 8) can be defined for testing.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## **TDS502**

ENLX (Enable) or DISX (Disable) commands are only used on Conference/TDS/MFS cards.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **TDS503**

The Conference/TDS/MFS card is already enabled/disabled.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **TDS504**

Received an unexpected message from the Conference/TDS/MFS card.

**ACTION:** Use the DISX command to disable the card and retry the ENLX command to enable the card.



**TDS505**

The Enable command (ENLX) did not receive the down-load complete message within 6 seconds.

**ACTION:** Check to make sure the faceplate switch is in the Enb position and re-enter the command.

**TDS506**

Tone or cadence number is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TDS507**

The TLP Supplementary package is not equipped.

**ACTION:** Information only, no action required.

**TDS508**

The SSD scanning message received no response from the DTR/XDTR. The faulty DTR is disabled.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS511 l s c u x**

DTR/XDTR fails to respond to SSD scanning message for **x** times prior to the DTMF tone detection test.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS512 l s c u x d**

DTR/XDTR fails to detect the **d** digit for **x** times prior to the DTMF tone detection test is testing.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TDS513 l s c u x**

DTR/XDTR fails to detect all the digits for **x** times when the DTMF tone detection test with the fast TDS is testing.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TDS514 l s c u x**

DTR/XDTR fails to pass the digit through for **x** times when continuity test is testing.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TDS520**

DTR and TDS commands are not supported for slot 0.

**ACTION:** To test these devices do a DISX 0 and then ENLX 0.

## **TDS827**

Multiple SSD messages of the same DTMF digit are received from the same NT8D16 Digitone Receiver during a DTR or TDS test in LD 34. If this problem occurs every time, replace the card.

**ACTION:** Replace the DTR card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TDS828 loop**

Attempting to enable Conference/TDS card during midnight routines.

The Tone and Digit Switch and Digitone Receiver diagnostic program (LD 34) tests cards used in generating and detecting tones in the Meridian SL-1 system. Response to commands for the Dial Tone Detector card are output as DTD messages. Response to commands for the Tone and Digit Switch card are output as TDS messages.

**ACTION:** Information only, no action required.

## DTD Messages

### DTD001 l s c u

“Failure to detect” has exceeded the allowable limit for Dial Tone Detector (DTD) card **l s c u**.

**ACTION:** Replace the DTD card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### DTD002 l s c u

The DTD specified by **l s c u** has failed to pass the response test.

**ACTION:** Replace the DTD card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### DTD003

Fifty percent of all DTD cards in the system are disabled.

**ACTION:** Use DISD **l s c** to disable and ENLD **l s c** to enable the DTD card.

### DTD004

Test is not specified in configuration.

**ACTION:** To check for proper configuration use LD 22 in the *administration input/output guide*. Use LD 17 to specify test in the configuration.

### DTD005

Too many messages from DTD specified by TN.

**ACTION:** Replace the DTD card following the steps the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

### DTD006

DTD configured but not used.

**ACTION:** Information only, no action required. 

# TDS

**1296** LD 34 Checking TDS, DTR and TD's

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## LD 1 — Template Audit

Templates are used to store data which is common to many telephones. This includes items such as key functions and class of service. The Template Audit program saves protected memory by eliminating unused or duplicate telephone templates.

**CAUTION:**

Beware of the following issues as they could cause you problems.

- ◆ Due to the Real Time impact of this program and the large amount of data being scanned, the Template Audit should be run during low traffic hours.
- ◆ The Template Audit should not be aborted unless it is critically necessary. An interrupted audit can corrupt templates. Telephones using corrupted templates will have degraded service and will have to be reprogrammed to restore the templates.
- ◆ If a system initialization occurs during the Template Audit, the program is automatically aborted. It should be restarted as soon as possible after this occurs.
- ◆ The audit printout only appears on the TTY that requested the Template Audit program to run.
- ◆ The Template Audit program cannot be run as a background task.
- ◆ To confirm that extraneous templates have been removed and that all counts have been corrected to their proper value, rerun the audit program.
- ◆ A datadump (LD 43) should be run after a template audit is executed.

## LD 1 also performs the following consistency checks:

### User Count Scan

All telephones in the system are scanned to find the total number of users for a template.

If a template is found to have no users, the entire template is removed with the warning message **NO USERS FOUND**. If a template is found to have an incorrect user count, the correct user count is written to the template, and the warning message **USER COUNT LOW** or **USER COUNT HIGH** is output. If the user count is accurate, the message **USER COUNT OK** is output.

### Duplicate template scan

Each template is checked against every other template for possible duplication. A template is considered a duplicate of another if all of the following conditions are met:

- ◆ the checksums are the same
- ◆ the template lengths and the hunt offsets are the same
- ◆ all template entries are the same

If a match is found, the warning message **DUPLICATE OF xxxx** is output. A scan is then initiated to locate all users of the current template and move them to the matched template.

For each user found, the template number in the telephone data block and the user count is updated. After all of the users of the current template are moved to the matched template, the current template is removed.

### Template checksum audit

A checksum is a binary sum of the template length, hunt offset, and template entries. The checksum is calculated for each template and compared with the existing template checksum. If the existing checksum is correct, the message **CHECKSUM OK** is output. Otherwise, the checksum is corrected with the warning message **CHECKSUM WRONG**.

### Key/Lamp Strip Audit

Two checks are made to correct Key/Lamp Strip (KLS) corruption. First, the template length is compared to the number of KLS indicated in the protected line block. The second check verifies that the last word of the template reflects a **NULL** key.

If these checks detect any discrepancies, they are corrected with the warning message **CORRUPTED KLS**.

These corrections alter the checksum of the template. This is identified and corrected by the checksum audit.

### Sample operation

The audit begins when the program (LD 1) is loaded. All templates are scanned in the following sequence, beginning with template one:

- 1 PBX telephones
- 2 BCS telephones

Following is an example of the system information which is generated during a Template Audit:

#### **TEMPLATE AUDIT**

#### **STARTING PBX TEMPLATE SCAN**

**TEMPLATE 0001 USER COUNT LOW CHECKSUM OK**

**TEMPLATE 0002 USER COUNT HIGH CHECKSUM OK**

**TEMPLATE 0003 NO USERS FOUND**

- 
- 
-

# LD 1

1300 Template audit

of 1474

---

STARTING Sell TEMPLATE SCAN ?TEMPLATE 0001  
USER COUNT OK          CHECKSUM OK

.

.

.

TEMPLATE 0067 USER COUNT OK      CHECKSUM  
WRONG

TEMPLATE 0068 USER COUNT OK      CHECKSUM OK  
DUPLICATE OF 0014

.

TEMPLATE 0082 USER COUNT OK      CHECKSUM OK

.

TEMPLATE 0120 USER COUNT OK

TEMPLATE AUDIT COMPLETE

*Note:* The report does not indicate that template inconsistencies  
have been corrected. 



## TEMU — Tape Emulation

Tape Emulation is a resident program. TEMU does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### TEMU messages

**TEMU001 Failure during initialization of tape emulation.**

**ACTION:** Contact your technical-support group.

**TEMU002 x failure giving command semaphore.**

**ACTION:** Contact your technical-support group.

**TEMU003 x invalid command sent to tape emulation.**

**ACTION:** Contact your technical-support group.

**TEMU004 x semaphore creation failed.**

**ACTION:** Contact your technical-support group.

**TEMU005 x tape task init failed.**

**ACTION:** Contact your technical-support group.

**TEMU006 x tape task activation failed.**

**ACTION:** Contact your technical-support group.

**TEMU007 Failure creating tape emulation task.**

**ACTION:** Contact your technical-support group.

**TEMU008 x failure taking command semaphore.**

**ACTION:** Contact your technical-support group.

**TEMU009 x unknown command sent to tape task.**

**ACTION:** Contact your technical-support group.

**TEMU010 Error occurred writing HI database.**

**ACTION:** Contact your technical-support group.

**TEMU011 Error occurred backing up database.**

**ACTION:** Be sure Floppy Diskette is properly inserted.

**TEMU012 Error occurred restoring database.**

**ACTION:** Check that Floppy Diskette is properly inserted.

**TEMU013 Error occurred swapping primary/secondary databases.**

**ACTION:** Contact your technical-support group.

**TEMU014 Temu task timeout, where: cmd = x, data = y, stat = z.**

**ACTION:** Contact your technical-support group.

**TEMU020 x failure opening file y.**

**ACTION:** Contact your technical-support group.

**TEMU021 x failure obtaining size of file y.**

**ACTION:** Contact your technical-support group.

**TEMU022 x failure renaming file y to z.**

**ACTION:** Contact your technical-support group.

**TEMU023 WARNING - x failure opening file y.**

**ACTION:** Contact your technical-support group.

**TEMU028 Failure opening database files for reading.**

**ACTION:** Contact your technical-support group.

**TEMU029 Failure closing database files after reading.**

**ACTION:** Contact your technical-support group.

**TEMU030 x failure opening file y for writing.**

**ACTION:** Contact your technical-support group.

**TEMU032 Failure opening database files for writing.**

**ACTION:** Contact your technical-support group.

**TEMU037 Failure closing database files after writing.**

**ACTION:** Contact your technical-support group.

**TEMU038 Error skipping x records.**

**ACTION:** Contact your technical-support group.

**TEMU040 Invalid read in write sequence.****ACTION:** Contact your technical-support group.**TEMU041 Failure reading record from x file.****ACTION:** Contact your technical-support group.**TEMU042 x failure reading from y file during Query.****ACTION:** Contact your technical-support group.**TEMU043 x failure reading from fd y.****ACTION:** Contact your technical-support group.**TEMU044 x failure writing to fd y.****ACTION:** Contact your technical-support group.**TEMU045 x failure seeking to y for z in file.****ACTION:** Contact your technical-support group.**TEMU046 x failure at y in file.****ACTION:** Contact your technical-support group.**TEMU047 Attempt to write x record.****ACTION:** Contact your technical-support group.**TEMU048 Database disk volume is full.****ACTION:** Contact your technical-support group.**TEMU049 WARNING: record no mismatch, curr = x, rec = y.****ACTION:** Contact your technical-support group.**TEMU050 Begin write not at 1st data rec, curr = x, rec = y.****ACTION:** Contact your technical-support group.**TEMU051 Failure writing record to x file.****ACTION:** Contact your technical-support group.**TEMU053 Attempt to write unknown record type x.****ACTION:** Contact your technical-support group.**TEMU056 DB x request illegal during write sequence.****ACTION:** Contact your technical-support group.**TEMU059 x WARNING - failure closing y file.****ACTION:** Contact your technical-support group.

**TEMU061 Failure copying dir x contents to y.**

**ACTION:** Contact your technical-support group.

**TEMU062 Database x removable media failed.**

**ACTION:** Contact your technical-support group.

**TEMU071 Failure during database query.**

**ACTION:** Contact your technical-support group.

**TEMU072 x failure moving dir y contents to z.**

**ACTION:** Contact your technical-support group.

**TEMU073 Failure swapping primary database with secondary.**

**ACTION:** Contact your technical-support group.

**TEMU074 x failure copying y file to z file.**

**ACTION:** Contact your technical-support group.

**TEMU075 x failure y dir z for copy.**

**ACTION:** Contact your technical-support group.

**TEMU076 Copy source dir x is empty.**

**ACTION:** Contact your technical-support group.

**TEMU077 Failure copying dir file x to y.**

**ACTION:** Contact your technical-support group.

**TEMU079 x failure to y diskette vol during formatting.**

**ACTION:** Contact your technical-support group.

**TEMU080 x no diskette in active CMDU drive y.**

**ACTION:** Contact your technical-support group.

**TEMU081 x failure formatting diskette in active CMDU drive y.**

**ACTION:** Contact your technical-support group.

**TEMU082 x open failure for hi dir y on active CMDU diskette.**

**ACTION:** Contact your technical-support group.

**TEMU083 Diskette on active CMDU drive x is write protected.**

**ACTION:** Contact your technical-support group.

**TEMU085 x failure y dir z for rename.**

**ACTION:** Contact your technical-support group.

**TEMU086 Rename source dir x is empty.**

**ACTION:** Contact your technical-support group.

**TEMU087 x failure renaming dir file y to z.**

**ACTION:** Contact your technical-support group.

**TEMU088 WARNING: x file was not preallocated on disk.**

**ACTION:** Contact your technical-support group.

**TEMU100 Failure obtaining file/dir name x from DLO.**

**ACTION:** Contact your technical-support group.

**TEMU0101 Database version is greater than current issue: S/W issue x y -**

**DB issue x y**

**ACTION:** Reconfigure the data and do a data dump.

**TEMU0102 Bad issue number in data file**

**ACTION:** Reconfigure the data and do a data dump.

**TEMU0103 Name too long : x / y**

**ACTION:** Contact your technical-support group.

**TEMU0104 Data dump failed for multi-language**

Refer to previous messages to determine what caused the situation.

**ACTION:** Restart the data dump after clearing the originating problems. 

# TEMU

**1306**    Tape Emulation

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## TFC — LD 2 Set Time and Date

### In this chapter

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For more information refer to the *Traffic measurement* and the *maintenance input/output guide* for a complete listing of the LD 2 commands.

## How to use LD 2 traffic commands

LD 2 is used to set traffic options, the system ID, the date, and the time. The conventions used to describe the traffic commands are as follows:

- ◆ a period (.) prompt indicates that the system is ready to receive a new command
- ◆ a double dash (--) indicates that the system is ready to receive data
- ◆ a space <sp> prompt indicates that the space bar should be pressed
- ◆ a carriage return <cr> prompt indicates that the return key should be pressed

**Note:** The message TFC000 output on the switch indicates that the traffic program is running.

### Print time and date

#### To print the current time and date

Enter TTAD

#### An example of a time and date printout

TTAD **WED 24 11 1995 15 41 49**

The TTAD format is: day-of-the-week, day, month, year, hour, minute, second

### Set time and date

#### To set the time and date

Enter STAD (day) (month) (year) (hour) (minute) (second) <cr>



### An example of an input

STAD 24 11 1995 15 41 49<cr>

**Note:** Except for the year, the other entries in the time of day output are 2-digit numbers. The year may be any year from 1901 to 2099 inclusive. It may be input as a full 4-digit field or as a 2-digit short form. The 2-digit short form is assumed to be in the range 1976 to 2075 and the appropriate addition is made when calculating the day-of-the-week and leap years.

### Adjust system clock

The small differences in the electronic components that comprise the Meridian 1 system clock, might cause it to run a few milliseconds fast or slow each day. Set the system time, using an accurate time source. Wait for a few days, or even one week. Print the time and the date at an exact time with reference to the source used when setting the system clock. Compare the source time to the print out time and determine if the system clock is fast or slow.

For example, if the system clock is 12 seconds fast over a one week period, this equates to a gain of 1.7 seconds per day. Use the Set Adjustment command to subtract 1.7 seconds per day. The adjustment is automatically performed during the midnight routine.

### To print the current adjustment

Enter TDTA

### An example of an adjustment printout

TDTA 1 113 (x yyy)

The TDTA format is:

x = 0 for negative increment (slow down the clock)

x = 1 for positive increment (speed up the clock)

yyy = 0-60 second adjustment in increments of 100 ms

**To set the adjustment**

Type `SDTA 1 113 -- x yyy<cr>`

**An example of setting the adjustment**

`SDTA 1 113 -- 0<sp>017<cr>`

The SDTA format is:

`x = 0` for negative increment (slow down the clock)

`x = 1` for positive increment (speed up the clock)

`yyy = 0-60` second adjustment in increments of 100 ms

**Set and print Daylight Savings Time**

With X11 release 19 and later, you can program daylight saving time changes to occur automatically.

- ◆ You can set the date to change to daylight savings, and to return to standard time.
- ◆ You can print the daylight saving time change settings.
- ◆ The system clock must be running on daylight savings time to be updated automatically.
- ◆ The daylight saving time change settings are not erased during a system reload.

**To print the current change setting**

Enter `TDST`

**Example — change setting printout -**

**SDST OFF**

**FWTM APR 1 SUN 2 (AT 02:00 2/4/1995)**

**BWTM OCT L SUN 2 (AT 02:00 29/10/1995)**

**To enable the automatic change**

Enter `SDST ON`

**To disable the automatic change**

Enter `SDST OFF`

**To set the clock to move forward**

Enter FWTM (month) (week) (day) (hour)

The FWTM format is:

month = 1 - ( 4 ) - 12 [1 is January-default (4) is April-12 is  
December]

week = ( 1 ) - 5 - L [1 is the first week-5 is the fifth week, L is the last  
week of the month]

day = ( 1 ) - 7 [default (1) is Sunday-7 is Saturday]

hour = 1 - ( 2 ) - 22 [1 is midnight-default( 2) is 1:00 am-22 is  
11:00 pm]

**To set the clock to move backward**

Enter BWTM (month) (week) (day) (hour)

The BWTM format is:

month = 1 - ( 10 ) - 12 [1 is January-default (4) is October-12 is  
December]

week = ( 1 ) - 5 - L [1 is the first week-5 is the fifth week, L is the last  
week of the month]

day = ( 1 ) - 7 [default (1) is Sunday-7 is Saturday]

hour = 1 - ( 2 ) - 22 [1 is midnight-default( 2) is 1:00 am-  
22 is 11:00 pm]

## **Print alarm and exception filter summary**

With X11 release 19 and later, you can print the alarm status.

For further information, refer to *X11 system management applications* in the *Fault Clearing Guide Book 3 of 3*.

### **To print the alarm status**

Enter ASUM

## How traffic works

Traffic measurements are essential for monitoring the performance of the Meridian 1. All Meridian 1 systems are equipped with traffic data accumulation capabilities which function as part of the normal call processing. Traffic data must be selected, activated, and have a traffic TTY defined before it is printed out.

### Traffic data collection

There are five aspects to traffic data collection, as follows:

#### Accumulation

Any traffic action is automatically updated in the Accumulation Registers. Data in the Accumulation Registers cannot be accessed directly.

#### Holding

Data from the Accumulation Registers is transferred to the Holding Registers in accordance with user-defined schedules. Data in the Holding Registers can be examined at any time and will not change until the next scheduled transfer update. When data is transferred from Accumulation to Holding Registers, the Accumulation Registers are reset to zero.

#### Printing

When data is transferred to the Holding Registers, only the scheduled traffic options selected will be printed. However, any data for any of the options can be manually printed at any time.

#### Control

The Schedules, Printing Options, Threshold Levels and other traffic parameters are controlled by LD 2 commands.

#### Outputting

The cycle of transferring data from Accumulation to Holding Registers and the Outputting of data, is repeated in accordance with the schedules defined in LD 2. Only the terminal(s) defined in the configuration record receive the traffic data output for automatic printing. Any TTY however, can be used to invoke data at any time.

## System reports

Of the 12 System Reports available, TFS004 Processor Load is the most useful to technicians.

**TFS004 Processor load** - Input and Output Buffer Overflow Peg Counts and Call Register Overflow Peg Counts are more in line with a technicians job than the other ten outputs. A peg count is any number other than 0 which appears in a TFS004 peg count field.

The configuration record, LD 17, is used to establish the number of the following:

- ◆ Low Priority Input Buffers (LPIB)
- ◆ High Priority Input Buffers (HPIB)
- ◆ 500 Output Buffers (500B)
- ◆ SL1 Output Buffers (SL1B)
- ◆ Number of Call Registers (NCR)

If there are insufficient buffers or call registers assigned, then calls or features are lost.

TFS004 printouts are used to monitor buffer and call register overflow peg counts, as follows:

- ◆ Each output buffer peg count indicates a lost or incomplete feature.
- ◆ Each input buffer peg count indicates a call that could not be initiated.
- ◆ Each call register peg count indicates a call that has been lost.

**Example of a TFS004 printout**

|               |               |              |
|---------------|---------------|--------------|
| <b>200</b>    | <b>TFS004</b> |              |
| <b>147423</b> | <b>321786</b> | <b>00141</b> |
| <b>00000</b>  | <b>00000</b>  |              |
| <b>00000</b>  | <b>00000</b>  |              |
| <b>00000</b>  |               |              |
| <b>00000</b>  | <b>00000</b>  | <b>00000</b> |
| <b>00000</b>  | <b>00000</b>  |              |
| <b>00000</b>  | <b>00000</b>  | <b>00000</b> |

**TFS004 Format**

|                                             |                                 |                          |
|---------------------------------------------|---------------------------------|--------------------------|
| System ID                                   | TFS004                          |                          |
| Idle cycle count                            | CPU attempts                    | Load peak<br>peg count   |
| HPIB overflow peg<br>count                  | LPIB overflow peg count         |                          |
| 500B overflow peg<br>count                  | SL1B overflow peg count         |                          |
| CR overflow peg<br>count                    |                                 |                          |
| Rated Call Capacity<br>(Note)               | Max Real Time Used (RTU) (Note) | Percent of<br>RTU (Note) |
| Number of eliminated<br>observations (Note) | Hour of Max RTU (Note)          |                          |
| LLC1 blocked calls                          | LLC2 blocked calls              | LLC3<br>blocked<br>calls |

Note: Asterisks appear in these fields when the information is insufficient to generate a report.

**Peg count action**

If you observe peg counts in the HPIB, LPIB, 500OB, SL-1OB or CR fields, increase the indicated buffer or call register by 10 percent. Refer to the *administration input/output guide*. Use LD 17 PARM to change buffers and call registers.

**To print a current system report schedule**

Enter TSHS

**Example of a current system report schedule printout**

```
TSHS 01 01 31 12 (sd sm ed em)
00 23 1 (sh eh so)
1 2 3 4 5 6 7 (d d d d d d d)<cr>
```

sd = start day (1-31)sm = start month (1-12)

ed = end day (1-31)em = end month (1-12)

sh = start hour (0-23)eh = end hour (0-23)

so = schedule options:

0 = no traffic scheduled1 = hourly on the hour

2 = hourly on the half hour3 = every half hour

d = day of the week:1= Sunday to 7 = Saturday

**To set or change a current system report schedule**

Type SSHS 01 01 31 12-- sd sm ed em<cr>

00 23 1 -- sh eh so<cr>

1 2 3 4 5 6 7 -- d d d d d d d<cr>

sd = start day (1-31)sm = start month (1-12)

ed = end day (1-31)em = end month (1-12)

sh = start hour (0-23)eh = end hour (0-23)

so = schedule options:

0 = no traffic scheduled1 = hourly on the hour

2 = hourly on the half hour3 = every half hour

d = day of the week:1= Sunday to 7 = Saturday

**To print a TFS004 non-scheduled report at any time**

Type INVS 4



## TFC messages

### Back-filling messages with zeros

TFC messages provide responses to commands entered in LD 2. The remaining TFC messages are actual traffic outputs are detailed in the *Traffic Measurements* NTP.

#### TFC200

Syntax error. Illegal character has been input.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### TFC201

The parameter specified is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### TFC202

The loop specified is not equipped.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### TFC203

The card specified is not equipped.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### TFC204

The unit specified is not equipped.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### TFC205

Program bug — should never happen.

**ACTION:** Contact your technical-support group.

## **TFC206**

Customer specified is not equipped.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## **TFC207**

Traffic Print program is busy with scheduled output.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

## **TFC208**

Traffic Control program cannot be invoked from a maintenance set.

**ACTION:** Re-enter the command from the TTY.

## **TFC209**

The Network Traffic (NTRF) feature is not equipped.

**ACTION:** Ensure that this is the command you wanted to use.

## **TFC210**

There is no ESN customer data block.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **TFC211**

There is no ESN Data for the requested item.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

## **TFC212**

The NCOS data block does not exist in the system.

**ACTION:** Ensure that this is the command you wanted to use.

## **TFC213**

IMS or Command and Status Link (CSL) package not equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

**TFC214**

Channel specified is not equipped.

X08: Password does not have access to system commands.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TFC215**

Invalid input for Digital Trunk Interface (DTI) loop.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TFC216**

Command and Status Link (CSL) package not equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

**TFC220**

System cannot allocate space for Line Load Control (LLC) data block.

**ACTION:** Contact your technical-support group.

**TFC221**

Invalid command: Line Load Control (LLC) is not enabled.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TFC223**

The ISA package is not equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

**TFC400**

The user does not have access to system commands.

**ACTION:** Contact your technical-support group.

## TFC401

The user does not have access to this customer.

**ACTION:** Contact your technical-support group.

## TFC402

The user does not have access to Line Load Control commands.

**ACTION:** Contact your technical-support group.

## TFC403

NAS package is not equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

## TFC404

ISDN INTL SUP package (30B+D) is not equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

## TFC405

Invalid DN entered.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TFC406

The time synchronization DN has to be set for the new customer.

**ACTION:**

## TFC407

RPA package is not equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

## TFC408

No BRI package equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

**TFC409**

Failed to request information from the MISP.

**ACTION:** Contact your technical-support group.

**TFC410**

Calculation for the next Daylight Savings Time and Standard Time change cannot be done, because the system clock is not set.

**ACTION:** Set the system clock or use SDST ON command to enable the automatic change function.

**TFC411 FWTM AT <time> <date>**

The system clock has been changed forward one hour for Daylight Savings Time change.

**ACTION:** Information only, no action is required.

**TFC412 BWTM AT <time> <date>**

The system clock has been changed backward one hour for Standard Time change.

**ACTION:** Information only, no action is required.

**TFC414**

The Meridian 1 Packet Handler package is not configured. You cannot schedule TFS015 if this package is not equipped.

**ACTION:** If this command is the one you want to use, refer to the *administration guide*. Use LD 22 PRT, PKG to ensure that all the packages you have ordered are on the disk.

**TFC415**

Failed to request BRSC traffic information from MISP. MISP loop number and BRSC TN are printed.

**ACTION:** Check MISP and BRSC states.

**TFC416**

Currently, it is not the same customer you have just entered in the INVC command. If no previous SCFT, default is customer 0.

**ACTION:** Use TCFT/SCFT commands to find out or change the customer you are collecting features for.

## **TFC419**

A conference loop was overflowing. There may not be enough available slots on the loop.

**ACTION:** Contact your technical-support group

## **TFC0420**

ISDN Semi Permanent Connection (ISPC) package is not equipped. In Overlay 2, a request to set/clear Customer Traffic Report for ISPC links establishment (type=10) has been done using SOPC or COPC command but the ISPC is not enabled.

**ACTION:** Select a different report type or Unrestrict the ISPC package and reload PBX if necessary.

## **TFC0421**

ISDN Semi Permanent package is not equipped. In Overlay 2, a request set/clear the Customer Traffic Report for ISPC links established (type = 10) was attempted using the SOPC or COPC command.

**ACTION:** Select a different report type, or Unrestrict the ISPC package and reload the PBX if necessary. 

## TFN — Customer Network Traffic

For messages and descriptions refer to the *maintenance input/output guide*. TFN messages relate to the Network Traffic (NTRF) feature.

The remaining TFN messages are actual traffic outputs detailed in *Traffic Measurements* Northern Telecom Publications. 





## TFS — Traffic Measurement

For messages and descriptions refer to the *maintenance input/output guide*.

TFN messages relate to the Network Traffic (NTRF) feature. The remaining TFN messages are actual traffic outputs detailed in *Traffic Measurements* Northern Telecom Publications. 



## TMF — Test Multi-frequencies

Test Multi-frequencies is a resident program. TMF does not have an overlay load (LD) associated with it. For more information refer to *Software maintenance tools* in the *You should know this* chapter.

### TMF messages

#### TMF000

Program identifier.

**ACTION:** The TMF program is loaded and ready for you to enter commands.

#### TMF001

Invalid input: there are more than four characters in one field.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

#### TMF002

Invalid input: garbage datatype.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### TMF003

Invalid input: command field unknown.

**ACTION:** Ensure that this is the command you wanted to use.

#### TMF004

Invalid input: too many parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

#### TMF005

Last command is still in progress.

**ACTION:** Be patient. You are entering commands faster than the system can handle them.

**TMF006**

Invalid TN.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TMF007**

Invalid DOD trunk.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TMF008**

Trunk is busy or disabled.

**ACTION:** Use `STAT l s c u` in LD 32 to determine if trunk is busy or disabled. If the trunk is busy, try later when idle. If the trunk is disabled, use `ENLC l s c u` in LD 32 to enable the trunk. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

**TMF009**

Invalid TN. Shelf out-of-range (0 to 3).

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TMF010**

Invalid TN. Card out-of-range (1 to 10).

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TMF011**

Invalid set TN.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TMF012**

Defined telephone is busy or disabled.

**ACTION:** Use STAT l s c u in LD 32 to determine if the telephone is busy or disabled. If the telephone is busy, try later when idle. If the telephone is disabled, use ENLC l s c u in LD 32 to enable the telephone. If you need help with the commands or system responses go to the *NPR* chapter in this guide.

**TMF013**

Package restricted, overlay not allowed to load.

**ACTION:** No action required.

**TMF014**

Signalling type not defined.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TMF015**

Signalling type already defined.

**ACTION:** Ensure that this is the command you wanted to use.

**TMF016**

Command not valid for MFE signalling.

**ACTION:** Ensure that this is the command you wanted to use.

**TMF017**

Trunk Busy - DSI Timing.

**ACTION:** Be patient.

**TMF018**

Use loop and channel for digital loop TN.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TMF019**

Invalid Digital Loop TN.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command. 

# TMF

**1330** Test Multi-frequencies

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## TRA — LD 80 Tracing Calls

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Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter.

## How the TRA works

This program provides a means of tracing the progression of calls by printing a report on the call register contents.

### Call Trace

The Call Trace program examines the call registers for only an instant in time and does not update information as the call progresses.

The trace commands operate only when the diagnostic is active. Using the `****` command will stop the trace function.

### Enhanced Call Trace

With Call Trace Enhancement, the program provides a report each time the call register contents are updated with information.

TNs can be traced for a period of one second to 24 hours.

Up to three TNs or digital trunks can be tracked.

A time stamp with date and time in hours, minutes, and seconds is printed on the first line of each trace report.

The Multi-user Login package 242, is required, and must be enabled in LD 17.

It is recommended that the baud speed be set to 4800 or higher when using enhanced call trace. If you use a lower baud speed, this may overflow the print buffer, as the I/O ports have the lowest workschedule priority and will cause an initialization.

The enhanced trace enable commands will operate according to a defined time period even when the diagnostic is not active. Using the `****` command will not stop the enhanced trace function.

### Network Call Trace

For Network Call Trace see NCT chapter.



## When to use TRA

### Incomplete internal calls

When a call does not progress to the proper termination of established, a trace of that call to reveal the contents of main and auxiliary progress markers will indicate where the call stopped.

### Tracing incomplete trunk calls

This is used for tracing trunk calls where there is another switch involved that has an influence on the connection, supervision, and tear down of the call. The main and auxiliary progress markers are especially helpful with trunk call tracing.

## Alphabetical list of Call Trace outputs

This section provides definitions of the data output by the various Call Trace commands.

**ACTIVE** = the call is active

**AUX\_NARS** = Network Automatic Route Selection (NARS) data to follow

**AUX\_PM** = auxiliary progress mark may be any of the following depending on the **MAIN\_PM**:

- ◆ **ABSORBING** = performing digit manipulation on the call
- ◆ **AWAIT ANI** = waiting for Automatic Number Identification information
- ◆ **AWAITREPLY** = CPU is waiting for a response during a dial sequence
- ◆ **BSYG** = busy tone to originator
- ◆ **CDR-CALLRECORD** = CPU is outputting a CDR record
- ◆ **CDR-TIMING** = CPU is computing a CDR record
- ◆ **COMPLETE** = dialing is complete
- ◆ **DNTRANS** = DN translation to TN in progress
- ◆ **FAREND-OFF** = far-end off-hook

- ◆ NARS = call is a network call
- ◆ NOOUTPULS = outpulsing complete, originator receiving ringback
- ◆ OUTPULSING = outpulsing digits related to the call
- ◆ OVLF = resources not available, returning overflow to originator
- ◆ PAUSING = timed pause in a trunk call dialing sequence
- ◆ SPEEDCALL = performing speed call
- ◆ TEMPPATH = software timing, occurs when outpulsing digits on trunks
- ◆ TOLLCHECK = checking access restrictions for the call

AUX\_RGAT\_PM = Ring Again over trunk information

BEARER CAP = bearer capability, such as voice, 64K clear, 64K restricted and 56K

BUSY = unit or DN is busy

CALL REF #PRI = Call Reference number assigned by the system

CALL STATE = specifies the PRI call as active or inactive

CALLED NO = PRI dialed number

CALLING NO = PRI home location code and DN of originating party

CONF = Conference call

COS\_ORIG COS\_TERM = Class of Service restrictions for originating and terminating party. Possible values are:

- ◆ UNR = Unrestricted
- ◆ TLD = Toll Denied
- ◆ SRE = Semi-Restricted
- ◆ FRE = Fully Restricted
- ◆ FR1 = Fully Restricted class 1
- ◆ FR2 = Fully Restricted class 2
- ◆ CUN = Conditionally Unrestricted
- ◆ CTD = Conditionally Toll Denied

DARK\_CONSOLE = the call is being temporarily released by a console. Three types of recall are also output.

- ◆ RLSED = console released the call is getting recall
- ◆ FLASH = Flash recall
- ◆ CAMP = Camp-On recall

DIAL DN = the dialed number

DIAL xxx yy TTR zz = TDS on loop xxx and timeslot yy connected to Digitone Receiver timeslot zz

DG\_MAN xxx FCA\_INDEX xxx TOD x = Digit Manipulation Index, Free Area Screening, and Time of Day value

DIRECT MW\_CALL = Message Waiting indication is being given

DSBL = the unit has been disabled

DST = console destination information to follow

EMR100 = ACD emergency conference

EXP\_ROUTE = identifies an expensive route is being used for an ESN call

IDLE = TN or key is idle

HLDT = number of calls On-Hold at the console

HOLD = call is On-Hold

LOCKOUT = the unit is in lockout state

LOOP = attendant console LPK key

MAIN\_PM = this is the main progress mark which identifies the state of the call, possible values are listed below. See also AUX\_PM.

- ◆ BUSY = originator is receiving busy tone
- ◆ CDR = CPU is processing Call Detail Recording records
- ◆ DELAY DIAL = CPU is in a timing sequence while establishing a delay dial start trunk call
- ◆ DIAL = one or more digits have been dialed, system requires more digits
- ◆ ESTD = call is established between the originating and terminating party allowing them to communicate
- ◆ HALFDISC = Trunk with answer supervision has not received a disconnect signal from the far end during trunk idling
- ◆ READY = CPU is ready to process a function for the originating TN
- ◆ REOR = originator is receiving intercept treatment
- ◆ RING = originator is receiving ringback tone
- ◆ WAIT = Dial Tone Waiting queue
- ◆ WINKON = CPU is in a timing sequence while establishing a wink start trunk call
- ◆ MARP = indicates the TN is Multiple Appearance Redirection Prime

MBSY = unit is in maintenance busy state

NARS\_PM = NARS call progress mark

NEW\_RLIST\_INDEX NWQ\_RLIST\_ENTRY = network queue  
route list index and route list entry

NCOS\_ORIG, NCOS\_TERM = Network Class of Service for  
originating and terminating party

OHQ/CBQ = call is in the Off-Hook queue or Call Back queue

ORIG = originating party information, identifies the TN or DN  
where the call originates, output depends on type of telephone or  
console (Refer to *Originating and terminating formats*, that follow,  
for a description of the output.)

PRIORITY NWQ\_EXT\_ROUTE = the priority in the queue and  
extended route queuing

PTY SLOT = TDS priority timeslot; reserved by the CPU while a  
user is receiving tones (this timeslot may be required by the CPU to  
further process the call). Normally PTY SLOT is the same timeslot  
as SLOT.

QUEU = a call may be in one of the following CPU timing queues:

128 = 128 ms timing queue

2S = 2 second timing queue

CAD = cadence

CDR = Call Detail Recording processing queue

DIAL = dialing queue

IDLE = idle queue

NONE = call is not in a timing queue

RING = ringing queue

RCVR **xx** SET **yy** = timeslot to the Digitone Receiver (xx) and the telephone (yy)

RGAT\_PM = Ring Again progress mark

RL\_IND **xx** RL\_ENT **xx** = NARS/BARS route list index and entry number

SRC = console source information to follow

SBSY = unit is software busy

SLOT = the timeslot used by the originator and terminator

TALKSLOT = identifies the timeslot and junctor (if applicable) used by the originator and terminator

TDTN = Tone Digit Switch loop and timeslot

TERM = terminating party information, identifies the TN or DN where the call terminates, output depends on type of telephone or console (Refer to *Originating and terminating formats*, that follow, for the description of the output.)

TGAR\_ORIG, TGAR\_TERM = Trunk Group Access Restriction for originating and terminating party

TTR = Digitone Receiver TN

## Originating and terminating formats

The Call Trace originating and terminating party information depends on the types of telephone, console or trunk as shown below.

- ◆ Single line telephones:
  - **ORIG l s c u cust dn 500**
  - **TERM l s c u cust dn 500**
- ◆ Multi-line telephones:
  - **ORIG l s c u key# keytype cust dn settype**
  - **TERM l s c u key# keytype cust dn settype**
- ◆ Attendant Consoles:
  - **ORIG l s c u cust att# lpk# ATTN consoletype**
  - **TERM l s c u cust att# lpk# ATTN consoletype**
- ◆ Trunks:
  - **ORIG l s c u rtyp RMBR rrr mmm**
  - **TERM l s c u rtyp RMBR rrr mmm**

Explanation of the above originating and terminating party format is as follows:

- ◆ **l s c u** = TN
- ◆ **consoletype** = console type (ATT, 1250, 2250)
- ◆ **cust** = customer number
- ◆ **dn** = directory number
- ◆ **key#** = multi-line telephone key number
- ◆ **keytype** = multi-line telephone key type (SCR, MCR, HOT, etc.)
- ◆ **lpk#** = console loop key number
- ◆ **rrr mm** = trunk route and member number
- ◆ **rtyp** = trunk route type (TIE, CO, FX, etc.)
- ◆ **settype** = multi-line telephone type (SL1, 2008, 2317, etc.)

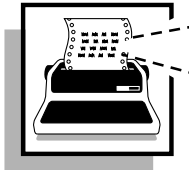
## Example trace of a call placed to a 500-type set

The scenario is as follows. An active call from key 0 on an M2008, to a 500-type telephone and customer number is 06.

The trace command is used to elicit an output:

- ◆ TRAC 4 0 5 0 (4 0 5 0 is the TN of the telephone), or
- ◆ TRAC 6 5100 (6 is the customer number and 5100 is the DN of the telephone)

LD 80 output to the maintenance terminal is as follows:



```
ACTIVE TN 004 0 05 00
ORIG 04 0 0 05 00 6 SCR 0 5100 2008
TERM 008 0 03 06 6 2121 500
DIAL DN 2121
MAIN PM ESTD
TALKSLOT ORIG 22 TERM 29
QUEUE NONE
```

From the above output the Call Trace information is as follows:

- ◆ **ACTIVE** = the status of the call at the instant Call Trace was applied
- ◆ **ORIG** = the unit originating the call or calling set:
  - 004 0 05 00 = terminal number; loop 4, shelf 0, card 5, unit 0
  - 6 = customer
  - SCR 0 5100 = single call ringing, key 0, DN of 5100
  - 2008 = telephone type



- ◆ TERM = the unit terminating the call or the called set:
  - 008 0 03 06 = terminal number; loop 8, shelf 0, card 3, unit 6
  - 6 = customer
  - 2121 = DN of the terminating set
  - 500 = telephone type
- ◆ DIAL DN 2121 = indicates the DN or digits dialed by the originating set
- ◆ MAIN PM ESTD = indicates the call has progressed to the established state and the sets are in the voice and data mode
- ◆ TALKSLOT ORIG 22 TERM 29 = tells the originating telephone is assigned time slot 22 and the terminating telephone is assigned time slot 29
- ◆ QUEUE NONE = neither set is in any queue

## Enhanced trace example

The enhanced call trace output includes a time stamp that appears on the first line of the output.

The TN or digital trunk prints out only when there has been a change to the call register. The TN or trunk is printed only once.

Sample output:

.14:00:02 12/25/1992

KEY 0 MCR MARP ACTIVE TN 001 0 02 01

ORIG 001 02 01 0 SCR MARP 1 5011 SL1

TERM 001 0 02 00 0 MCR MARP 1 5006 SL1

DIAL DN 5006

MAIN\_PM ESTD

TALKSLOT ORIG 19 TERM 21

QUEU NONE

KEY 1 TRN IDLE

KEY 2 AO3 IDLE

.  
.  
.

KEY 8 RND

KEY 9 RLS

.14:00:04 12/25/1992

IDLE TN 015 04

### Example trace of an outgoing ISDN Call

The scenario is: outgoing call from key 0 on an M2317, to 500-type telephone customer number is 05

The trace command is used to elicit an output:

◆ **TRAC 5 6050** (5 is the customer number and 6050 is the telephone DN), or

◆ **TRAC 16 0 2 0** (16 0 2 0 is the telephone TN)

LD 80 output to the maintenance terminal is as follows:

ACTIVE TN 016 0 02 00

ORIG 016 0 02 00 5 SCR 0 6050 2317

TERM 018 16 TIE RMBR 24 12

DIAL DN 7873107

MAIN PM ESTD

TALKSLOT ORIG 13 TERM 13

QUEUE NONE

---- ISDN PRA CALL (TERM) ----

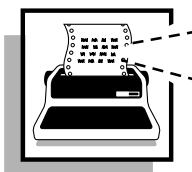
CAL REF # = 16

BEARER CAP = VOICE

CALL STATE = 10 ACTIVE

CALLING NO = 4376050

CALLED NO = 7873107



From the above output the Call Trace information as follows:

- ◆ **ACT**  
IVE = the status of the call at the instant Call Trace was applied
- ◆ **ORIG** = the originator of the calls telephone set:
  - M2317 = telephone type
  - TN = 016 0 02 00
  - DN = 6050 on SCR key 0
- ◆ **TERM** = the PRI TIE trunk terminating the call:
  - Outgoing PRI TIE trunk: loop 018 channel 16; route 24 member 12
- ◆ **DIAL DN** = the digits dialed by the originating set, 7873107
- ◆ **MAIN PM** = the call has progressed to the established state and the sets are in the voice and data mode
- ◆ **TALKSLOT** = the originating telephone is assigned time slot 13 and the terminating PRI TIE is assigned time slot 13
- ◆ **QUEUE** = neither set nor trunk is in any queue

There are three basic commands:

- ◆ **TRAC** for tracing sets and trunks
- ◆ **TRAT** for tracing attendant consoles
- ◆ **TRAD** for tracing calls through Computer PBX Interface (CPI), Digital Trunk Interface (DTI), Primary Rate Interface, or Digital Link Interface (DLI) loops.

The TRAC command can be used to print the tone detector TN if a tone detector is used at the time of the call trace.

**TRA basic commands**

| Command                                               | Description                                                                                                                                                                        | Release |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Trace calls associated with telephone set keys</b> |                                                                                                                                                                                    |         |
| <b>TRAC I s c u k</b>                                 | Trace call associated with key <b>k</b> on specified unit.                                                                                                                         | basic-1 |
| <b>Trace calls by DN or local steering codes</b>      |                                                                                                                                                                                    |         |
| <b>TRAC c dn</b>                                      | Trace calls for customer <b>c</b> Directory Number or Local Steering Code <b>dn</b> .                                                                                              | basic-1 |
| <b>Trace unit calls on telephone sets and trunks</b>  |                                                                                                                                                                                    |         |
| <b>TRAC I s c u</b>                                   | Trace calls associated with this unit. If a trace is performed on a DTR, an error message is output.                                                                               | basic-1 |
| <b>Trace Attendant Console calls</b>                  |                                                                                                                                                                                    |         |
| <b>TRAT c a</b>                                       | Trace calls for customer <b>c</b> , attendant <b>a</b> .                                                                                                                           | basic-1 |
| <b>TRAT c a k</b>                                     | Trace calls associated with key <b>k</b> of attendant console <b>a</b> for customer <b>c</b> .                                                                                     | basic-1 |
| <b>TRAT I s c u</b>                                   | Trace attendant calls, this unit.                                                                                                                                                  | basic-1 |
| <b>TRAT I s c u k</b>                                 | Trace attendant calls on key <b>k</b> .                                                                                                                                            | basic-1 |
| <b>Trace Basic Rate Interface calls</b>               |                                                                                                                                                                                    |         |
| <b>TRAC I s c DSLx</b>                                | Trace calls on Digital Subscriber Loop <b>x</b> (0-7).<br>BRI DNs can be traced with the TRAC C DN command. For TRAC L S C U, enter U = DSL0 to DSL7 for Digital Subscriber Loops. | bri-18  |
| <b>Trace route calls, list type and status</b>        |                                                                                                                                                                                    |         |
| <b>TRAC c acid</b>                                    | List route number, type and status of each trunk for customer <b>c</b> .                                                                                                           | basic-1 |
| <b>TRAC c r m</b>                                     | Trace calls, customer <b>c</b> , route <b>r</b> , member <b>m</b> .                                                                                                                | basic-1 |

# TRA

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| TRA basic commands (continued)                         |                       |         |
|--------------------------------------------------------|-----------------------|---------|
| Command                                                | Description           | Release |
| Print auxiliary data related to NARS, Bars, CDP or RGA |                       |         |
| <b>TRAC xx...xx<br/>DEV</b>                            | Print auxiliary data  | basic-1 |
| <b>TRAT xx...xx<br/>DEV</b>                            | print auxiliary data. | basic-1 |

Print the auxiliary data related to the call for Network Alternate Route Selection (NARS), Basic Alternate Route Selection (BARS), Coordinated Dialing Plan (CDP) or Ring Again (RGA). this additional data can be retrieved by appending DEV to any of the TRAC commands. Example:  
TRAC I s c u DEV

When TYPE is output, E = extended route (not expensive).

**Enhanced trace commands**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Trace information**

|             |                                                                                                                                                 |          |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>FITR</b> | Get information about the enhanced trace function. This command queries the TNs or Digital trunks being traced with the ENTC and ENTD commands. | basic-19 |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------|

The output is shown as follows:

| ENTRY | TN or TRUNK | TIME | STATUS |
|-------|-------------|------|--------|
| 1     | 001 0 01 01 | 0030 | OFF    |
| 2     | 015 04      | 1200 | OFF    |

**Enable the enhanced trace command for a TN**

|                       |                                             |          |
|-----------------------|---------------------------------------------|----------|
| <b>ENTC l s c u t</b> | Enable the enhanced trace command for a TN. | basic-19 |
|-----------------------|---------------------------------------------|----------|

This command enables the trace capability for the TN specified. Note that this command does not start the trace immediately. Use the GOTR command to begin the trace operation.

Where: **l** = loop, **s** = shelf, **c** = card, **u** = unit and **t** = the length of time the trace command operates.

The format for the trace command duration (**t**) is HHMM, where **HH** = hours (0-23) and **MM** = minutes (0-59). For example, for a duration of 5 minutes, t = 0005; for 1 hour, t = 0100

The time duration must be at least 1 minute, and no more than 23 hours.

**Enable the enhanced trace command for a digital trunk.**

|                     |                                                        |          |
|---------------------|--------------------------------------------------------|----------|
| <b>ENTD l c h t</b> | Enable the enhanced trace command for a digital trunk. | basic-19 |
|---------------------|--------------------------------------------------------|----------|

This command enables the trace capability for the TN specified. Note that this command does not start the trace immediately. Use the GOTR command to begin the trace operation.

Where: **l** = loop, **s** = shelf, **c** = card, **u** = unit and **t** = the length of time the trace command operates.

The format for the trace command duration (**t**) is HHMM, where **HH** = hours (0-23) and **MM** = minutes (0-59). For example, for a duration of 5 minutes, t = 0005; for 1 hour, t = 0100. The time duration must be at least 1 minute, and no more than 23 hours.

| Enhanced trace commands (continued)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Command                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Release  |
| <b>Begin enhanced trace commands</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| <b>GOTR</b>                                  | Begin enhanced trace commands. This command starts the trace operation specified with the ENTC and ENTDC commands.                                                                                                                                                                                                                                                                                                                                                                           | basic-19 |
| <b>Disable all enhanced trace commands</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| <b>DALL</b>                                  | Disable all enhanced trace commands.<br>This command disables all trace commands enabled with ENTC or ENTDC command. You must stop the trace with the STPT command before disabling all the commands with DALL.                                                                                                                                                                                                                                                                              | basic-19 |
| <b>Disable the enhanced trace operation.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| <b>DIST n</b>                                | Disable the enhanced trace operation.<br>This command disables the trace command enabled with ENTC or ENTDC command. This command is used once a trace command is started then stopped.<br>Where: <b>n</b> = the entry number (as seen with the FITR command)                                                                                                                                                                                                                                | basic-19 |
| <b>Stop the enhanced trace command</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| <b>STPT</b>                                  | Stop the enhanced trace command.<br>This command stops the enhanced trace operation specified with the ENTC and ENTDC commands. This can be used at any time during the trace operation. This does not disable the commands; they can be restarted with the GOTR command. When they are restarted, the duration timer is reset.<br>For example: the timer is set at 30 minutes, but the trace is stopped after 2 minutes. When the trace is restarted (GOTR) the timer is set to 30 minutes. | basic-19 |



**Enhanced trace commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

**Disable enhanced trace commands by a maintenance telephone**

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>nn+9913+x=y</b> | <p>The enhanced trace commands can be disabled through a maintenance telephone by dialing the following:</p> <ul style="list-style-type: none"><li><b>nn</b> = customer SPRE access code</li><li><b>9913</b> = feature code to display for message display control</li><li><b>x</b> = action code (0 to deactivate)</li><li><b>yy</b> = message monitor code (02 for enhanced trace messages)</li></ul> <p>A second dial tone indicate that the command was successful. Overflow tone is heard if the command is entered incorrectly. Once this command has been entered, a user entering FITR from the TTY will receive the period (.) prompt.</p> | basic-19 |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|

## TRA messages from LD 80 input errors

The TRAcE messages are the systems response to keyboard input commands that cannot be acted upon by the LD 80 call trace diagnostic.

### TRA100

Illegal command.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### TRA101

Illegal input parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### TRA105

Input DN is special prefix.

**ACTION:** Check to make sure your data is correct and re-enter the command. To check for a special prefix, use LD 21 PRT CDB, and look for SPRE.

### TRA106

Illegal input parameters.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### TRA108

Illegal digits stored in Call Register.

**ACTION:** Contact your technical support group.

### TRA110

Fails TNTRANS (or loop disabled).

**ACTION:** Use STAT 1 in LD 32 to check to see if the loop is disabled. If the loop is disabled, use the ENLL 1 to enable the card.

### TRA111

Fails TNTRANS.

**ACTION:** Contact your technical support group.

**TRA112**

Fails TNTRANS.

**ACTION:** Contact your technical support group.

**TRA113**

Fails TNTRANS.

**ACTION:** Contact your technical support group.

**TRA120**

Fails DNTRANS.

**ACTION:** Contact your technical support group.

**TRA121**

Call trace fails.

**ACTION:** Re-enter the command.

**TRA122**

Call trace fails.

**ACTION:** Re-enter the command.

**TRA130**

Call trace fails.

**ACTION:** Re-enter the command.

**TRA142**

Attendant number exceeds the maximum number defined.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA150**

Digitone Receiver (TTR/DTR) cannot be traced.

**ACTION:** Input \* (uppercase 8) and carriage return to stop the printout.

**TRA160**

Specified key does not exist.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA180**

Loop is not a Digital Trunk loop.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA181**

Channel to TN conversion failed.

**ACTION:** Re-enter the command.

**TRA182**

Loop is a DTI loop.

**ACTION:** Use the TRAD command.

**TRA190**

TN cannot be traced.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA191**

DN cannot be traced.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA201**

Route member out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA202**

Route member does not exist.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA253**

MFR cannot be traced.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA300**

A Local Steering Code (LSC) without an associated DN cannot be traced.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRA301**

Your TNTRANS:TDET\_TN has failed. Your PRINT\_TDET may be corrupted by the procedure RGAT\_INSERT\_TIME.

**ACTION:** Contact your technical support group.

**TRA304**

Invalid digit stored in BRI message Call Register.

**ACTION:** Contact your technical support group.

**TRA305**

The Multi-User Login feature is not active.

**ACTION:** Refere to the *administration input/output guide*, use LD 22 PRT, PKG to ensure that package 242, MULTI\_USER is on the disk. Use LD 22 PRT, CFN to check if prompt MULTI\_USER = YES, if not use LD 17 to change the response.

**TRA306**

The time duration is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command. The correct time format is: hh = 00-23, mm = 00-59.

**TRA307**

Illegal digit(s) in stored M911 Auxiliary Call Register.

**ACTION:** Contact your technical support group.

**TRA308**

Illegal digit(s) stored in DN field.

**ACTION:** Contact your technical support group.

**TRA309**

More than 3 ENTC/ENTD commands have been entered. You cannot enter the commands again.

**ACTION:** Check to make sure your data is correct.

## TRA310

The Trace has been stopped because the traced TN or Digital trunk has been relocated or removed.

**ACTION:** Information only, no action required.

## TRA311

More than one GOTR has been entered. You cannot enter the command again.

**ACTION:** Check to make sure your data is correct.

## TRA312

The same TN or Digital trunk has been entered more than once. The same TN or Digital trunk cannot be traced simultaneously by the enhanced trace commands.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TRA313

You must enter ENTC/ENTD before entering GOTR.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TRA314

You must enter the STPT command before entering DALL ENTC or DALL ENTD.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TRA317

Cannot use Enhanced trace on a phantom TN/DN.

**ACTION:** Use the regular trace commands. 

## TRA0319

An illegal digit is stored in the TWR1 CLID field.

**ACTION:** Contact your technical support group.

## TRK — LD 36, 41 Trunk Diagnostic

### In this chapter

|                                                          |      |
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| How the TRK works . . . . .                              | 1357 |
| Using trunk messages . . . . .                           | 1358 |
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| TRK messages . . . . .                                   | 1367 |

Before changing circuit cards, be aware of the procedures outlined in *Do this when replacing circuit cards*, found in the *Hardware maintenance tools* chapter in this guide.

## Identifying resident and non resident messages

### How to tell resident trunk messages from non-resident

#### Resident

The following TRK ranges identify resident trunk messages:

**TRK100 to TRK136**

**TRK150 to TRK153**

**TRK155 to TRK156**

**TRK160 to TRK186**

**TRK210 to TRK236**

**TRK240 to TRK256**

#### Non-resident

TRK messages not listed above are non-resident trunk messages, including TRK222 without a TN, TRK236 without a TN and TRK243. These non-resident TRK messages are output when LD 36 and LD 41 are manually invoked or run automatically as a daily routine.



## How the TRK works

The following three paragraphs describe trunk messages generated by the system.

### **Detects trunk connection failures with a threshold setting**

The resident trunk diagnostic detects analog trunk seizure and supervision failures. Each failure activates a counter. The counter increments for a failure and decrements when proper seizure and supervision occurs. The counter starts at zero but never goes below zero. When the counter value exceeds a fixed threshold of 30, a TRK message outputs to a maintenance terminal identifying a failed trunk.

### **Resets the threshold**

The threshold can only be exceeded once for a specific fault type per trunk route. Therefore only one TRK message will appear on the maintenance terminal even if the trunk continues the same failure. The following actions reset the threshold counter to zero:

- ◆ a technician using the RSET command in LD 36 or LD 41
- ◆ a daily or background routine running LD 36 or LD 4
- ◆ a system initialization

### **Sets threshold counting values**

LD 16 sets the increment count or “*ic*” and decrement count or “*dc*” values. These values define a percentage of total attempts needed to exceed the threshold or return the count to zero. Therefore a high *ic* value increases the counter more rapidly, causing the counter to exceed the threshold with fewer detected failures than a low *ic* value.

## Using trunk messages

When a resident trunk message and an accompanying TN appear on a maintenance DTE, perform a LD 36 or LD 41 manual test on the trunk.

In addition to resident trunk messages on the maintenance DTE, a record is kept in the system memory for each threshold violation error message. Trunks which have been identified by such a message can be listed by entering the LD 36 or LD 41 command LOVF for any trunk route.

Potentially, a trunk may fail by not detecting incoming calls. The resident trunk threshold mechanism cannot be used to detect such failures, so the Meridian 1 maintains a count of the number of days since an incoming call was received on each trunk. The LD 36 or LD 41 LMAX command can check for trunks that have been idle or not used for days. Depending on trunk traffic, this could indicate a faulty trunk card.

It is possible to determine the number of days since an incoming call was processed for each trunk using the LD 36/41 LDIC command. Subsequently trunk tests should be performed on those trunks showing the highest counts.

## Resident trunk message format

Messages output by the resident trunk diagnostic have the following format:

**TRK***wxy* **L S C U**

**wx** is a two digit number indicating the type of analog trunk as follows:

**10**=WATS

**11**=FEX

**12**=CCSA

**13**=DID

**15**=CO

**16**=Tie

- 17=Paging
- 18=Dictation
- 19=Recorded Announcement
- 20=AIOD
- 21=CCSA - ANI
- 22=CAMA
- 23=RLT - main; CAS systems
- 24=ATVN; AUTOVON systems
- 25=RLT - Remote
- 26=Modem

y is the last number in the TRK message indicating the problem. For example: 0 = SHORT HOLD (with the LD 16 RDB prompt shown in brackets). Various problems are listed as follows:

**TRKwx0** = SHORT HOLD (HOLD)—An unacceptably large percentage of calls on the trunk were held for a short period. This applies to trunks which are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

**TRKwx1** = SEIZURE FAILURE (SEIZ)—Seizure supervision from the far-end can take several forms: some CO/Exchange line trunks are seized by the far-end placing ringing on the Ring lead (B lead in the UK) or grounding the Tip lead (A lead in the UK). Some loop start trunks are seized by a low resistance termination on the trunk leads. Some trunks are seized by battery and ground placed on the trunk leads, and some E & M trunks are seized by a ground placed on the E lead.

**TRKwx2** = RINGING ON SEIZED TRUNK (ILLR)—Ringing is present on the answered trunk call.

**TRKwx3** = RING OR GROUND DETECTOR FAILURES (RGFL)—Specifies the percentage threshold for trunks which fail to produce the expected ringing and ground changes.

**TRKwx4** = SUPERVISION FAILURE (SVFL)— Answer supervision to the far-end can take several forms. Some loop start trunks provide answer supervision by reversing battery and ground on the trunk leads. Some E & M trunks provide answer supervision by placing battery on the M lead. Some CO trunks provide answer supervision by placing low resistance on the loop.

**TRKwx5** = REPETITIVE MESSAGES — The trunk is sending incorrect data to the processor. Threshold is a fixed value and is not overlay programmable.

**TRKwx6** = RELEASE FAILURE—No disconnect supervision is being received from the trunk.

## Why two loads?

Insufficient space in the overlay area requires the trunk diagnostic to be split into two programs. Program 41 is an extension of program 36.

## Using LD 36 and LD 41 for testing

LD 36 and LD 41 allow trunks to be tested from either the Meridian 1 site or a remote test center.

### When testing from a site

The maintenance DTE is connected directly to the Meridian 1 and individual trunks can be seized and a test call can be performed on the trunk in the normal manner.

### When testing from a remote test center

The maintenance DTE is located some distance from the Meridian 1 and they are connected through modems. In this case a speech path must be set up to monitor the testing. This is accomplished by directing the Meridian 1 system call to a telephone directory number (DN) at the test center. Tests are performed on the Meridian 1 trunks by entering commands at the DTE and the technician can listen for dial tone, outpulsing and test tones with the test center telephone.

## Tone indicates good trunks

When a trunk is seized, the system prompts “**DN?**” for a DN. When the DN is entered, the system calls that number automatically. When the call is answered a pure tone indicates the validity of the speech path. New trunks can be tested in the same manner with the maintenance telephone.

**Note 1:** When the Trunk Failure Monitor (TFM) package 182 is activated, a failed trunk is displayed as BUSY. The failed trunk remains in the BUSY state and is not enabled or disabled by the enable/disable command.

**Note 2:** When LD 36 is defined as a midnight or daily routine, this program searches for trunks not used during the day and updates the total number of days that the trunks have been idle.

## List of commands

Commands in this section, listed in the following order, will do the following:

### **LD 36 or LD 41:**

- ◆ clear minor alarms and the maintenance display
- ◆ check card status
- ◆ list threshold overflows
- ◆ reset thresholds
- ◆ end test

### **LD 36:**

- ◆ remotely test a trunk
- ◆ disable or enable a unit
- ◆ list the days when a trunk was last used
- ◆ list when no supervision was received
- ◆ test music and recorded announcement trunks
- ◆ test Periodic Pulse Metering (PPM) trunks
- ◆ query trunks for which no disconnect supervision was received
- ◆ test Automatic Number Identification (ANI) trunks

### **LD 41:**

- ◆ test Automatically Identified Outward Dialing (AIOD) trunks

**LD 36 and LD 41 common commands**

| Command                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Release |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Clear minor alarms or CPU display</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>CDSP</b>                               | Clear the maintenance display on active CPU to 00 or blank.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | basic-1 |
| <b>CMIN ALL</b>                           | Clear minor alarm indication on all attendant consoles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | basic-1 |
| <b>CMIN c</b>                             | Clear minor alarm indication on attendant consoles for customer c.                                                                                                                                                                                                                                                                                                                                                                                                                                                               | basic-1 |
| <b>Check trunk card status</b>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>STAT I s c</b>                         | Check software status of card.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | basic-1 |
| <b>Disable trunk card for replacement</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>DISC I s c</b>                         | <p>Disable specified card for replacement. Disabled DID trunks are placed in the answer state.</p> <p>If Recorded Telephone Dictation (RTDT) cards are to be software enabled or disabled, the Out-of-Service (OS) lead should be connected to ground. On completion of the task, ground can be removed.</p> <p>When the Trunk Failure Monitor (TFM) package 182 is activated, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit, it stays in the BUSY state.</p> | basic-1 |
| <b>Enable trunk card</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>ENLC I s c</b>                         | <p>Enable specified card. If unit resides on a disabled shelf or card, then status is output and enable is not performed.</p> <p>When the Trunk Failure Monitor (TFM) package 182 is activated, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit, it stays in the BUSY state.</p>                                                                                                                                                                                | basic-1 |
| <b>List threshold overflows</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>LOVF c r</b>                           | <p>List threshold overflows for specified customer and route.</p> <p>The overflows are kept in memory when the resident trunk monitor outputs a TRK message. This command allows you to list each threshold violation error message for any trunk route.</p>                                                                                                                                                                                                                                                                     | basic-1 |

**LD 36 and LD 41 common commands (continued)**

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

# TRK

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### Reset thresholds

|                     |                                                       |         |
|---------------------|-------------------------------------------------------|---------|
| <b>RSET I s c u</b> | Reset threshold counters to zero for specified trunk. | basic-1 |
|---------------------|-------------------------------------------------------|---------|

### Terminate test in progress

|            |                            |         |
|------------|----------------------------|---------|
| <b>END</b> | Terminate test in progress | basic-1 |
|------------|----------------------------|---------|

## LD 36 commands

### LD 36 commands

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|

### Set up monitor link with test center

|             |                                                                                                                                                                                    |         |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>CALL</b> | Set up monitor link with test center. Same as the CALL I s c command except any PTRS trunk in the system can be selected. The CALL command must be terminated using the * command. | basic-1 |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

### Set up monitor link with test center

|                     |                                                  |         |
|---------------------|--------------------------------------------------|---------|
| <b>CALL I s c u</b> | Set monitor link with test center on this trunk. | basic-1 |
|---------------------|--------------------------------------------------|---------|

Set monitor link with test center on this trunk. Sets up a monitor link (call) between the Meridian 1/Meridian SL-1 and the test center on the trunk specified. The system prompts "DN?" for the directory number. When the PTRS directory number is entered, the system calls up that number automatically. When the call is answered, a pure tone indicates the validity of the link. This sequence can take up to 14 seconds on a trunk without answer supervision. The END command disconnects the call.

The CALL I s c u command is not allowed when the diagnostic program is being run from a maintenance telephone. During the CALL command, On-Hook and Off-Hook signals from the maintenance telephone may initiate BUG105.

Note: When the monitor is enabled, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit (it stays in the BUSY state).

### LD 36 commands (continued)

| Command | Description | Release |
|---------|-------------|---------|
|---------|-------------|---------|



**Disable trunk unit**

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>DISU I s c u</b> | Disable specified unit. Disabled DID trunks are placed in the answer state.<br><br>When the French (FRTA) package 197 is activated, the units on CO trunks are not busied when they are disabled.<br><br>When the Trunk Failure Monitor (TFM) package 182 is activated, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit, it stays in the BUSY state. | basic-1 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**Enable trunk unit**

|                     |                                                                                                                                                                                                                                                                                                                                            |         |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>ENLU I s c u</b> | Enable specified unit. If unit resides on a disabled shelf or card, then status is output and enable is not performed.<br><br>When the Trunk Failure Monitor (TFM) package 182 is activated, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit, it stays in the BUSY state. | basic-1 |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

**List number of days last used and no disconnect supervision**

|                     |                                                                                |         |
|---------------------|--------------------------------------------------------------------------------|---------|
| <b>LDIC c r</b>     | List number of days since last incoming call for specified customer and route. | basic-1 |
| <b>LDIC I s c u</b> | List number of days since last incoming call on specified trunk.               | basic-1 |
| <b>LMAX c r</b>     | List trunk with maximum idle days for specified customer and route.            | basic-1 |
| <b>LNDS c r</b>     | List trunks with no disconnect supervision for specified customer and route.   | basic-1 |

**Test music and recorded announcement trunks**

|                |                                                                     |         |
|----------------|---------------------------------------------------------------------|---------|
| <b>MUS c r</b> | Test music device for specified customer and route.                 | basic-1 |
| <b>RAN c r</b> | Test recorded announcement device for specified customer and route. | basic-1 |

# TRK

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### LD 36 commands (continued)

| Command                                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Release |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Seize trunk for testing from a maintenance telephone</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>TRK I s c u</b>                                          | <p>Seize trunk for testing.</p> <p>Seizes the specified trunk for outpulsing and testing. If the command is issued from a maintenance telephone, dial tone is heard followed by outpulsing when the directory number is entered.</p> <p>If a trunk is to be seized for outpulsing and testing from a remote test center (not a maintenance telephone), a monitor link, so you can hear the tones, must first be set up using the CALL I s c u command. This must not be over the trunk to be tested.</p> <p>With the monitor link set up, the TRK I s c u command is input to select the trunk to be tested. The system then prompts with "DN?" and the directory number is input via the TTY. Normal speech path connections are made between the monitor link and the trunk being tested.</p> <p>Disconnect by entering END, by going On-Hook if an SL-1 telephone is used or by entering *. END also disconnects the monitor link.</p> <p><b>Note:</b> This command cannot be used to seize an ISL trunk.</p> | basic-1 |
| <b>Test Periodic Pulse Metering (PPM) trunk</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>TPPM I s c u</b>                                         | <p>Test the specified PPM trunk.</p> <p>This command is not applicable when the Meridian 1/Meridian SL-1 is connected to 1 TR 6 international ISDN PRA).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | basic-1 |

## LD 41 commands

| LD 41 commands                                             |                                                                                                                                                                                                                        |         |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Command                                                    | Description                                                                                                                                                                                                            | Release |
| Test Automatically Identified Outward Dialing (AIOD) trunk |                                                                                                                                                                                                                        |         |
| <b>AIOD I s c</b>                                          | Test AIOD card                                                                                                                                                                                                         | basic-1 |
| <b>AIOD MSG I s c</b>                                      | Output codes transmitted to Public Telephone Rated Service (PTRS). Output on TTY all 8-digit codes bring transmitted to PTRS by AIOD card. Response is OK if monitor is set. Not available in X11 Release 9 and later. | basic-1 |

## TRK messages

### TRK000

LD 36 program identifier.

**ACTION:** The TRK program is loaded and ready for you to enter commands.

### TRK001

Invalid command.

**ACTION:** Ensure that this is the command you wanted to use.

### TRK002

Invalid argument(s).

**ACTION:** Check to make sure your data is correct and re-enter the command.

### TRK003

Invalid or out-of-range TN.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### TRK004

Too many digits in the DN.

**ACTION:** Check to make sure your data is correct and re-enter the command.

## TRK005

Unit requested is not a trunk.

**ACTION:** Ensure that this is the command you wanted to use.

## TRK006

Unit requested or all trunks busy.

**ACTION:** Wait until the unit or trunks are idle and re-enter the command.

## TRK007

Command not valid unless a monitor link exists. For example, a trunk link between the SL-1 system and the test center.

**ACTION:** Refer to *Set up monitor link with test center* in the LD 36 commands table in this chapter. Use CALL command if you are at a test center or abort and reload from a Meridian 1 location.

## TRK008

No CO trunk defined in the system. Cannot use command.

**ACTION:** Ensure that this is the command you wanted to use.

## TRK009

No maintenance telephone available for the call. Maintenance telephone may be busy.

**ACTION:** Wait until the maintenance telephone is idle.

## TRK010

Trunk must be a CO trunk.

**ACTION:** Ensure that this is the command you wanted to use.

## TRK011

Call command not allowed from a maintenance telephone.

**ACTION:** Use the trunk command from a DTE directly.

## TRK012

Customer or route does not exist or is out range.

**ACTION:** Refer to the *administration input/output guide*, use LD 16 to program a route or use LD 20 or LD 21 RDB or CDB to check range of input. The range format for the customer is 0 to 9 and the route is 0 to 127.

**TRK013**

The unit requested is not an incoming trunk. Command is allowed only for incoming trunks.

**ACTION:** Ensure that this is the command you wanted to use.

**TRK014**

Unexpected call status change. For example, disconnect from far-end.

**ACTION:** Enter the request again. If the response is the same, try another test number.

**TRK015**

Another party attempted to use system maintenance set.

**ACTION:** Reissue the CALL or TRK command.

**TRK016**

Trunk command not valid for AIOD and RLT-main trunks.

Command is allowed only for AIOD and RLT-main.

**ACTION:** Ensure that this is the command you wanted to use.

**TRK017**

Seize failure or failure to acknowledge seizing. Also occurs when LD 36 is used with a remote maintenance phone to dial an ISL TIE line. BUG3068 occurs at the far-end.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK018**

STAT, DISC and ENLC commands can only be used with trunk cards.

**ACTION:** Ensure that this is the command you wanted to use.

**TRK019**

Response to AIOD command. The card requested is busy or the system has AIOD traffic queued for the AIOD facility. This condition has not changed over the last 15 seconds.

**ACTION:** If it is required to force the test to continue, disable the card using the DISC command and re-enter the AIOD command.

**TRK020**

The card requested is not an AIOD card.

**ACTION:** Verify that the data is correct by using the STAT command. Re-enter the command.

**TRK021**

The AIOD card is not responding to signaling messages sent from the processor.

**ACTION:** Ensure that the card is in place. If it is and replacing the card has no effect, contact your technical support group.

**TRK022**

The AIOD card cannot be readied for use. Before using the AIOD trunk facility, the system sends a reset signal to the AIOD card to ready it for data transmission. Failure to acknowledge the reset signal within 1 s is considered a failure.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK023**

Error detection circuits on the AIOD facility are not functioning properly. These circuits are essential to signal the processor when incorrect data is being transmitted.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK024**

Cannot transmit data because no supervision from the CO/Exchange line has been detected. Before actual transmission of data can occur a bid or request to begin transmission is sent to the CO/Exchange line. Failure to acknowledge such a request within 4 seconds is considered a failure.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. After replacing the card if the same message appears, contact your technical support group for help in informing the far-end personnel about supervision output.

**TRK025**

The signaling path has been interrupted during the transmission of AIOD data to the CO.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. If the same message appears after replacing the card, check the modem for faults.

**TRK026**

Cannot release CO link. When the AIOD card has completed transmission of data, the CO signals a disconnect. If this signal is not received by the system within 1 second after the end of transmission then the sequence is considered to have failed.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. After replacing the card if the same message appears, contact your technical support group for help in informing the far-end personnel about supervision output.

**TRK027**

The AIOD card is not completing its cycle. The AIOD card is expected to provide a signal that it has completed transmitting all data. Failure to provide this signal within 2 s after the start of data transmission is considered a failure.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK028**

In order to test the AIOD card, there must be one or more CO trunks in the system designated to use the AIOD facility and they must be idle.

1. CO trunks could be busy.

**ACTION:** Use STAT in LD 36 to determine if AIOD is busy. If all the CO trunks are busy, wait until they are idle and then re-enter the command. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

2. CO trunks are not designated to use the AIOD facility.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 AID to ensure that appropriate CO trunks in the system have been designated to use the AIOD facility. Use LD 14 to correct the fault.

**TRK029**

The error detection circuit on the AIOD card is detecting transmission errors. This indicates that faulty data is being presented to the CO or a fault exists in the error detection circuit.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. After replacing the card if the same message appears, check with the CO to ensure that the data is not faulty.

**TRK030**

1. ANI trunks seizure failure.

**ACTION:** Check at the cross-connect field for the seizure condition.

2. Wink start signal (REQ-N1) not received or not properly received from far-end.

**ACTION:** Check the cross-connect field and with far-end for wink start signal.

3. Also wrong number of digits dialed or ANI access code (0/1) is missing.

**ACTION:** Check with the user for dialing the proper access code.

**TRK031**

ANI trunks calling number identification request (REQ-N2) not received or not properly received from far-end.

**ACTION:** Check at cross-connect field and with far-end.

**TRK032**

1. If you were using LD 36, Invalid command for modem-type trunks.

**ACTION:** Use LD 32 to test the Add-on Module (ADM) or Modem trunks.

2. If you were using LD 41, PPM buffer test failed.

**ACTION:** Replace the AIOD card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK033**

TN is not a PPM trunk.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.



**TRK034**

Pulses on E&M trunk are either bad or not received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK035**

1. Route has no member.

**ACTION:** Refer to the *administration input/output guide*, use LD 14 to program a trunk member alternately. Check to make sure your data is correct and re-enter the command.

2. Pules E&M card test failed.

**ACTION:** If the test fails again, the card may be faulty. Replace the E&M card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

**TRK036**

PPM read request is pending on this card.

**ACTION:** Be patient.

**TRK040 c r**

No recorded announcement (RAN), music (MUS) or automatic wake-up (AWK) device exists for the customer and route specified.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TRK041 c r**

The RAN, MUS or AWK device specified for customer **c** and route **r** is not operable.

**ACTION:** Check the connections or change the RAN, MUS or AWK equipment.

**TRK042 c r**

The RAN, MUS or AWR device specified for customer **c** and route **r** is operating abnormally, i.e., not according to manufacturer's specifications.

**ACTION:** Check the connections or change the RAN, MUS or AWK equipment.

**TRK043 c r tn1 tn2**

The RAN, MUS or AWR device specified has RAN trunks associated with it that are not in the trunk list specified for that route. **tns** specified are connected physically to a RAN, MUS or AWR device but trunk data does not reflect this.

**ACTION:** Refer to the *administration input/output guide*. Use LD 15 to change customer data or check wiring.

**TRK044 c r tn1 tn2**

The RAN, MUS or AWR device specified has RAN trunks listed in its trunk list but the **tns** are not physically connected to RAN, MUS or AWR device. (This is the inverse of TRK043).

**ACTION:** Refer to the *administration input/output guide*. Use LD 14 to change trunk data or check wiring.

**TRK045 c r**

Too many trunks connected to RAN, MUS or AWR device for this customer and route. Limit is 100 trunks.

**ACTION:** Refer to the *administration input/output guide*. Use LD 14 OUT to remove some trunks.

**TRK100 tn**

WATS trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 seconds in increments of two seconds.

**1.** This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the WATS trunks and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the prompt HOLD needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the WATS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK101 tn**

**ACTION:** WATS trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized. Seizure supervision from the far-end can take several forms: certain trunks are seized by the far-end placing ringing on the Ring lead (B lead in the UK) or grounding the Tip lead (A lead in the UK), some loop start trunks are seized by a low resistance termination on the trunk leads, other trunks are seized by battery and ground placed on the trunk leads.

**1.** If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

**2.** If messages come from several **tns**.

**ACTION:** To determine the route for the WATS trunk and the present SEIZ setting, use LD 20 TNB and LD 21 RDB respectively. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected. Refer to the *administration input/output guide* for assistance.

**3.** If messages come from one **tn**.

**ACTION:** Replace the WATS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK102 tn**

WATS trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

**1.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the WATS trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct ILLR setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the WATS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK103 tn

WATS trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the WATS trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the WATS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK104 tn

WATS trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls. Answer supervision to the far-end can take several forms: WATS trunks provide answer supervision by placing low resistance on the loop.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, replace the WATS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** To determine the route for the WATS trunk and the present RGLF setting use LD 20 TNB and LD 21 RDB respectively.

Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the WATS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK105 tn

WATS trunk Repetitive messages. The trunk was sending incorrect data to the processor.

1. The loop start or ground start switches may not be set correctly.

**ACTION:** Refer to the *Circuit Pack Installation & Testing NTP* to check that the loop start and ground start switches on the trunk card are set correctly.

2. If the switches are set correctly, the message could indicate a trunk card fault.

**ACTION:** Replace the WATS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

3. A high volume of transitions on the trunk facility. Threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

#### TRK106 tn

WATS trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going on-hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check at the cross-connection field for disconnect supervision conditions.

1. If no supervision was received

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**2.** If supervision was received

**ACTION:** Replace the WATS card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK110 tn**

FEX trunk or TWR1 trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

**1.** This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the FEX trunks and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK111 tn**

**ACTION:** FEX trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized. Seizure supervision from the far-end can take several forms: certain trunks are seized by the far-end placing ringing on the Ring lead (B lead in the UK) or grounding the Tip lead (A lead in the UK), some loop start trunks are seized by a low

resistance termination on the trunk leads, and other trunks are seized by battery and ground placed on the trunk leads.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the FEX trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK112 **tn**

**ACTION:** FEX trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the FEX trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK113 **tn**

**ACTION:** FEX trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large

percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the FEX trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK114 **tn**

**ACTION:** FEX trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls. Answer supervision to the far-end can take several forms: FEX trunks provide answer supervision by placing low resistance on the loop.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several TNs.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the FEX trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one TN.

**ACTION:** Replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.



**TRK115 tn**

**ACTION:** FEX trunk Repetitive messages. The trunk was sending incorrect data to the processor.

1. The loop start or ground start switches may not be set correctly.

**ACTION:** Refer to the *Circuit Pack Installation & Testing NTP* to check that the loop start and ground start switches on the trunk card are set correctly.

2. If switches are correct, the message could indicate either a trunk card fault or

**ACTION:** Replace the FEX card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

3. A high volume of transitions on the trunk facility. Threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

**TRK116 tn**

FEX trunk Release failure. No disconnect supervision was received from the trunk within 60 s of a local set going on-hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check at the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK120 tn

CCSA trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the CCSA trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CCSA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK121 tn

CCSA trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized. Seizure supervision from the far-end can take several forms: certain trunks are seized by the far-end placing ringing on the Ring lead (B lead in the UK) or grounding the Tip lead (A lead in the UK), some loop start trunks are seized by a low resistance termination on the trunk leads, other trunks are seized by battery and ground placed on the trunk leads.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CCSA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK122 tn

CCSA trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the CCSA prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the FEX trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK123 tn

CCSA trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA trunks and LD 21 RDB to

determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the CCSA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK124 tn**

CCSA trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

**1.** If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the CCSA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the CCSA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK125 tn**

CCSA trunk Repetitive messages.

**1.** The trunk was sending incorrect data to the processor.  
The message could indicate either a trunk card fault or

**ACTION:** Replace the CCSA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. A high volume of transitions on the trunk facility. The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

#### TRK126 tn

CCSA trunk Release failure. No disconnect supervision was received from the trunk within 60 s of a local set going On-Hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the CCSA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK130 tn

DID trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the DID trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the DID trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK131 **tn**

DID trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

Seizure supervision from the far-end can take several forms: some loop signaling trunks are seized by a low resistance termination on the trunk leads, other trunks are seized by battery and ground placed on the trunk leads.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the DID trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the DID trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK132 **tn**

DID trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the DID trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the DID trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK133 **tn**

DID trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the DID trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the DID trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK134 **tn**

DID trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls. Answer supervision to the far-end can take several forms: some loop signaling trunks provide answer supervision by reversing battery and ground on the trunk leads.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, replace the DID trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the DID trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the DID trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK135 tn**

DID trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message can indicate either of the following:

1. A trunk card fault.

**ACTION:** Replace the DID card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. A high volume of transitions on the trunk facility. The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

## **TRK136 tn**

DID trunk Release failure. No disconnect supervision was received from the trunk within 60 s of a local set going on-hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LND command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.



2. If supervision was received.

**ACTION:** Replace the DID trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK137 tn

Partial dial time-out on DID trunk.

**ACTION:** If this message appears repeatedly, replace the DID card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK139 tn

No response from Universal Trunk or E&M/Dictation Trunk.

**ACTION:** Try the command again. If the problem persists, check the Network Card or Controller (NT8D04/NT8D01) and the cable path to the Universal Trunk or E&M/Dictation Trunk card.

#### TRK150 tn

CO trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CO trunks and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CO trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK151 tn**

CO trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or the response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized. Seizure supervision from the far-end can take several forms: certain CO/Exchange line trunks are seized by the far-end placing ringing on the Ring lead (B lead in the UK) or grounding the Tip lead (A lead in the UK), some trunks are seized by a low resistance termination on the trunk leads, other trunks are seized by battery and ground placed on the trunk leads.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CO trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CO trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK152 tn**

CO trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CO trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the CO trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK153 **tn**

CO trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CO trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CO trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK154 **tn**

CO trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls. Answer supervision to the far-end can take several forms: CO trunks provide answer supervision by placing low resistance on the loop.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the CO trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CO trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CO trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK155 tn**

CO trunk Repetitive messages. The trunk was sending incorrect data to the processor.

1. The loop start or ground start switches may not be set correctly.

**ACTION:** Refer to the *Circuit Pack Installation & Testing NTP* to check that the loop start and ground start switches on the trunk card are set correctly.

2. If switches are correct, the message could indicate a trunk card fault or

**ACTION:** Replace the CO card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

3. There is a high volume of transitions on the trunk facility. The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

## **TRK156 tn**

CO trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going On-Hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the CO trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK157 tn

PPM read failure. An attempt to read the contents of the trunk register failed.

**ACTION:** Contact your technical support group.

#### TRK160 tn

TIE trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the TIE trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK161 tn**

TIE trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized. Seizure supervision from the far-end can take several forms: a ground placed on the E lead for E & M trunks. Reversal of battery and ground on tip and ring for loop signaling tie trunks.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the TIE trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK162 tn**

TIE trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the TIE trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK163 tn**

TIE trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the TIE trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK164 tn**

TIE trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls. Answer supervision to the far-end can take several forms: some E and M trunks provide answer supervision by placing battery on the M lead.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the TIE trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK165 tn

**ACTION:** TIE trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

1. A trunk card fault.

**ACTION:** Replace the TIE card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. There is a high volume of transitions on the trunk facility. The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

## TRK166 tn

TIE trunk Release failure. No disconnect supervision was received from the trunk within 60 s of a local set going on-hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.



**TRK170 tn**

Paging trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the Paging trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the Paging trunk card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

**TRK171 tn**

Paging trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the TIE trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the TIE trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK172 **tn**

Paging trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Paging trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the Paging trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK173 **tn**

Paging trunk Ring or Ground Detection. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Paging trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the Paging trunk card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

**TRK174 tn**

Paging trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

**1.** If answer supervision was not sent to the far-end

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, replace the Paging trunk card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Paging trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the Paging trunk card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

**TRK175 tn**

Paging trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

**1.** A trunk card fault.

**ACTION:** Replace the Paging card following the steps in the *Hardware replacement guide*. After replacing the card verify that the fault is cleared.

**2.** There is a high volume of transitions on the trunk facility.  
The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

**TRK176 tn**

Paging Trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going On-Hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the Paging trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK0177**

MFR holding time has timed out on incoming TWR1 call.

**ACTION:** Contact your technical support group.

**TRK180 tn**

Dictation trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the Dictation trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the Dictation trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK181 tn**

Dictation trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

**1.** If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Dictation trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the Dictation trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK182 tn**

Dictation trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

**1.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Dictation trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt ILLR needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the Dictation trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK183 tn**

Dictation trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Dictation trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the Dictation trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK184 tn**

Dictation trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, replace the Dictation trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Dictation trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering

section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the Dictation trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK185 tn**

Dictation trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

**1.** A trunk card fault.

**ACTION:** Replace the Dictation card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**2.** A high volume of transitions on the trunk facility. The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

**TRK186 tn**

Dictation trunk Release failure. In situations where the external dictation equipment busies out the trunk at the end of each call, TRK186 messages do not indicate a fault.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

**1.** If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**2.** If supervision was received.

**ACTION:** Replace the Dictation trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK191 tn**

No control signal (CNTL) returned. A control signal indicating the status of Code-a-phone or Audichron has not been received by the processor in the last 5 minutes for Code-a-phone or 32 seconds for Audichron. The control signal can be either open or ground. When the control signal is open the machine is in announcing state. When the control signal is ground, the machine is in idle or start state.

**ACTION:** Check the cross connect field for proper conditions. If the proper conditions are not present replace the Code-a-Phone or Audichron. If the proper conditions are present replace the trunk card.

**TRK192 tn**

Start failure (STRT). To start Code-a-phone machine, a start pulse is sent from any one of the trunks connected to the machine. The control signal should change from “ground” to “open” within 2 seconds after the start pulse is sent. If this trunk fails to start the machine, the state of the control signal remains “ground” for all the trunks connected to the machine.

**ACTION:** Check the cross connect field for proper conditions. If the proper conditions are not present replace the Code-a-Phone. If the proper conditions are present replace the trunk card.

**TRK193 tn**

Illegal messages from trunk (ILLM). Any messages received from RAN trunk are considered illegal if they are out of sequence of duration or control signal that remains open is less than two seconds.

**ACTION:** Use the RAN test in LD 36, and check the wiring.

**TRK200 tn**

Reset acknowledge not received. Before using the AIOD trunk facility, the system sends a reset signal to the AIOD card to ready it for data transmission.

**ACTION:** If the card fails to acknowledge this command, Use LD 36 DISC and ENLC to replace the trunk card.

**TRK201 tn**

Transmission failure (TRFL). Error detection circuits on the AIOD card signaled either incorrect data being transmitted to the CO or that the established path between the CO and SL-1 installation has been interrupted.

**ACTION:** Check for the proper conditions at the cross connect field. If the conditions are good, use LD 36 DISC and ENLC to replace the



trunk card. If the conditions are not good, contact your technical support group for help in informing the far-end personnel.

**TRK202 tn**

Failure to acknowledge transmit bit (TRAC). Before actual transmission of data can occur, a bid or request to begin transmission is sent to the CO. Failure to acknowledge such a request within four seconds is considered a failure.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK203 tn**

End of transmission or disconnect not acknowledged (ETAC). The AIOD card signals the system that it has completed transmission of data. Soon afterwards, the received by the system, the AIOD sequence is considered to have failed.

**ACTION:** Contact your technical support group and contact your technical support group for help in informing the far-end personnel.

**TRK204 tn**

Illegal messages from trunk (ILM). Any messages to the processor from the AIOD card are considered illegal if they are random and can not be decoded, or are out of sequence.

**ACTION:** Check for a faulty card. Use LD 36 DISC and ENLC to replace the trunk card.

**TRK210 tn**

CCSA-ANI trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. Short hold measurement can be set from 0 to 128 s in increments of two seconds. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

**1.** This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the CCSA-ANI trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK211 tn**

CCSA-ANI trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA-ANI trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK212 tn**

CCSA-ANI trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA-ANI trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK213 tn**

CCSA-ANI trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA-ANI trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK214 tn

CCSA-ANI trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA-ANI trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK215 tn

CCSA-ANI trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

1. A trunk card fault.

**ACTION:** Replace the CCSA-ANI card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. There is a high volume of transitions on the trunk facility. The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

**TRK216 tn**

CCSA-ANI trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going on-hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK220 tn**

CAMA trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. Short hold measurement can be set from 0 to 128 s in increments of two seconds. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the CAMA trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CAMA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK221 tn

CAMA trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CAMA trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CAMA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK222 tn

With a TN identifier, this message is used for CAMA trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CCSA-ANI trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the CCSA-ANI trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK222**

Without a TN identifier, this message is used as an indication that LD 42 is loaded into the overlay area and is ready to accept an input command from the keyboard of a maintenance terminal.

**ACTION:** The TRK program is loaded and ready for you to enter commands.

**TRK223 tn**

CAMA trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CAMA trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the CAMA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK224 tn**

CAMA trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the CAMA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the CAMA trunks and LD 21 RDB to

determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the CAMA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK225 tn**

CAMA trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

**1.** A trunk card fault.

**ACTION:** Replace the CAMA card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**2.** A high volume of transitions on the trunk facility. The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

## **TRK226 tn**

CAMA Trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going On-Hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

**1.** If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**2.** If supervision was received.

**ACTION:** Replace the CAMA trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.



**TRK230 tn**

RLT-main, CAS system trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

**1.** This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the RLT/CAS trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected. If messages come from one TN.

**3.** If messages come from one **tn**.

**ACTION:** Replace the RLT/CAS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK231 tn**

RLT-main, CAS systems trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

**1.** If there is no seizure supervision from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-main trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering

section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the RLT-main trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK232 tn**

RLT-main, CAS systems trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

**1.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-main trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

**2.** If messages come from one **tn**.

**ACTION:** Replace the RLT-main trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK233 tn**

RLT-main, CAS systems trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

**1.** If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-main trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering

section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the RLT-main trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK234 tn**

RLT-main, CAS systems trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

**1.** If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the RLT-main trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-main trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the RLT-main trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK235 tn**

RLT-main, CAS systems trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

**1.** A trunk card fault.

**ACTION:** Replace the RLT-main card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. There is a high volume of transitions on the trunk facility.  
The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking high volume of transitions on the trunk facility.

## **TRK236 tn**

**TRK236 tn** — with a **tn** identifier is used for RLT-main, CAS systems trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going On-Hook. This trunk will remain busy until disconnect supervision is received. TRK236 (without a **tn** identifier) is used as an indication that LD 41 is loaded into the overlay area and is ready to accept an input command from the keyboard of a maintenance terminal.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check at the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the RLT-main, CAS trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK237 tn**

Failure of far-end response to near-end seizure. The near-end did not recognize the wink signal from the far-end because:

- ◆ the wink signal was not received within five seconds because of transmission delays or hardware failure, or
- ◆ the wink signal was not within specification.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK238 tn**

Far-end dialing failure. The near end did not receive sufficient digits to be able to complete the call. This can be caused by either of the following:

- ◆ the far-end remained Off-Hook without sending any digits as faulty hardware caused a false seizure
- ◆ a sender was stuck, causing the inter-digital interval to exceed a threshold

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK240 tn**

RLT-remote trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT trunks and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the RLT trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK241 tn**

RLT-remote trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-remote trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the RLT-remote trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK242 tn**

RLT-remote trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-remote trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the RLT-remote trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK243 tn**

RLT-remote trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-remote trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the RLT-remote trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

4. Inputs received from an idle trunk. RLT-remote trunk is an outgoing trunk and there is no input from the RLT-main when the trunk is in idle state. Any input received during the idle state increments the threshold and there is no decrement on the threshold.

**ACTION:** The problem could be caused by a faulty trunk card that sent out input messages, a problem on the line, or a faulty receiver on the trunk card. Use the LD 36 DISC and ENLC to replace the trunk card.

**TRK244 tn**

**ACTION:** RLT-remote trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

1. If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the RLT-remote trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the RLT-remote trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the RLT-remote trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK245 tn**

RLT-remote trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

1. A trunk card fault.

**ACTION:** Replace the RLT-remote card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. There is a high volume of transitions on the trunk facility.  
The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking the high volume of transitions on the trunk facility.

## **TRK246 tn**

RLT-remote trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going On-Hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check the cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.



2. If supervision was received.

**ACTION:** Replace the RLT-remote trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK250 tn

Modem trunk Short Hold. An unacceptably large percentage of calls on the trunk were held for a short period. The failure to hold applies to trunks that are properly seized but disconnected sooner than the minimum hold time. The time a trunk is held, allowing the user to dial a directory number, can be set from 0 to 128 s in increments of two seconds.

1. This message can be caused by a telephone user dialing the trunk access code, releasing and repeating this action several times in succession.

**ACTION:** Check for trunk users dialing the access code and quickly releasing the call before dialing digits.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide* and use LD 20 TNB to determine the route for the Modem trunks, and LD 21 RDB to determine the present HOLD setting. Contact your engineering section for the correct HOLD setting. Use LD 16 if the setting of the HOLD prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the Modem trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### TRK251 tn

Modem trunk Seizure failure. More than a specified percentage of calls did not receive seizure supervision, either there was no response from the far-end or response was too late. On each occurrence, this trunk was released and another trunk within this trunk group or route was seized.

1. If there is no seizure supervision from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Modem trunks and LD 21 RDB to determine the present SEIZ setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the SEIZ prompt needs to be corrected.

3. If messages come from one **tn**.

**ACTION:** Replace the Modem trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK252 tn**

Modem trunk Ringing on Seized Trunk. Ringing was not removed when the trunk call was answered. Indicates a trunk circuit card fault.

1. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Modem trunks and LD 21 RDB to determine the present ILLR setting. Contact your engineering section for the correct SEIZ setting. Use LD 16 if the setting of the ILLR prompt needs to be corrected.

2. If messages come from one **tn**.

**ACTION:** Replace the Modem trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **TRK253 tn**

Modem trunk Ring or Ground Detection failure. Ring or ground detector changes were not received from the trunk on a large percentage of calls. On those incoming calls which should have had both ringing and ground applied, one or the other was not detected.

1. If both ringing and ground are not applied from the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, notify the far-end.

2. If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Modem trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering

section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the Modem trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK254 tn**

Modem trunk Supervision failure. The trunk did not return answer supervision on a large percentage of calls.

**1.** If answer supervision was not sent to the far-end.

**ACTION:** Monitor for the proper conditions at the cross-connect frame. If the conditions are not right, replace the Modem trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**2.** If messages come from several **tns**.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 TNB to determine the route for the Modem trunks and LD 21 RDB to determine the present RGLF setting. Contact your engineering section for the correct RGLF setting. Use LD 16 if the setting of the RGLF prompt needs to be corrected.

**3.** If messages come from one **tn**.

**ACTION:** Replace the Modem trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK255 tn**

Modem trunk Repetitive messages. The trunk was sending incorrect data to the processor. The message could indicate either of the following:

**1.** A trunk card fault.

**ACTION:** Replace the Modem card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

2. There is a high volume of transitions on the trunk facility.  
The threshold is fixed by the system.

**ACTION:** Contact your technical support group for help in checking high volume of transitions on the trunk facility.

## TRK256 tn

Modem Trunk Release failure. No disconnect supervision was received from the trunk within 60 seconds of a local set going On-Hook. This trunk will remain busy until disconnect supervision is received.

**ACTION:** Use the LD 36 LNDS command to determine whether the trunk has remained in this state. Check at cross-connection field for disconnect supervision conditions.

1. If no supervision was received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

2. If supervision was received.

**ACTION:** Replace the Modem trunk card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## TRK300 tn

Link/DCHI state is not yet defined.

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP*.

## TRK301 loop

The **loop** requested is the Digital Trunk Interface (DTI) or Primary Rate Interface (PRI);

**ACTION:** Refer to the *ISDN Basic Rate Interface NTP* and use LD 60 DTI Diagnostic.

## TRK302

Trunk card failed selftest.

**ACTION:** Use LD 36 DISC and ENLC to replace the trunk card.

## TRK303

Superloop number must be a multiple of 4.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRK304**

Shelf number is undefined.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TRK305**

Card number is undefined.

**ACTION:** Check to make sure your data is correct and if applicable, re-enter the command.

**TRK306**

Unit number is out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRK431 tn**

Seizure acknowledgment expected on DID-DOD or NWK trunk but not received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel. Check the cross connection/test jack frame for proper conditions. Use LD 36 DISC and ENLC to replace the trunk card.

**TRK432 tn**

Seizure acknowledgment not expected on DID-DOD or NWK trunk but received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel. Check the cross connection/test jack frame for proper conditions. Use LD 36 DISC and ENLC to replace the trunk card.

**TRK433 tn**

Time-out when waiting for ready to outpulse.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK434 tn**

Time-out when waiting for stop to outpulse.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

## **TRK481 tn**

A seizure acknowledgment was expected on dictation trunk but was not received.

**ACTION:** Check the cross connection/test jack frame for proper conditions. If the proper conditions are not present, replace the dictation equipment. If the conditions are good, use LD 36 DISC and ENLC to replace the trunk card.

## **TRK482 tn**

A seizure acknowledgment was not expected on dictation trunk but was received.

**ACTION:** Check the cross connection/test jack frame for proper conditions. If the proper conditions are not present, replace the dictation equipment. If the conditions are good, use LD 36 DISC and ENLC to replace trunk card.

## **TRK483 tn**

An off-hook from a private circuit/TIE trunk was received instead of a Number\_Received signal.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

## **TRK501 tn**

If the trunk is IPE, then Barring is applied to trunk **tn**; otherwise, the trunk has been made busy due to Line Break Alarm Signal. Feature is XDID Barring or DID Trunk Failure Monitor.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

## **TRK502 tn**

Barring is no longer applied.

**ACTION:** Information only, no action required.

## **TRK503 tn**

TIE trunk has been made busy by a Line Break Alarm Signal.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

## **TRK504 tn**

Tie trunk has been idled after a Line Break Alarm Signal correction.

**ACTION:** Information only, no action required.

**TRK505 tn**

If the trunk is IPE, then Barring is no longer applied to trunk <tn>; otherwise, the trunk has been idled after Line Break Alarm Signal problem correction. Feature is XDID Barring or DID Trunk Failure Monitor.

**ACTION:** Information only, no action required.

**TRK506**

Expected signal not received from Radio Paging equipment. Call abandoned.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK509**

Answer expected from XCOT trunk but not received.

**ACTION:** Contact your technical support group for help in informing the far-end personnel.

**TRK510**

DN + Local Exchange Code together comprise more than 7 digits when trying to transmit ANI information on an X3W trunk.

**ACTION:** Refer to the *administration input/output guide*, use LD 16 to check the LEC prompt.

**TRK511**

An invalid trunk signal was received on an X3W trunk. The signal was ignored.

**ACTION:** Information only, no action required.

**TRK512**

Shelf number out of range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRK513**

Card number out-of-range.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**TRK514 tn**

XFCOT Barring is applied to the trunk <unit>. (Barring is applied to the trunk unit identified by **tn**.)

**ACTION:** Information only, no action required.

**TRK515 tn**

XFCOT Barring is no longer applied to the trunk <unit>. (Barring is no longer applied to trunk unit identified by **tn**.)

**ACTION:** Information only, no action required.

**TRK516 l s c tn**

Partial failure of metering on card **l s c**. This is a hardware failure that may have affected metering activities on one or more calls on the card. If PPM is configured, then PPM has been affected, with the result that the CDR records for calls in progress may be incorrect. If Busy Tone Supervision is configured, then busy tone may not have been detected on calls in progress.

**ACTION:** Replace the affected card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

**TRK517 l s c**

Fatal failure of metering on card **l s c**. This is a hardware failure that affects metering activities on the card. If PPM is configured, then PPM has been affected, with the result that further PPM reporting is disabled until either the card is disabled and re-enabled or pulled out and reinserted. The CDR records for calls in progress are incorrect.

**ACTION:** Use LD 36 DISC and ENLC to try disabling and re-enabling the card. If message appears again, it is most likely a hardware fault. Use LD 36 DISC and ENLC to replace the trunk card.

**TRK518 tn**

The enable command attempted on an XDID/EAM or XDID/CIS or XFCOT unit is canceled because the unit is in a barred state.

**ACTION:** Use LD 36 DISU and ENLU to disable and re-enable the card (this will cause a TRK519 message) and re-enter the command.



**TRK519 tn**

**Warning:** The XDID/EAM unit in a barred state is changed to the disabled state after a disable command.

**ACTION:** Use ENLU l s c u in LD 32 to enable the unit. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**TRK520 tn**

No far-end release message is received from the XDID/EAM unit after a call blocking sequence. The disable command on this unit is stopped. The unit is in a lockout state.

**ACTION:** Pull the jumper from the telephone company side and re-enter the command.

**TRK521 tn**

The disable command has been aborted while waiting for a far-end release message on a XDID/EAM unit. As soon as the far-end release message is received, the XDID/EAM unit will still be disabled.

**ACTION:** Information only, no action required.

**TRK522**

A barring message is received in an invalid state from a XDID/XFCOT unit.

**ACTION:** Use DISU l s c u in LD 32 to disable and ENLU l s c u to enable the unit. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**TRK524**

ISA service route is not allowed for the command.

**ACTION:** Check the database and if applicable, re-enter the command.

**TRK526**

DP digit collection problem was revealed and reported by CDTI2/CSDTI2 FW (incoming trunk).Trunk is locked out.

**ACTION:** Contact your technical support group

**TRK527**

Outgoing CIS E3W card requested CIS ANI download by means of TDS or XCT service loop, but TERN TN fails TNTRANS or FTDS package not equipped. Outgoing CIS E3W call will be released; trunk will be idled.

**ACTION:** Refer to the *administration input/output guide*, use LD 22 PRT, PKG to ensure that the FTDS package is on the disk. Have your technical support group contact Northern Telecom Customer Service for replacement software if the FTDS package is not present.

**TRK528**

Outgoing CIS E3W card requested CIS ANI download by means of TDS or XCT service loop, but TDS/XCT path request failed. Outgoing CIS E3W call will be released; trunk will be idled.

**ACTION:** Check TDS/ XCT and traffic of these service loops.

**TRK529**

Outgoing CIS E3W card fails to request CIS ANI download. Outgoing CIS E3W call will be released; trunk will be idled.

**ACTION:**

**TRK530**

Outgoing CIS E3W card fails to acknowledge CIS ANI already downloaded by means of TDS or XCT. Outgoing CIS E3W will be released; trunk will be idled.

**ACTION:** Use LD 36 DISC and ENLC to replace the CIS E3W card.

**TRK531 tn**

An error has been detected on ISL E&M Tie, Unit will be put to MBSY.

**ACTION:** Contact your technical support group

**TRK532 tn**

Error condition on ISL E&M Tie removed, Unit in IDLE state.

**ACTION:** Information only, no action required.

**TRK533 tn**

The enable command is cancelled on this unit because an error exists on the ISL E&M TIE trunk.

**ACTION:** Contact your technical support group

**TRK843 tn**

Off hook from TIE trunk instead of number received signal.

**ACTION:** Contact your technical support group for help in informing the local telephone company personnel.

**TRK3031**

Trunk member in a route's trunk list does not exist.

**ACTION:** Information only, no action required.

**TRK3108**

A trunk does not have wink start arrangement.

**ACTION:** Refer to the *administration input/output guide*, use LD 20 to check the start arrangement and use LD 14 STRI to correct if necessary. If not, contact your technical support group for help in informing the local telephone company personnel.

**TRK3115**

Trunk does not have answer supervision.

**ACTION:** Contact your technical support group for help in informing the local telephone company personnel. 

**TRK3117**

MF input timeout on incoming TWR1 call. Output data: trktn mfrtn tw\_inc\_pm clid/address information.

**ACTION:** Contact your technical support group.

**TRK3118**

Invalid input received on incoming TWR1 call. Output data: trktn MFR tn tw\_inc\_pm clid/address information.

**ACTION:** Contact your technical support group.

# TRK

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# TSM — Time Slot Monitor

## TSM messages

### MTSM000

The program has been loaded.

**ACTION:** The TSM program is loaded and ready for you to enter the commands.

### TSM002

An invalid command

**ACTION:** Check to make sure your data is correct and re-enter the command.

### TSM003

An invalid parameter.

**ACTION:** Check to make sure your data is correct and re-enter the command.

### TSM004 x ts ig

There is a failure on Cont Test: Link, Timeslot, **ig**.

**ACTION:** Run an AUDIT Rx in LD 44, reattempt command.

### TSM005

The test is aborted as there are too many errors.

**ACTION:** Re-attempt command later.

### TSM006

The test init failed clearing CM on ENW card.

**ACTION:** Re-attempt command.

### TSM007 LK

CMD is running, type 'END' to abort.

**ACTION:** Information only, no action required. 

# TSM

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## TTY — Teletype Error Reports

For messages and descriptions refer to the *maintenance input/output guide*.

Refer to ACD Northern Telecom Publications for details. 





## VAS — Value Added Server

For messages and descriptions, refer to the *maintenance input/output guide*.

Refer to Meridian Mail Northern Telecom Publications for details. 

# VAS

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## XCT — Conference/TDS/MFS Card

### How the XCT works

The XCT card provides conference, Tone and Digit Switch and Multifrequency Sender (MFS) circuits. XCT messages indicate hardware status and problems.

### XCT messages

#### **XCT001 loop x**

The Conference/TDS/MFS Card failed the self test. **x** = self test result message.

**ACTION:** If the test fails a second time, replace the XCT card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### **XCT002 loop x**

The Conference/TDS/MFS Card failed the Input/Output test. **x** = I/O result message.

**ACTION:** If the test fails a second time, replace the XCT card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

#### **XCT003 loop**

Failed download process to the Conference/TDS/MFS card. This may indicate communication trouble or checksum problems or the card is busy.

**ACTION:** Try the command again.

# XCT

## **XCT004 loop x y**

The CPU received a message invalid to the current state of the Conference/TDS/MFS Card. **x** = message type received; **y** = the state of the card.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

## **XCT005 loop x**

The CPU received an unrecognized message from the Conference/TDS/MFS Card. **x** = message received.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

## **XCT006 loop x**

The Conference/TDS/MFS Card received an illegal message from the CPU.

**x** = message received.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

## **XCT007 loop x**

Timeout waiting for response from the Conference/TDS/MFS Card. **x** = the state of the XCT.

**ACTION:** Re-enter the command.

## **XCT008 loop n**

Failed download process to the Conference/TDS/MFS Card because the CPU could not write to the card. This may indicate a removed card or hardware fault. **n** = the FCAD table entry number which failed to download. If **n** = 0, the failure occurred downloading system parameters.

**ACTION:** Replace the XCT card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

## **XCT009 loop tn**

The Conference/TDS/MFS Card sent a message to the CPU with an invalid Terminal Number.

**ACTION:** Contact your technical support group.

**XCT010 g**

The CPU was unable to obtain a Call Register to perform a timing task.

**g** = Group loop number.

**ACTION:** Contact your technical support group.

**XCT011 L r**

The Conference/TDS/MFS Card has been reset.

**r** = hardware reset message.

**ACTION:** Information only, no action required.

**XCT100 loop x**

The Conference/TDS/MFS Card failed to respond to a read or write.

**x** = outgoing message.

**ACTION:** Replace the XCT card following the steps in the *Hardware replacement* guide.

**XCT101 loop x**

The Conference/TDS/MFS Card is disabled and needs download.

This occurs when the two loops on the card are enabled separately.

**x** = the following text string: "XCT DNLD NEEDED USED  
ENLX CMD"

**ACTION:** Use the ENLX command in LD 34, LD 38 or LD 46 to enable the card.

**XCT102 loop x**

The conference loop on Conference/TDS/MFS Card is in use. The

Time Slot Memory (TSM) was not tested. **x** = the following text string: "XCT IN USE NO TSM TEST"

**ACTION:** Wait until the loop is idle.

**XCT103**

The parameter down load failed for XTD. This error message will be called from new proc XTD\_DOWNLOAD.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group.

# XCT

**1442** Conference/TDS/MFS Card

---

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## **XCT104**

The parameter down load failed for XTDS. This error message will be called from proc XTDS\_DOWNLOAD.

**ACTION:** If this message appears repeatedly or is associated with a system problem, contact your technical support group. 

## XMI — Network to Controller Message

### How the XMI works

The superloop network and controller cards have built in diagnostics that output XMI messages indicating problems with the communication between the NT8D04 Network Card and the NT8D01 Controller card.

#### Using the XMI Message table to clear faults

To clear most network to controller faults, the XMI action column suggests that you use LD 32 overlays found in the *NPR* chapter.

## XMI messages

### XMI000 aaaa

Message **aaaa** received from a Network Card (NT8D04).

The possible messages are:

**1. PLL UNLOCK EVENT.** The Network card lost synch with the system clock.

*a)* If the message occurs when clocks are switched.

**ACTION:** Ignore the message.

*b)* If messages occurring in a broken sequence or periodically.

**ACTION:** Switch the clocks.

*c)* If messages occur often.

**ACTION:** Replace the Network card following the steps in the *Hardware replacement* guide. After replacing the card, verify that the fault is cleared. If the fault does not clear replace the clocks following the steps in the *Hardware replacement* guide.

**2. Random XMI000 messages** may be generated if excessive Electrostatic Discharges (ESD) are allowed to enter the system. These messages may be safely ignored.

**ACTION:** Wear your ESD wrist strap when touching the Meridian 1 PBX and any of the related hardware.

**3. MSG FROM SHELF x: XPEC ERROR 0001.** This error is usually self-correcting. It may indicate a double timeslot problem or invalid call teardown

*a)* If messages occur rarely.

**ACTION:** Ignore the message.

*b)* If messages occur often.

**ACTION:** Replace the Network card following the steps in the *Hardware replacement* guide. After replacing the card, verify that the fault is cleared. If the fault does not clear replace the Peripheral Controller card following the steps in the *Hardware replacement* guide.



**4. TN READ UNBLOCKED: CNT=x.** A number of SSD messages were sent to the PS card but not acknowledged. In order to prevent the locking of the message path, the Network card assumed the message was received.

*a)* If messages occur rarely.

**ACTION:** Ignore the message.

*b)* If messages occur often.

**ACTION:** Replace the Network card following the steps in the *Hardware replacement* guide. After replacing the card, verify that the fault is cleared. If the fault does not clear replace the Peripheral Signaler card following the steps in the *Hardware replacement* guide.

**ACTION:** XNET POLLING FAILURE ON PORT x. RSIG LINK LOST ON PORT #x - REINITIALIZED. R71 DISASTER; CANNOT ALIGN TRANSCEIVERS. These messages indicate that the Controller is not responding to the Network card polling messages.

*a)* Faulty cabling between the Network and Controller cards.

**ACTION:** Replace the cabling between the Network and Controller cards following the steps in the *Hardware replacement* guide. After replacing the cabling verify that the fault is cleared.

*b)* Faulty Controller card.

**ACTION:** Replace the Controller card following the steps in the *Hardware replacement* guide. After replacing the card verify that the fault is cleared.

*c)* Faulty Network card.

**ACTION:** Replace the Network card following the steps in the *Hardware replacement Guide*. After replacing the card verify that the fault is cleared.

**Note:** In X11 Release 15 and 16 “FRw APx SQy TPz” is output before the text, where “w” is the loop number. This data is not output in X11 Release 17 and later. Messages without text indicate that the Network or Controller cards have requested software download.

**XMI001 l s c**

A card polling failure. The specified card did not respond to the polling message.

**ACTION:** Use DISL 1 in LD 32 to disable and ENLL 1 to enable the loop. If the problem continues either replace the Network card or the Controller card following the steps in the *Hardware replacement* guide. After replacing the card(s) verify that the fault is cleared.

**XMI001 s**

Card **s** in the expansion cabinet has lost connection to the main cabinet.

**ACTION:** Check for loose cables, and contact your local technical group.

**XMI002 l s c**

Card polling had been reestablished.

**ACTION:** Information only, no action required.

**XMI002 XFIL 1**

The main fiber interface (MFI) local is operational.

**ACTION:** Information only, no action required.

**XMI002 XFIR 2**

The expansion fiber interface (EFI) remote is operational in the first expansion cabinet.

**ACTION:** Information only, no action required.

**XMI002 XFIR 3**

The expansion fiber interface (EFI) remote is operational in the second expansion cabinet.

**ACTION:** Information only, no action required.

**XMI003 l s ts**

Continuity has failed on timeslot **ts**.

**ACTION:** Contact your technical support group.

**XMI004 loop**

Loop generated too many XMI messages. Output of XMI000 has been stopped.

**ACTION:** Use DISL 1 in LD 32 to disable and ENLL 1 to enable the loop. If the problem continues either replace the Network card or the Controller card following the steps in the *Hardware replacement* guide. After replacing the card(s) verify that the fault is cleared.

**XMI005 L A S T t**

No message registers available in the idle queue. The printing of this message is disabled for one hour.

**L**=Loop or superloop number

**A**=Application number for this message

**S**=Sequence field for this message

**T**=Type of message

**t**=time of this message: hh:mm:ss dd/mm/yy format

**ACTION:** Information only, no action required.

**XMI006 loop**

Five or more write attempts to Network card **I** failed.

**ACTION:** Use STAT 1 in LD 32 to check the Network card status. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

**XMI007**

Card type does not match the data base.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**XMI008**

Card is not defined in the data base.

**ACTION:** Check to make sure your data is correct and re-enter the command.

**XMI100**

The loop specified in the query request is invalid. That is, it is not a superloop, nor is it XI\_LOOP\_NONE.

**ACTION:** Refer to the *administration input/output guide*. Use LD 22 CFN to check for the specified loop.

## **XMI101**

Trying to read/write to a disabled XNET/non-XNET loop.

**ACTION:** Use ENLL 1 in LD 32 to enable the Network card and try the test again. If you need help with the commands or system responses refer to the *NPR* chapter in this guide.

## **XMI102 card**

Card slot printed is not allowed for the type of card inserted. This is mainly for the system Option 11 DTI/PRI card which can only be used in slots 1 to 9 in the basic cabinet.

**ACTION:** Insert the card in the correct slot (1-9).

## **XMI103<sup>8</sup>**

The number of TNs created has exceeded the number of TNs allowed.

**ACTION:** Have your technical support group contact Nortel Technical Assistance Service for additional TNs.

## **XMI104**

The card is equipped in an expansion slot but there is no expansion cartridge on the CPU.

**ACTION:** Install the expansion cartridge on the CPU card. 

## Terms and abbreviations

### **2 second timing**

The timing interval used by the processor to control all two second timing activities. Examples of where 2 second timing is used, are ringing cadence and warning tones.

### **128 ms timing**

The basic timing interval of call processing. The processor checks all timed activities eight times per second, or every 128 ms.

### **$\mu$ -law companding**

In North America, companding is accomplished using a logarithmic law called, "255 Law Companded Pulse Code Modulation Digital Coding Standard" or  $\mu$ -law. See companding.

### **?SYNTAX**

An LD 77 message informing you of an input format non-conformity.

### **A-law companding**

Except for North America, companding is accomplished using a logarithmic law called, A-law. See companding.

### **ACD (Automatic Call Distribution)**

Application software that puts incoming calls in a queue to one or more telephones referred to as agent telephones. The longest-waiting call is sent to the agent telephone that has been idle for the longest time. Incoming calls can be given a priority and answered at a prioritized telephone as an option. There are enhancements which can be added to basic ACD functionality to help with management and reporting tasks and also to customize and enhance the treatment incoming calls are given. ACD software packages A, B, C, D, and Custom Controlled Routing offer enhancements to management tools and reports, in order to add to the functionality of basic ACD.

# TERMS

## **analog (500/2500 type) telephone**

A name that replaces PBX set. The name describes a standard telephone set that works on many telephone systems. Examples of these systems are the Meridian 1, DMS or other vendors systems. Analog (500/2500 type) telephone describes the North American 500 set, United Kingdom analogue rotary dial, North American 2500 set, United Kingdom MF 4 and Unity telephones.

## **application processor**

A special purpose computer that can be attached to the Meridian 1 system to decrease the load on the system processor. The application processor provides value-added and special services. Application processors are used with voice mail, interactive voice response, and automatic call distribution.

## **Aries set**

A name for Meridian Modular Digital telephones, found in some fault messages. Meridian Modular Digital telephone is the marketing name for the following telephones: M2006, M2008, M2616, M2016S, M2216ACD.

## **auxpm (Auxiliary Progress Mark)**

An auxiliary progress mark is used by the Meridian 1 system to follow widely spaced events. For example the auxpm will keep track of the waiting time for each digit during a dial sequence.

## **BRI (Basic Rate Interface)**

An international standard for connecting terminals to a system. One BRI connection has two B-channels rated at 64 kbit/s each, and one D-channel rated at 16 kbit/s.

## **BCS (Business Communication Set)**

A mnemonic found in some fault messages indicating a Meridian 1 proprietary telephone. See Meridian 1 proprietary telephone.

## **binary semaphore**

A machine level software message sent when a file is opened. It prevents other users from opening the same file. The binary semaphore keeps the data in the file from being corrupted.

**bootstrap**

A program that allows the Meridian 1 system to reload and bring itself into an operating state automatically without human intervention. From the expression “pulling oneself up by your bootstraps”.

**CDR (Call Detail Recording)**

CDR records are printed when calls are dialed. CDR records show information about the number dialed, the telephones involved, and the duration of the call. Additional information can be printed when CDR enhancements are installed on a system.

**call processing**

The action of the processor executing the workschedule routine to complete tasks controlled by telephone users. Call processing involves connecting telephone users to other telephones or facilities.

**call register**

Call registers are located in a part of transient data memory. Call registers store temporary information about trunks and telephone sets in the process of establishing calls. Each telephone or trunk in use has a separate call register containing approximately 40 words of information. An example of the 40 words are Class of Service, features, and time slots in use. This information is known as transient data as it is held in a call register only for the duration of the call. Part of the call register information is transferred to the network or superloop cards. Once the information is transferred, the network or superloop cards set up and control the call. When the call is finished, the transient data is erased from the call register.

**cardlan (Card Local Area Network)**

Cardlan is a serial interface (RS422) link providing superloop (XNET), Peripheral Controller (PEC), and Intelligent Peripheral Equipment (IPE) card communication. The PEC is the master controller and all other cards are slaves. This link is used for:

- ◆ initializing the DS-30Y loop communications link between SNET and PEC
- ◆ initializing the IPE cards, that is, setting up the DS-30X bus protocol to IPE cards
- ◆ exchanging proprietary maintenance messages

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- ◆ determining which IPE cards are installed, or not installed and if the card is reset
- ◆ identifying the card type for auto-configuration
- ◆ identifying the card ID and firmware version

## **carriage return**

An instruction directing you to press the key on the keyboard marked ENTER, or RETURN. You press the key to tell the system you have finished a line of input. Carriage return is a carry over from the days when teletypewriters had a mechanical type basket. The type basket did actually return to the left side of the type platen, ready to type the next line of text.

## **CCSA (Common Control Switching Arrangement)**

A service offered by AT&T for private networks that allows any telephone in the network to call another using a seven-digit number.

## **CE (Common Equipment)**

A term for the part of the system that controls the operation of other system components. Common equipment is composed of CPU, memory, input/output ports, disk storage and sometimes includes the network equipment.

## **channel**

A transmission path capable of carrying voice or data.

## **CO (Central Office)**

In North America a central office is the facility containing the switching equipment that provides telephone service to subscribers in the immediate geographical area.

## **cold start**

A name describing a Meridian 1 system loading the operating program into RAM. Equivalent to a system reload.

## **companding**

Companding is derived from the words “compressing” and “expanding”. Companding is the process of compressing the amplitude range of a signal for transmission and then expanding the signal back to its original form at the receiving end.



The transmitted signal (speech) is normally a digital signal. An analog to digital conversion of speech is done in three steps. Sampling the analog signal, Quantizing the sample, and Encoding the quantized sample.

Sampling consists of taking a sample value, at a chosen instant in time, to represent the amplitude of the analog signal. Sampling is usually done at equal time intervals so that the original shape can be reconstructed later with reasonable fidelity from the samples. In 1933 Harry Nyquist determined that the sample rate had to occur at least twice the maximum frequency for reasonable fidelity. The sampling process is also known as Pulse Amplitude Modulation (PAM).

Quantizing is a process where each sample is assigned a value within a range of 0 to 127, for a total of 128 intervals or levels.

Encoding consists of converting the quantizing value into a digital signal. The digital signal consists of eight binary bits. The first seven bits are required to express the value 128 and the eighth bit to indicate polarity; 1 for positive; 0 for negative.

The process of sampling, quantizing, and encoding is known as Pulse Code Modulation (PCM). Eight bit PCM is an industry standard.

The PCM code for level +127 is all 1's and is known as quiet code. If the quantizing steps are equal, this will result in an undesirable random signal called quantizing noise. Quantizing noise is caused when the sample height falls between the steps on the quantum level. While the noise is small for strong signals it is very large for weak signals. The remedy is to provide many small steps in the weak signal range and few large steps in the strong signal range. The process of altering these steps is called companding. The analog signals are compressed before they are sampled, and subsequently transmitted as PCM. At the receiving end the PCM is decoded, quantized and reconstructed as analog, and then expanded.

## **configuration record**

A programmable data block that describes the location and function of the CE hardware in the system. The configuration record is programmed in overlay load 17.

## **continuity test**

A test that determines the continuation of the speech path between a Meridian 1 proprietary telephone and its network card. Also tests the continuation of the speech path between an analog line card unit and its network card.

## **Core**

The processing and data storage portion of the Option 51C, 61C, 81 and 81C systems. The Core equates to the Common Equipment in Meridian 1 systems.

## **Core number**

The Option 61C, 81 and 81C systems has two redundant Core systems. The two Core systems are identified by the Core numbers 0 and 1.

## **COT (Central Office trunk)**

A central office trunk is a circuit between a public exchange network switch and a Meridian 1 system.

## **cross-connect panel**

Sometimes called the jumper panel or main distribution frame (MDF). The panel where wires from telephones and trunks are interconnected with corresponding wires from the system's line and trunks cards.

## **CSA trunk**

Common Control Switching Arrangement trunk. See CCSA.

## **DCE (Data Circuit Terminating Equipment)**

The formal name for a modem. Modem is an acronym for modulator-demodulator. The interfacing equipment that is sometimes required to convert digital signals from data terminal equipment (DTE) into quasi-analog signals. This conversion is needed for transmission over analog telephone communication circuits and vice versa.

## **DCON**

An output message from a System Monitor indicating it sensed that DC is on.

**delay dial**

A trunk signal used to control the transfer of dialed digits. Upon seizure, the originating switch will not outpulse digits until the terminating switch does the following steps:

1. sends an off-hook to the originating switch
2. finds and attaches its digit collection equipment
3. sends an on-hook to the originating switch

The on-hook indicates the terminating switch can now accept digits. The time between on-hook and off-hook varies with equipment types.

**DID (Direct Inward Dialing) trunk**

A trunking feature that allows telephone callers connected to the public exchange network to dial directly to a telephone connected to the Meridian 1 system. DID happens without the intervention of an attendant or interactive voice system.

**digital subscriber loop**

Any one of eight physical Basic Rate Interface (BRI) ports on a BRI line card. Each port has two B-channels and one D-channel.

**digital telephone**

A telephone which uses digital signaling. An analog voice is converted into a digital signal within the telephone. A Macintosh, IBM-PC or other data terminal can be connected to the telephone. The data to and from that terminal is multiplexed on the same set of wires used by the telephone for voice calls.

**Digitone**

Tones used for signaling the digits 0 through 9, # and \*. The tones are a combination of two voice frequencies, a high tone and a low tone. Two frequencies are used because if a single tone were used the human voice might inadvertently reproduce the tone in normal speech during a telephone call. Two frequencies prevent this.

**download**

To receive data from another device.

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## **DTE (Data Terminal Equipment)**

Equipment consisting of digital end devices that convert user information into data signals for transmission, and reconvert the received data signals into user information.

## **DTMF**

Dual Tone Multi Frequency. See Digitone.

## **exchange network**

The global network made up of telephone switches operated for the public by telephone utility companies and governments.

## **extender or extender pair**

A term used to describe a 3 Port Extender (3PE) card, Segmented Bus Extender (SBE) card, and the cable that connects them. These components extend the processor's control to the network shelves. The SBE is located on the common equipment shelf, with the processor. The 3PE is located on the network shelf.

## **extra arguments**

An indication that the system has received too many entries and cannot reach a conclusion.

## **far end**

The remote PBX at the distant end where your Tie trunk or Private circuit terminates.

## **FATAL**

A term describing a condition on a Meridian 1 that will not allow the system to reload its software until the condition is corrected.

## **father routine — son routine**

A father routine is a main software routine with the son routine as a subset of the main routine.

## **fault address**

The fault address is the ninth field of an INI message. In certain instances, the Fault Address field, can be decoded to indicate a faulty card. To decode a Fault Address, the Fault Page field of the INI message must indicate a hardware fault. See fault page.

**fault page**

An area of the address range for memory is set aside for hardware addressing. The area set aside for hardware addressing is called the I/O segment of memory or Page 3 of memory. If the system detects faulty hardware, Page 3 is indicated in the eighth field of the INI message.

**FEX (Foreign Exchange) trunk**

A trunk that provides telephone service to and from a public exchange switch that is outside the subscriber's exchange area. A user in one city can dial the access code for his FEX trunk and receive dial tone from the foreign public exchange switch. The user can also receive calls dialed from the foreign exchange switch.

**FHWR (Localized Faulty Hardware Recovery)**

The FHWR function is part of the Initialization Prevention and Recovery feature. The FHWR function disables faulty hardware detected by the LRIP, SRIP or LOIP functions. When the FHWR is active it causes FHW004, FHW005 or FHW006 messages to appear on all maintenance TTYs.

**firmware**

Software, data, and programming instructions stored permanently in Read Only Memory hardware. (It is neither soft nor hard, therefore it must be firm.) Firmware provides the basic function needed by the Meridian 1 system during start-up, software loading, and other periods when software may not be available in memory. Firmware does not require regular update.

**flag bit**

A software name describing the output of an electronic multivibrator or flip-flop. When a flag bit is set, the flip-flop outputs a voltage that allows electronic circuitry connected to it to react. For example, when a telephone goes off-hook, a flag bit is set in the telephones line card. The line card flag bit in turn causes the network loop card connected to the line card to also set a flag bit. The peripheral signaler will lock on to the network flag bit when polling the loops for off-hooks.

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## **FORCED**

A name that describes a condition on a Meridian 1 where the system has reloaded its software, but will not function to full capacity until the condition is corrected.

## **FW (Firmware) is sane**

A term that indicates a ROM resident program is not corrupted or changed. See firmware.

## **graceful switchover**

An unforced processor switchover. For example, the standby processor becomes the active processor during the running of the midnight or daily routine.

## **group**

A pair of interconnected network modules or shelves. A single network module or shelf is known as a half-group.

## **hard memory failure**

A term that indicates the memory hardware is malfunctioning.

## **hardware sanity time-out**

A term that describes the result of a hardware device failing to respond to a test within a specified period of time.

## **high level semaphore**

When a file is opened, a high level software message or semaphore is sent to prevent others from using the same file at that time. Its purpose is to preserve the integrity of the data.

## **high-speed link**

A communications channel that uses EIA RS422 or RS423 to connect the Meridian 1 to an applications processor. For example a high speed link connects the Meridian 1 to the Meridian MAX.

## **illegal input parameters**

A message that indicates an entered response to a prompt that could not be accepted by the Meridian 1 system. Any entered response must match the system software list before the system will accept the response.

**immediate start**

A signal used on trunks to control the transfer of dialed digits. After a trunk seizure, the originating switch may start outputting digits to the terminating switch after a minimum delay of 70 ms.

**input buffer**

A storage area in transient data memory. The buffer stores input messages sent to the processor from a telephone or a trunk, indicating an off-hook, on-hook or dialed digits. The input buffer is used as temporary storage until the processor can complete a task and then handle the input message by placing the message information into a call register. There are two types of input buffers, high priority and low priority.

**insufficient arguments**

Indicates the Meridian 1 system has not received enough entries to reach a conclusion.

**invalid command**

A command was entered that is not listed in the Meridian 1 system software and cannot be executed.

**invalid operand**

A faulty address for an instruction or data.

**ISDL (Integrated Services Digital Line Card)**

Peripheral Equipment line cards that are used to support digital telephones. They can accommodate up to eight digital telephones and eight associated data terminals.

**ISDN (Integrated Services Digital Network)**

A digital telephony network that allows the transmission of voice and data using internationally approved protocols.

**junctor**

A passive device providing the interconnection for calls between network groups on multi-group Meridian 1 systems.

**large twist**

A party hosted by the rock and roll singer, Chubby Checker.

# TERMS

## **link**

Another name for a communications channel or circuit.

## **LD (Load)**

An abbreviation for the term load; otherwise known as overlay program.

## **LFBN (Line Forced Bypass Enable)**

A ground signal from the system monitor used to start an emergency transfer in an NT8D39(DEES) unit or a QUA6 unit.

## **LFBNR (Line Forced Bypass Enable Return)**

Line Forced Bypass Enable Return. A ground lead connecting the system monitor to an NT8D39 (DEES) unit or a QUA6 unit.

## **lockout mode**

When a telephone or trunk remains off-hook longer than the preset time given for dialing a DN, a lockout timer expires. The timer causes the telephone or trunk to enter a busy state, return to an idle state, or to some other suitable condition.

## **LOIP (Network Loop Overload INI Prevention)**

The LOIP function is part of the Initialization Prevention and Recovery feature. The LOIP function prevents a system initialization (INI000 0006) when a terminal loop overload is detected. When the LOIP is active it causes a FHW003 message to appear on all maintenance TTYs. See the LRIP definition for a list of network loops.

## **low level semaphore**

When a file is opened, a machine level software message or semaphore is sent to prevent others from using the same file at that time. Its purpose is to preserve the integrity of the data.

## **low-speed link**

A communications channel, using EIA RS232 to connect the Meridian 1 to a terminal.

## **lower write protect boundary**

The lower address portion of the write protect memory segment.



**LRIP (Network Loop Response Time-out INI Prevention)**

The LRIP function is part of the Initialization Prevention and Recovery feature. The LRIP function prevents a system initialization (INI000 8000/A000/C000) when a network loop fails to respond to a processing request. When the LRIP is active it causes a FHW000 message to appear on all maintenance TTYs. The network loops include those listed in LD 22, as follows:

- ◆ CONF - Conference loops QPC236 QPC444
- ◆ DLOP - Digital loop QPC414
- ◆ DTI2 - Digital loop
- ◆ PRI- Digital loop
- ◆ DDCS - Digital Signaling loop QPC414
- ◆ MFSD - Multifrequency Sender loop QPC189
- ◆ MSIP - Multipurpose ISDN Signal Processor loop NT6D37
- ◆ REMO - Remote loop QPC414
- ◆ REMD - Remote loop QPC414
- ◆ REMQ - Remote loop QPC414
- ◆ SUPL - Superloops NT8D04 NT1P61
- ◆ TERM - Terminal loop QPC414
- ◆ TERD - Terminal loop QPC414
- ◆ TERQ - Terminal loop QPC414
- ◆ TDS - Tone & Digit Sender loops QPC197 QPC 251 QPC609 QPC610B
- ◆ XCT - Conference Tone & Digit Sender loop NT8D17

**maintenance busy mode**

A condition where a maintenance diagnostic disables a telephone or trunk.

**masked**

A software routine is prevented from being executed in a certain circumstance.

## Meridian 1 telephone

A term replacing BCS set, describing a telephone set designed to operate exclusively with the Meridian 1 PBX. For example, the SL-1, M1009, M1109, M1309, M2009, M2018, M2112, M2006, M2008, M2317, M2616ACD, M2016S, M2216, and M3000 telephones.

## messin

A 16 bit digital word. A messin sends off-hook or on-hook or dialed digit information to the processor. Messins originate in PE card units.

## messout

See output buffer.

## mnemonic

A code used as a memory aid. Mnemonic codes are used for programming and issuing commands.

## module

1. Another name for a memory card.
2. A stylish aluminum box that holds a card cage. It is also called a Universal Equipment Module or UEM.

## motherboard — daughterboard

A motherboard is a main circuit board or card with connectors or sockets that allows a subordinate circuit board (daughterboard) to be plugged into it.

## Mu-law companding

Companding is the process of compressing the amplitude range of a signal for transmission. At the receiving end the compressed signal is expanded back to its original form. Companding is a contraction of compressing and expanding. In North America, companding is accomplished using a logarithmic law called, “255 Law Companded Pulse Code Modulation Digital Coding Standard” or  $\mu$ -law. See companding.

## MPU (Multi Processing Unit)

Multi Processing Unit. A processor that performs some of the tasks that would otherwise be performed by the CPU. For example, the IPE analog line card contains an MPU that interprets a series of on-hook,

off-hook rotary dial pulses as a DN. The MPU then passes the DN on to the CPU, saves CPU resources. Without the MPU, the CPU would have to set and control timers to ensure the incoming pulses are not hook-switch flashes, hits on the line, or that the caller has abandoned the call. See time stamp 2.

## **near end**

The local Meridian 1 system where your Tie trunk or Private circuit terminates.

## **network memory word**

An instruction in the network card memory. The network card memory is used to control the flow of PCM from one telephone to another.

## **not defined**

A term that means not programmed.

## **not supported**

A term indicating the software was not intended to do that.

## **office data**

A term used to describe the data programmed on a Meridian 1 using the Administration overlay loads. The administration loads are as follows:

- ◆ LD 10 to LD 29
- ◆ LD 49 to LD 52
- ◆ LD 56 to LD 58
- ◆ LD 73 to LD74
- ◆ LD79
- ◆ LD 81 to LD 88
- ◆ LD 90
- ◆ LD 93 to LD 95
- ◆ LD 97

## **one-shot test**

A test that only runs once.

# TERMS

## **out-of-range**

An input on a DTE that is beyond the limit of entries listed in the software.

## **output buffer**

A storage area in transient data memory used to keep output information to be sent to a telephone or trunk from the processor. The information, called a messout, will control relays on trunk cards, LEDs or LCDs on telephones, and so on. There are two types of output buffers, SL-1 and 500.

## **operator data**

Information added to the end of a particular message when the Alarm Filter Format is on. Operator data is used to help in problem resolution.

## **OPR DAT (Operator Data)**

See operator data.

## **P data (Protected)**

The protected data store memory segment for Meridian SL-1NT, XT, Option 61, and 71 (or page 1, for previous systems), holds data blocks that have been entered on a DTE. P data describes the make up and provisioning or programmable data of the system. Some of the data blocks are as follows:

- ◆ configuration records (LD 17)
- ◆ customer data blocks (LD 15)
- ◆ route and trunk data blocks (LD 16, LD 14)
- ◆ telephone set data blocks (LD 10, LD 11)

## **packed TN**

A packed TN is an SL-1 formatted TN. A 16 bit word is used by the software to address a loop-shelf-card-unit or as it is commonly referred to, a TN. Software writers convert the 16 bit words to hexadecimal format for ease of use. In most occurrences, the system inputs and outputs are decimal TNs. Sometimes the system outputs a hexadecimal format. If the system is dealing with single density PE cards, the hexadecimal output can be converted directly to a decimal TN.

With single density, bits 0 and 1 are used to identify the number of units (four) on the card and bits 6 and 7 identify the number of shelves (four) on the loop.

With double density PE cards, bits 0, 1 and 6 are used to identify the number of units (eight). With quad density PE cards, bits 0, 1, 6 and 7 are used to identify the number of units (sixteen). If the system is dealing with double or quad density PE cards, the hexadecimal output, called a packed TN, cannot be directly converted to a decimal TN. There are maintenance diagnostics that will convert packed TNs to unpacked TNs. An example of an unpacked TN is 4 0 12 14. The same TN packed is 04F2.

**parameters**

A range or limits set for entries in the software.

**parity error**

An error that occurred during transmission of data within the Meridian 1 circuitry. Parity errors are detected by the receiving end counting the number of 1 bits in the transmitted data. In the case of the Meridian 1 which uses even parity, the number of 1 bits should be an even number. If it is an odd number, a parity error is generated. A parity error will result in an initialization or a system reload.

**PBX (Private Branch Exchange) set**

A term replaced by Analog (500/2500 type) telephone. A PBX set is a standard telephone set that works on many telephone systems. Examples of these systems are the Meridian 1, DMS or other vendors systems. Analog (500/2500 type) telephone describes the North American 500 set, United Kingdom analogue rotary dial, North American 2500 set, United Kingdom MF 4 and Unity telephones.

**PCM (Pulse Code Modulation)**

See companding.

**PE (Peripheral Equipment)**

The part of the system composed of interface cards that connect to terminals such as telephones and trunks, and the shelves on which these cards reside.

## **PFTU (Power Fail Transfer Unit)**

A term used for QUA4, QUA5, QUA6 and NT8D39 (DEES) transfer units. The term implies that an emergency transfer will only result from a loss of power. All transfer units can be connected to perform the emergency transfer function when the CPU cannot process calls, due to a system reload or CPU failure.

## **pointer or ptr**

An address of a memory location.

## **port**

The physical or electrical interface through which the Meridian 1 system is accessed.

## **primary memory**

In a redundant Meridian 1 system either CPU can access both memories. CPU 0s primary memory is Memory 0 and its secondary memory is Memory 1. CPU 1s primary memory is Memory 1 and its secondary memory is Memory 0.

## **program counter**

A register used by the processor to indicate the next instruction to be executed. The register's contents are generally memory addresses that point to the next instruction and are then automatically incremented.

## **program page**

A memory layout used in the legacy (older) systems, when memory was costly. The pages are:

- ◆ Page 0 contains unprotected data store
- ◆ Page 1 contains protected data store
- ◆ Page 2 contains a ROM addressing range, an overlay area used for programming and diagnostic loads (LD xx) and generic data used to operate the system
- ◆ Page 3 consists of a range of addresses set aside for addressing cards and devices

The memory of the Meridian 1 NT, XT, Option 61 and 71 uses contiguous memory and is divided into soft segments. The soft segments are:

- ◆ Unprotected Data Store
- ◆ Protected Data Store
- ◆ Program Store

The soft segments relate to paged memory.

The data in the Unprotected and the Protected Data Store segments of is programmable data. This data is programmed into the Meridian 1 system using LD 10, LD 11, LD 12, LD 13, LD 14, LD 15, LD 16, LD 17, and so on. These data blocks in the NTPs may be referred to as Equipment Data or Office Data.

### **prompt**

A mnemonic presented by the system when you are programming or issuing commands to the system.

### **protected data store**

The protected data store memory segment for Meridian SL-1NT, XT, Option 61, and 71 (or page 1, for previous systems), holds data blocks that have been entered on a DTE. P data describes the make up and provisioning or programmable data of the system. Some of the data blocks are as follows:

- ◆ configuration records (LD 17)
- ◆ customer data blocks (LD 15)
- ◆ route and trunk data blocks (LD 16, LD 14)
- ◆ telephone set data blocks (LD 10, LD 11)

### **redundant**

A Meridian 1 with two processors is a redundant system. One processor controls the system while the other is in a standby mode. A redundant system is necessary to allow a software upgrade without interrupting service.

# TERMS

## **REMALA/REMALB (Remote Alarm A/Remote Alarm B)**

A pair of contacts in an emergency transfer unit that close when the unit is activated. These contacts can be used to trigger hard alarms such as lights, bells or pocket pagers.

## **response time-out**

A memory or I/O device does not respond to a read or write signal from the processor within 8 ms. A response time-out causes an initialize or a system reload.

## **response**

A mnemonic you type in answer to a prompt when you are programming.

## **Rls xx (Release)**

For example Rls 20. A release is a version of software that contains certain feature packages and enhancements.

## **secondary memory**

In a redundant system either CPU can access both memories. CPU 0s primary memory is Memory 0 and its secondary memory is Memory 1. CPU 1s primary memory is Memory 1 and its secondary memory is Memory 0.

## **service change**

See programmable data.

## **service loop**

Another name for Tone & Digit Switch and Conference loops. Service loops provide services such as dial tone and multi-party calls.

## **set**

Another term for telephone.

## **slot number**

A numbered designator indicating where cards are located within the card cage of the modules.



**soft memory failure**

A term used to describe that software data in memory is corrupted.

**software network map**

A list used by the processor to keep track of timeslots in use for a particular network loop.

**software package**

A component of software that, if equipped, provides certain features and capabilities. Software packages are listed by a mnemonic or a number or both.

**software-idled**

A device is software-idled by a software command. The software command can be issued manually or issued automatically by the Meridian 1 system. Hardware-idled is done by placing the faceplate switch to the Dis position.

**software-unequipped**

A term that indicates something is not programmed. See program data.

**split mode**

When redundant processors work separately they are in the split mode. The split mode is used when performing a parallel reload of software. One processor controls call processing and the other processor is used to load the new software programs into memory.

**SRIP (SDI Device Response Time-out INI Prevention)**

The SRIP function is part of the Initialization Prevention and Recovery feature. The SRIP function prevents a system initialization (INI000 8000) when an SDI/Expanded SDI device fails to respond to a processing request. When the SRIP is active it causes FHW001 or FHW002 messages to appear on all maintenance TTYs. The SDI devices include those listed in LD 22, as follows:

- ◆ AML - Application Module Links QPC513 NT6D80
- ◆ BDCH- Backup D - channels QPC757E NT6D11
- ◆ DCH - D - channels QPC757E NT6D11
- ◆ DDSL/DTSL - Digital Signaling Links NT5K35AA NT5K75AA

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- ◆ PTR - Printer ports QPC45 QPC139 QPC757E QPC841C  
NT6D80 NT8D41AA
- ◆ STA - Single Terminal Access port NT6D80
- ◆ TTY - Terminal ports QPC45 QPC139 QPC757E QPC841C  
NT6D63 NT6D80 NT8D41AA

## **standby**

See redundant.

## **starting arrangement**

The protocol used between Meridian 1 PBX and a Central Office to control digit collection. See immediate start, delay dial and wink start.

## **storage medium**

A term used to refer to streaming tape, a floppy diskette or a hard disk.

## **strobe test**

An electrical pulse used to transfer a pattern of 1s and 0s into and out of memory. The memory passes the test if the output pattern matches what was input.

## **switchover**

A switchover occurs when the standby processor becomes the active processor.

## **system monitor**

A component found in the lower rear of Meridian 1 equipment columns. The system monitor reports the status of power related hardware for its column to the processor. The processor subsequently sends the system monitor's message to the SDI data terminals.

## **tag number**

A number identifying a test sequence.

## **TIE trunk**

A dedicated circuit connecting (tying) two Meridian 1 systems or a Meridian 1 system and a PBX.

**time slot**

On the Meridian 1, a time slot provides a channel to pass a digital bit of voice or data between telephones. Each telephone or trunk in use requires a time slot. The basic number of time slots used per network loop is 32. Time slots are labeled from 0 to 31, with time slot 0 used for signaling and time slots 2 to 31 used to pass voice or data. Superloops use four groups of time slots or 128 time slots per Superloop card.

**time stamp**

There are two types of time stamp as follows:

1. A time stamp is output within five minutes of the processor detecting an problem to warn service personnel. For example, TIM061 09:00 9/3/1994 CPU0. The time stamp is normally accompanied by a message.
2. When a call register is established for a telephone or trunk, the processor marks the start time and each interval action time with a time stamp in milliseconds. The time stamps are used to start, stop and control timers. For example, a rotary dial telephone sends dialed digits as a series of precisely timed on/off-hooks. If the on-hook to off-hook time interval is short, the processor interprets this as a switch hook flash rather than a dialed digit. If an off-hook to on-hook transition lasts too long, the processor interprets this as a call which is finished or abandoned and tears down the connection.

**TN (Terminal Number)**

A physical or hardware location address, made up of a network loop number, PE shelf number, PE card number and unit number.

**TNTRANS (TN Translator)**

A table used by the processor to convert a TN to a DN. When a telephone goes off-hook, it sends its TN to the processor. The processor must match the TN to a DN in order to get the particulars about the telephone to service the call.

**transient data**

The same as U data. See unprotected data store.

# TERMS

## **tree**

A software data structure.

## **TTY (Teletypewriter)**

A data terminal used to transmit and receive commands and responses when you are programming. Generically a TTY refers to any dumb terminal or DTE used to pass ASCII data. A DTE used for communicating alphanumeric information with the Meridian 1 system. Literally, an electro-mechanical device developed in the early 1920s by the Teletype Corp. to pass data. The teletype looked similar to a typewriter.

## **U data (unprotected data)**

See unprotected data store.

## **UEM (Universal Equipment Module)**

A stylish aluminum box holding a card cage.

## **ungraceful switchover**

A term that describes a forced processor switchover. Examples of ungraceful switchovers are: The diagnostic command SCPU to switch processors. The Normal/Maintenance switch on the standby processor placed in the Normal mode.

## **unpacked TN**

An unpacked TN is a decimal TN. See TN and packed TN.

## **unprotected data**

See unprotected data store.

## **unprotected data store**

The same as U data. The unprotected data store memory segment holds data blocks used by the processor to update information about the progression of calls. When the calls are finished the processor tears down the calls or erases the information in the unprotected data store segment. The data blocks can be varied in number to accommodate the variety of lines or trunks installed, amount of traffic, and so on. They contain:

- ◆ high and low priority input buffers for MESSIN
- ◆ SL-1 and 500 output buffers for MESSOUT

- ◆ call registers - one call register of some 40 plus words is needed for each call and holds information such as;
  - calling TN
  - called TN
  - time slots in use
  - dialed digits
  - timed status
  - call progress markers
  - network paths in use

**upper write protect boundary**

The upper address portion of the write protect memory segment.

**warm start**

A term that describes the operating system restart and the SL-1 software task list restart. A restart of the SL-1 software task list only, is an initialization.

**watchdog time-out**

A timer used to check the processors ability to complete a task. On the completion of every processor task the processor must reset the watchdog timer within 1.024 seconds. A watchdog time-out causes an initialization or a system reload.

**WATS (Wide Area Telephone Service) trunk**

In North America, a circuit between a public exchange network switch and a Meridian 1 system. WATS telephone calls are billed at a reduced rate.

**wink start**

A signal used on trunks to control the transfer of dialed digits. The terminating switch finds and attaches its digit collection equipment, then sends a 140 ms off-hook, on-hook pulse to the originating switch that requests the digits to be sent.

**workschedule**

A list of tasks the processor performs that controls all activities of the Meridian 1 system.

# TERMS

## **write protect violation**

An indication of an attempt to write into a protected area of memory. A write protect violation causes in a system reload.

## **X08**

An early edition of the software package for International Business applications. X08 was replaced by X11 with Supplementary Features. With the release 20 software, X11 denotes global applications software.

## **X11**

A software package for North American Business applications. With the release 20 software, X11 denotes global applications software.

## **XNET**

A mnemonic for a superloop network card.

## **XPE0**

The first module (PE shelf) cabled to a superloop.

## **XPE1**

The second module (PE shelf) cabled to a superloop.

## **XPEC**

A mnemonic for System Monitor.

## **XSM**

A mnemonic for System Monitor. A component found in the lower rear of Meridian 1 equipment columns. The system monitor reports the status of power related hardware for its column to the processor. The processor subsequently sends the system monitor's message to the SDI data terminals. 



## Meridian 1 Options 21 through 81C

# Fault Clearing Guide

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