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Meridian SL-100

Commercial Systems

Trouble Locating and Clearing Procedures

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NORTEL NETWORKS™

Meridian SL-100

Commercial Systems

Trouble Locating and Clearing Procedures

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Version 08.02, Standard release, MSL10. Publication moved into color templates. This book must be used with the following DMS-100 Family trouble locating procedures and clearing procedures for the full complement of documentation:

- *DMS 100 Trouble Locating and Clearing Procedures.*

April 1999

Version 08.01, Standard. This document represents the standard release of this document for product release MSL10.

October 1998

Version 07.01, Standard. This document represents the standard release of this document for product release MSL09.

Contents

About this document

When to use this document

This publication contains procedures for locating and clearing faults. These procedures are used by switch maintenance personnel to troubleshoot and clear faults.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the next software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the same software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in the *Commercial Systems Master Index of Publications*.

This document is written for all Meridian SL-100 Family offices. More than one version of this document may exist.

References in this document

The following list shows related publications to which this document refers in appropriate places in the text.

- *Commercial Systems Alarm Clearing Procedures*
- *Commercial Systems Translations Guide*
- *Commercial Systems Card Replacement Procedures*
- *Commercial Systems Routine Maintenance Procedures*

- *Commercial Systems Log Report Reference Manual*
- *Commercial Systems Recovery Procedures*

Applicability of this document

This document applies to Meridian SL-100 offices that have MSL04 or later software releases.

Organization of this package

This document belongs to the Meridian SL-100 documentation package that supports the Northern Telecom line of Meridian SL-100 products. The Meridian SL-100 documentation package is a subset of the DMS-100 Family library.

What precautionary messages mean

The types of precautionary messages used in Nortel Networks documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

ATTENTION - Information needed to perform a task

ATTENTION

If the unused DS-3 ports are not deprovisioned before a DS-1/VT Mapper is installed, the DS-1 traffic will not be carried through the DS-1/VT Mapper, even though the DS-1/VT Mapper is properly provisioned.

DANGER - Possibility of personal injury

DANGER

Risk of electrocution

Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high-voltage lines. Until the fuses are removed, the high-voltage lines are active, and you risk being electrocuted.

WARNING - Possibility of equipment damage

WARNING
Damage to the backplane connector pins
Align the card before seating it, to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors.

CAUTION - Possibility of service interruption or degradation

CAUTION
Possible loss of service
Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service will be lost if you remove a card from the active unit.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

>BSY

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

>BSY CTRL

Variables

Variables are shown in lowercase letters:

>BSY CTRL ctrl_no

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.

The following excerpt from a procedure shows the command syntax in this document:

Manually busy the CNTRL on the inactive plane by typing

>BSY CTRL ctrl_no

where

cntrl_no is the number of the CNTRL () or 1)

Example of a MAP response:

FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.

Trouble locating and clearing procedures

Introduction

This chapter contains procedures to locate and clear trouble in a Meridian SL-100 office. The procedures contain the following sections:

- Application
- Definition
- Common procedures
- Action
- Step-action instructions

Application

This section describes the purpose of the procedure.

Definition

This section provides context-setting information for trouble locating and clearing procedures. For example, a trouble locating and clearing procedure that has an associated log report provides a description of the associated log.

Common procedures

This section lists common procedures to use during the trouble locating and clearing procedure. A common procedure is a series of steps that repeat within maintenance procedures. An example of a common procedure is the procedure for the removal and the replacement of a card. Trouble locating and clearing common procedures reside in a common procedures chapter in this Northern Telecom Publication (NTP). Do not use common procedures unless the step-action procedure directed you to use common procedures.

Action

This section contains a summary flowchart and a list of steps. The flowchart is a summary of the main actions, decision points, and paths you take. The purpose of the flowchart is to preview what you will be doing and to help prepare for it. For example, if the instructions involve another office, you need to advise that office before you begin the step-action instructions. Do not use the summary flowchart to perform the procedure.

Step-action instructions

The step-action instructions tell you how to locate and clear a trouble. Always perform the steps in the order specified. The successful completion of a step is dependent on previous steps.*The step-action instructions provide the command syntax and machine output you use or see while performing this procedure.*

Determining where the trouble is located

Application

Use this procedure to determine whether the trouble is located at the switch or outside the switch.

Definition

Troubles can occur in any of the following three functional components:

- Meridian SL-100
- data link
- customer premises equipment

Switch personnel determine whether the trouble exists at or outside the switch by tracing through the communications interface between the switch and the host computer. The trouble locating procedure consists of three distinct subprocedures, which check physical connections, and must be performed in order:

- check for an input/output device (IOD) alarm
- check the central office data unit or modem
- check for disconnected cables

If the trouble is determined to be at the switch, following these subprocedures reveals the trouble and provides corrective action.The procedure then consists of the following two subprocedures dealing with logical connections at the host:

- verify that the session is logged on
- perform a switch computer application interface (SCAI) continuity test

If the fault has been found to be outside the switch, other indications may point to a problem, such as the SCAI200 log or a customer complaint. Refer to the procedure for clearing a SCAI link.

Common procedures

There are no common procedures referenced in this document.

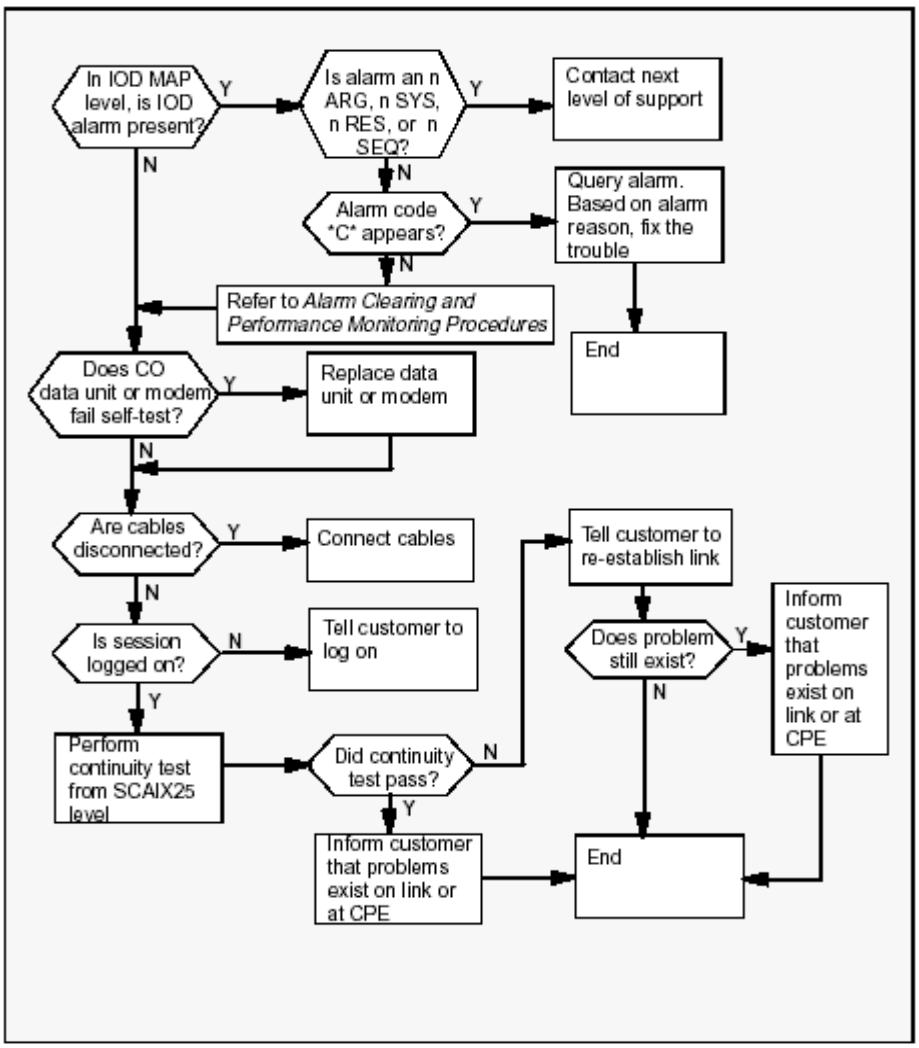
Action

This procedure contains a summary flowchart and a list of specific steps. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Determining where the trouble is located (continued)

Determining the location of the problem

Summary of Determining the location of the problem



Determining the location of the problem

At the MAP terminal:

1 To access the IOD menu at the MAP terminal, type
> MAPCI;MTC;IOD
and press the Enter key.

Determining where the trouble is located (continued)

2 Check for an IOD alarm by looking for an alarm code under the IOD subsystem header.

Example of a MAP display:

```
CC  MS  IOD  Net  PM  CCS  Lns  Trks  Ext
 .   .   .    .   .    .    .    .    .
```

If	Do
a dot (.) appears	step 19
an alarm code appears	step 3

3 identify the alarm code under the IOD subsystem header.

Example of a MAP display:

```
CC  MS  IOD       Net  PM  CCS  Lns   Trks   Ext
 .   .    n ARG    .   .    .    .     .      .
```

If an alarm code	Do
n ARG, n SYS, n RES, or n SEQ appears	step 32
other than those listed appears	Refer to Alarm Clearing Procedures for the procedure to clear the alarm. After clearing the alarm, go to step 19.
C appears	step 4

4 At the IOD level, display the multi–protocol controllers (MPCs) to determine where the trouble is originating by typing

> LISTDEV MPC

and press the Enter key.

Observe the STATUS column.

Example of a MAP display:

```
MPC    USER          STATUS   IOC   CARD   PORT
1      System Ready    0       3      0
2      System Ready    1       7      0
3      System SysB       2       8          0
```

5 Access the SCAIX25 MAP level by typing

>SCAIX25

and press the Enter key.

Determining where the trouble is located (continued)

6 Query the alarms by entering
> QUERY ALARM
and press the Enter key.
Example of a MAP display:

```
Severity    M  L  C    Remote_DNA   Reason
 CRIT       0  2  1     01208097      DMS LVL3 reset
```

7 Check the text displayed in the Reason field. The MAP display should state a reason for a trouble or that the SCAI link is clear.

If the reason displayed	Do
is SCAI application clear	step 19
is Host call cleared	step 24
is Host LVL3 reset	step 24
is DMS LVL 3 reset	step 8
is MPC SysBusied	step 8
is MPC link reset	step 8

8 To exit the SCAIX25 MAP level, type
>QUIT
and press the Enter key.

9 To post the MPC for the problem determined in step 4, type
> IOC n;CARD y
and press the Enter key.
where
n is the number of the IOC for the problem.
y is the number of the MPC card. In step 4, the system assigns CARD 8.

10 Locate the download file for the MPC.

11 Busy all equipped links associated with the MPC.

- To busy the link if the link is SysBsy, type
  >BSY LINK n
  and press the Enter key.
  where

n is the link number

- If the link is enabled (conversations are active on the link), force the link busy by typing
  >BSY LINK n FORCE
  and pressing the Enter key.
  where
  n is the link number
  Example of a MAP display:
  TYPE YES TO VERIFY FORCE, NO TO CANCEL COMMAND
  Please confirm (“Yes” or “No”): reset

12 Enter “YES” to verify the FORCE.

13 Busy the MPC by typing
> BSY
and press the Enter key.

14 Test the MPC by typing
> TST
and press the Enter key.

If the test	Do
passed	step 16
failed	step 15
indicated C-side busy	step 33

15 Replace the MPC card. Refer to Card Replacement Procedures for the card replacement procedure, and return to this point.

16 Return the MPC to service by typing
> RTS
and press the Enter key.

17 Return each MPC link to service by typing (for each link)
> RTS LINK link#
and press the Enter key.
where
link# is the link number you return to service

Determining where the trouble is located (continued)

18 Check the alarm display.

If the link	Do
is cleared	step 19
is not cleared	step 33

At the IOD shelf

19 Verify the operation of the data unit by performing a self-test on the NT4X25 data unit:

- Lift the flip-flop lid of the data unit, and toggle the self-test/normal option switch to the self-test position and then back to the normal position.
- **Response:** A short beep is heard. After a short delay, all LEDs on the face of the data unit illuminate for approximately 4 seconds.
- If the directory number LEDs flash, a self-test failure is indicated.
- A short beep is heard. All LEDs (except the power LED) turn off.

If the CO data unit	Do
fails the self-test	step 20
passes the self-test	step 21

20 Replace the data unit with a new data unit.

21 Check for disconnected cables between the MPC circuit pack and the data unit or modem. Also check between the data unit or modem and the jack.

- The 32-pin connector of the cable should be connected to either port 2 or 3 of the MPC circuit pack.
- The 25-pin connector of the cable should be connected to the data unit or modem.
- The data unit or modem connects to the jack by a cable with RJ11 connectors. If the connect light on the data unit is

flashes, either the data unit is bad or you must connect the cable.

If	Do
you find disconnected cables	step 22
you do not find disconnected cables	step 24

22 Connect the disconnected cables.

23 Go to step 34.

At the MAP terminal:

24 The problem is not in the CO.
To access the IOD MAP level at the MAP terminal, type
>MAPCI;MTC;IOD
and press the Enter key.

25 To post the MPC, type
>IOD n;CARD y
and press the Enter key.
where
n is the number of the IOC for the problem.
y is the number of the MPC card. In step 4, the system assigns CARD 8.

26 Determine if the session is logged on. “L” indicates the session is logged on.

If the session	Do
is logged on	step 29
is not logged on	step 27

27 Inform the subscriber the session is not logged on. The subscriber must log on to clear the problem.

28 Go to step 34.

29 To access the SCAIX25 MAP level at the MAP terminal, type
>SCAIX25
and press the Enter key.

Determining where the trouble is located (end)

30 To perform a SCAI continuity test, type
>SCAITEST
and press the Enter key.

If the test	Do
failed	step 31
passed	step 32

31 Tell the subscriber to establish the link again and to log on.

If the problem	Do
stops	step 34
continues	step 32

32 Inform operating company personnel a problem is present in the data link outside the CO or with the customer premises equipment.

33 For additional help, contact the next level of support.

34 The procedure is complete.

Clearing the trouble on the SCAI link

Application

Use this procedure to clear SCAI link trouble indicated by either a subscriber complaint or generation of the SCAI200 log.The procedure “Determining the location of the trouble” should be followed first to determine that the problem exists outside the switch.

Definition

Once the problem has been isolated to the SCAI link, follow this procedure to clear the link. Indications that the link is faulty are the SCAI200 log and subscriber complaints. Possible causes of these indications could reside in the host computer or the SCAI link.

If clearing the link does not solve the problem, the switch maintenance personnel need to contact the appropriate field service personnel and inform them that a problem exists with the host equipment.

Common procedures

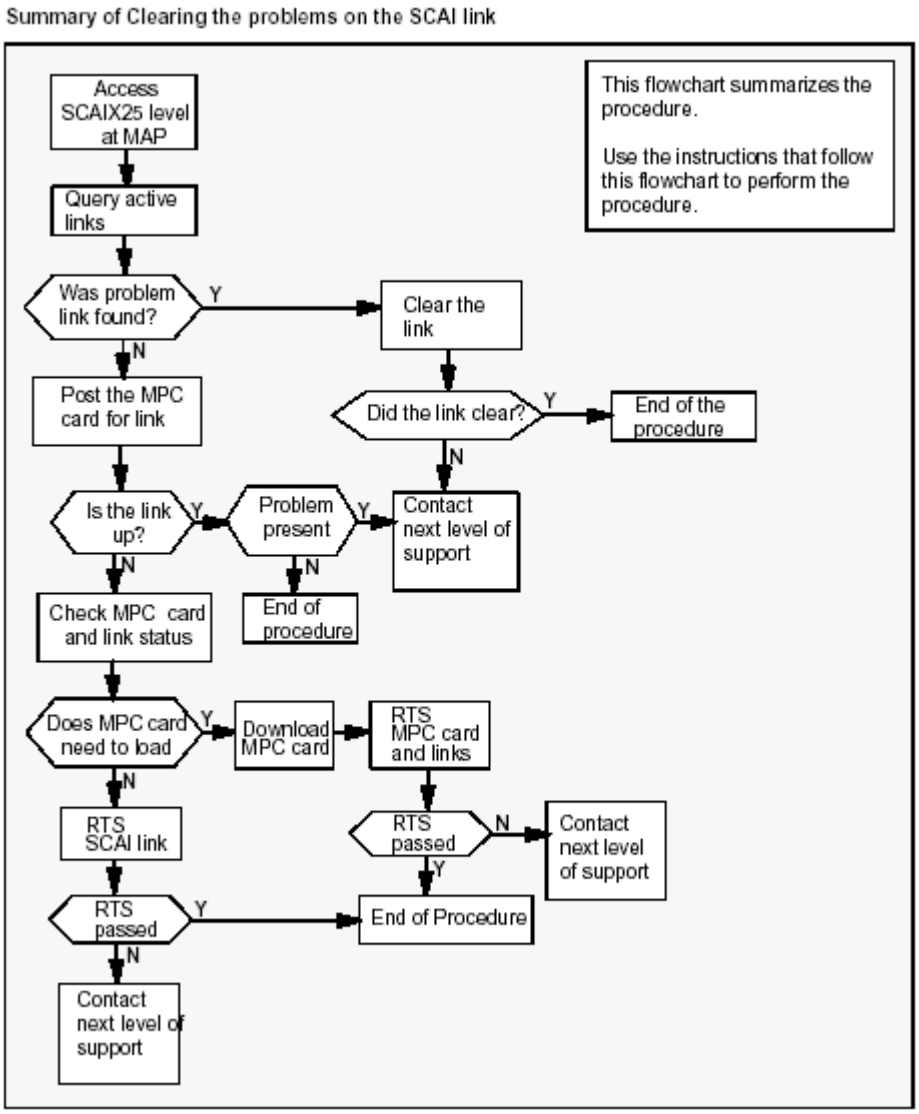
None

Action

This procedure contains a summary flowchart and a list of specific steps. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Clearing the trouble on the SCAI link (continued)

Summary of Clearing trouble on the SCAI link



Clearing the trouble on the SCAI link

At the map terminal

1 Access the SCAIX25 MAP level by typing
>MAPCI;MTC;IOD;SCAIX25
and press the Enter key.

Clearing the trouble on the SCAI link (continued)

2 Post the link that was reported to have the problem by typing
>POST mpc# link#
and press the Enter key.
where
mpc# is the number of the MPC where the link is associated
link# is the number of the link where the problem is encountered

3 Check the MAP display for active links. Active links are identified by the letter "L". Query the active links by typing
>QUERY SESSION session#
where
session# is the active session number to be queried (0-59)

If the problem link	Do
is found	step 14
is not found	step 4

4 Post the MPC card for that link to ensure that the link is up by typing
>IOD;IOC x;CARD y
and press the Enter key.
where
IOC x is the input/output controller (IOC) shelf number where the MPC resides
CARD y is the number of the MPC card

If the problem link	Do
is not up	step 5
is up but problem still exists	step 16
is up and fault has cleared	step 17

Clearing the trouble on the SCAI link (continued)

5 Check the status of the MPC and its link.

If the MAP display of the posted MPC card	Do
resembles the display below	step 6
does not resembles the display below	step 8

Example of a MAP display:

```
Card  7      Unit      10
    User       SYSTEM   BOARD    LINK0   LINK1   LINK2    LINK3
    Status     Ready    COMACT   UNEQ    N/A     UNEQ     OFFL
```

6 Busy the link by typing
>BSY LINK n
and press the Enter key.
where
n is the link number

7 Return the busied link to service by typing
>RTS LINK n
and press the Enter key.
where
n is the link number

If RTS	Do
passed	step 17
failed	step 16

Clearing the trouble on the SCAI link (continued)

8 Continue to check the status of the MPC and its link.

If the MAP display of the posted MPC card	Do
resembles the display below	step 9
does not resembles the display below	step 16

Example of a MAP display:

```
Card  7     Unit     10
   User      SYSTEM   BOARD    LINK0   LINK1   LINK2   LINK3
   Status    Ready    NOLOAD   UNEQ    N/A     UNEQ    OFFL
```

9 Download the MPC card by typing
>DOWNLDmpc#
where
mpc# is the number of the MPC card

Example of a MAP display:

```
Card  7     Unit     10
   User      SYSTEM   BOARD    LINK0   LINK1   LINK2   LINK3
   Status    Ready    DNLDED   UNEQ    N/A     UNEQ    OFFL
```

10 Busy the MPC card by typing
>BSY
and press the Enter key.

11 Return the MPC card to service by typing
>RTS
and press the Enter key.
where
n is the link number

If RTS	Do
passed	step 12
failed	step 16

Clearing the trouble on the SCAI link (continued)

12 Busy each link associated with the MPC card by typing (for each link)
>RTS LINK link#
and press the Enter key
where
link# is the number of the link to be busied

13 Return each link to service by typing
>RTS LINK link#
and press the Enter key
where
link# is the number of the link to be returned to service

If RTS	Do
passed	step 17
failed	step 16

14

CAUTION
Clearing the link closes communications currently using that link.
The session is brought down by issuing the CLEAR command from the SCAIX25 MAP level. The link remains up.

Clear the link by typing
>CLEAR SESSION session#
and press the Enter key.
where
session# is the session number on the link to be cleared
Example of a MAP display:
Active session: Do you really want to clear (Yes or NO)?

15 Respond to the prompt by typing
>YES

Clearing the trouble on the SCAI link (end)

and press the Enter key

If the link	Do
clears	step 17
did not clear	step 16

16 For further assistance, contact the personnel responsible for the next level of support.

17 You have completed this procedure.

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