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DMS-100 Family

XPM DS-1

XPM Log Reference Manual (DS-1)

XPM14 and up Standard 12.01 September 2000

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DMS-100 Family

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Contents

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About this document

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 *DMS-10 and DMS-100 Family Product Documentation Directory*, 297-8991-001.

References in this document

The following documents are referred to in this document:

- *Alarm Clearing Procedures*
- *Customer Data Schema Reference Manual*
- *Card Replacement Procedures*
- *Log Report Reference Manual*
- *Office Parameters Reference Manual*
- *DMS-10 and DMS-100 Family Product Documentation Directory*, 297-8991-001.
- *Subscriber Carrier Module-100 Urban Maintenance Manual*, 297-8241-550
- *Star Remote System Maintenance Manual*, 297-8353-550

- *Translations Guides*
- *Trouble Locating and Clearing Procedures*

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 used in this document:

Procedure 1 About this document example

At the MAP terminal

1 Manually busy the CTRL on the inactive plane by typing

>BSY CTRL ctrl_no

and pressing the Enter key.

where

ctrl_no is the number of the CTRL (0 or 1)

Example of a MAP response

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

1 XPM product related logs

The Extended Peripheral Module log system

What is a log report?

A log report is a message that the DMS switch generates when an important event occurs in the switch or a switch peripheral. Log reports include:

- status and activity reports
- reports on hardware or software faults
- test results
- changes in state.

Log reports can include other events or conditions that can affect the performance of the switch. The system can generate a log report in response to a system or manual action.

Product related logs

This document provides information on logs that relate to an XMS-based peripheral module (XPM) product or feature. Log data and recommended actions for an XPM product appear in the chapters. The log data and recommended actions cannot be for information only logs. For a complete description of all logs, refer to the *Log Report Reference Manual*.

How to control output from the log system

The user can control log output processes, like storage, distribution, prioritization, suppression, and thresholds, in the following two ways:

1. An office can make changes to the appropriate customer data tables to customize the output from the log system. An office customizes the output to meet local requirements. For additional information, refer to the *Customer Data Schema Reference Manual*.
2. The user can perform log utility (LOGUTIL) commands in the LOGUTIL level on a MAP terminal. The LOGUTIL commands can override parameters set in the customer data tables. For example, the user can use

the commands to turn log reports OFF, or route output to a different device.

Note: A restart of the DMS-100 operating system and user processes resets the temporary changes made through the use of the LOGUTIL commands.

2 Outside Plant Module related logs

LCM and RMM related logs

The peripheral module (PM) series of Digital Multiplex System (DMS) logs indicate conditions, state changes, and other events in the line peripherals of the DMS switch. Some PM logs apply to the line concentrating module (LCM) and remote maintenance module (RMM) parts of the Outside Plant Module (OPM). The log reports for these OPM parts are identified as the remote line concentrating module (RLCM). The following table contains a list of the log reports. The table provides a description of the log, the causes, and recommended responses.

Logs PM128 and PM181 indicate a traffic overload condition in the RLCM. The system generates log PM128 with the phrase LCM Out of Overload when normal call processing resumes.

OPM log reports

The log reports associated with outside plant module (OPM) power and environment system (PES) are PES100 through 117. The system generates logs to record actions that occur to the OPMPES. The following table contains a description of each log.

ESA log reports

The ESA related log reports table lists the maintenance log reports that the system generates during emergency stand-alone (ESA). The table provides a description of each log, causes, and recommended responses. For a

description of these logs and response information, refer to *Log Report Reference Manual*.

Table 2-1 RLCM related logs (Sheet 1 of 9)

Log name	Causes	Response
IOAU112	RLCM is not REXed for 7 days	Investigate the reason REX is not run on the RLCM. Possible reasons are that the REX is • suspended for the LCM • disabled in table REXSCHED • manually turned off with the TST command at the PM level • manually turned off through table OFCVAR with parameter NODEREXCONTROL • disabled because the LCM is ISTb. If the LCM is ISTb, take corrective action to return the LCM to service so the REX test can run.
NAG400	Hourly under control of the NAG command. Lists information on nodes not in-service (InSv). This information includes information on REX results.	The review of the log report determines when the central office personnel must take steps to return the node to service or enable the REX node. ***Note:*** The LCMs display LCM_REX and LCM ring continuity and converter voltages (LCMCOV_REX) test results. A colon separates the test results. A status of N/A indicates the LCMCOV_REX test does not run on that LCM variant. The LCMCOV_REX tests run on LCMs, XLCMs, OPMs, and RLCMs.
PM100	Indicates the RMM fails a diagnostic test.	Repeat the diagnostic test. The system produces a card list. Replace the first defective card. Refer to notes 1 and 2.
PM101	Indicates the LCM or RMM failed a checksum test. The DMS-100 switch cannot obtain a data integrity value from the PM or value is not correct.	Repeat the checksum test. Refer to note 1 and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 2-1 RLCM related logs (Sheet 2 of 9)

Log name	Causes	Response
PM102	Indicates a system request changes the LCM or RMM to the system busy (SysB) state.	Determine the cause of the SysB alarm. Post and test the RLCM. Refer to notes 1 and 2.
PM103	Indicates a manual request places the LCM or RMM offline (OffL) from the manual busy (ManB) state.	There is no action required.
PM104	Indicates a manual request changes the LCM or RMM from the OffL state to unequipped (Uneq). The change occurs through the deletion of the tuple in table LCMINV that corresponds to the RLCM.	There is no action required.
PM105	Indicates the LCM or RMM is manually busied (ManB).	There is no action required.
PM106	Indicates that a system request returns the LCM or RMM to service (RTS) from the SysB state. Indicates that a manual request RTS the LCM or RMM from the ManB state.	There is no action required.
PM107	Indicates that a system request changes the LCM or RMM to the central-side busy (CBsy) state.	Post and test the affected LCM or links. Refer to notes 1and 2.
PM108	Indicates that the system detects a firmware or hardware error in the RLCM processor card. Log PM108 identifies the error and the card that can be defective.	If the system generates log PM108 for less than 2 min, there is no action required. If the system generates the log for more than 2 min, post and test the LCM. Replace indicated cards. Refer to notes 1 and 2.
PM109	Indicates a DS-1 link between the host LGC/LTC and the RLCM is peripheral-side busy (PBsy). The link is PBsy because a DS-1 carrier line is SysB.	If the system generates log PM109 for less than 2 min, there is no action required. If the system generates the log for more than 2 min, the DS-1 carrier requires trunk maintenance. Refer this problem to the trunks maintenance group.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 2-1 RLCM related logs (Sheet 3 of 9)

Log name	Causes	Response
PM110	Indicates a service count threshold, like bipolar violations, is reached for a DS-1 link between the host LGC/LTC and the RLCM.	If the limit clears, there is no action required. If the limit does not clear, the DS-1 links require trunk maintenance. Refer this problem to the trunks maintenance group.
PM111	Indicates a DS-1 link between the host LGC/LTC and the RLCM is RTS.	There is no action required.
PM113	Indicates RLCM processor card encounters message congestion. This condition can occur on high traffic days.	If the system generates log PM113 for less than 2 min, there is no action required. If the system generates the log for more than 2 min, determine the cause of the congestion and take corrective action.
PM114	Indicates trouble occurs during load or test of LCM or RMM.	Test the LCM or RMM. The system generates an alarm and card list. Refer to notes 1and 2.
PM115	Indicates the RLCM processor encounters miscellaneous trouble during normal operation.	If the system generates less than three PM115 reports in 2 min, there is no action required. If the system generates more than three reports in 2 min, test the RLCM. Refer to notes and .
PM116	Indicates the RLCM sent a message error report to central control (CC).	A PM108, PM115, PM124, PM125, PM126, or PM138 report precedes this report. Ignore this report. Investigate the previous report.
PM117	Indicates a link-related problem occurred in RLCM operation.	Test the RLCM. The system generates an alarm and card list. Refer to notes 1 and 2.
PM118	Indicates the RLCM processor encounters miscellaneous trouble.	If the system generates less than three PM115 reports in 2 min, there is no action required. If the system generates more than three reports in 2 min, test the RLCM. If the system cannot locate a fault, the load can be corrupt. Load the RLCM again. Refer to notes1and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 2-1 RLCM related logs (Sheet 4 of 9)

Log name	Causes	Response
PM120	Indicates one or more RLCM processor error counters contain nonzero values when the CC node audit reads the counters. The system resets the counter to zero.	Check for continuous reports from the same PM during normal operation. Collect PM120 reports. If the system finds PM120 reports that associate with the same RLCM or RMM, test the RLCM or RMM. Refer to notes 1and 2.
PM122	Indicates the RLCM processor exception report is encountered during normal operation.	Refer to the Command Protocol Violations Table of PM122 description in *Log Report Reference Manual* for problems that this report indicates.
PM124	Indicates the RLCM processor encounters miscellaneous trouble during normal operation.	Refer to the Command Protocol Violations Table of PM124 description in *Log Report Reference Manual* for problems that this report indicates.
PM125	Indicates that the system detects a firmware or hardware error in the RLCM processor.	Test the RLCM. Refer to notes 1and 2.
PM126	Indicates the RLCM processor encounters miscellaneous trouble during normal operation.	Test the RLCM. If you cannot locate a fault, and if the load is corrupted, reload the RLCM. Refer to notes and .
PM127	Indicates the high-level data link control (HDLC) link between the host office and the RLCM is forced out of service.	Link maintenance can be required. The RLCM can be forced into emergency stand-alone (ESA) operation. Make sure the RLCM returns to normal operation when the link is restored.
PM128	Indicates the RLCM encounters trouble during normal operation. The state of the PM changes to in-service trouble (ISTb), but service is not affected. The system also generates this log because of a routine exercise (REx) test failure.	Post and test the indicated RLCM or manually repeat the REx test that causes the log report. Note the alarm and card list that result. Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 2-1 RLCM related logs (Sheet 5 of 9)

Log name	Causes	Response
PM132	Indicates the result of an office-level (LCM-level) tip/ring reversal relay test (BRT) of a bus interface card (BIC), NT6X54, in an RLCM line drawer. The results are passes, fails, or "`test not run...`" conditions.	If the test passes, there is no action required. If the test does not run, check the associated PM181 report. If the test fails, a manual BRT test must be run. The test produces a PM181 report and an ISTb alarm. Refer to notes 1 and 2.
PM179	Indicates a software condition occurred that affects the normal operation of the RLCM. Log PM179 supplies information related to a *PM Hardware Exception Report*.	Refer to the description of PM124 in *Log Report Reference Manual* for problems and responses that this report indicates.
	Features AF5911 and AF5912 add the Talk battery failure detected and Cannot test talk battery, modifications to this log report.	Refer to description of PM179 in *Log Report Reference Manual*, for problems and responses that this report indicates.
	Example log report LCM talk battery failure detected.	`*** PM179 JUN22 15:47:20 3114 TBL PM HW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 Talk Battery Failure detected on shelf 54 by RSC0 00 1 12 30`
	Example log report Cannot test talk battery.	`* PM179 JUN22 20:17:06 5214 TBL PM HW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 Cannot test Talk Battery on shelf 54 since no WLC provisioned.`
PM180	Indicates the system receives an unsolicited PM exception report from the LCM. Feature AF5890 appends the XLCM real-time overload field to this log report.	Collect all PM180 reports and contact next level of maintenance.
	Example log report LCM enters overload.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM enters overload: DMSX: 5 IUC: 0 SEQ: 0 RT OVLD:medium (4/9,A8)`

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 2-1 RLCM related logs (Sheet 6 of 9)

Log name	Causes	Response

	Example log report LCM overloaded	`* PM180 MAY14 12:37:10 6702`
		`TBL PM SW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`LCM overloaded: DMSX: 45`
		`IUC: 4 SEQ: 3 RT OVLD:medium`
		`(2/9,58)`

	Example log report LCM out of overload. The new information includes DMSX and Inter-unit communications (IUC) message lost totals up to 65,535. The peak real-time distress for the overload period and the duration of the overload period in minutes up to 255.	`* PM180 MAY14 12:37:10 6702`
		`TBL PM SW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`LCM out of overload:`
		`Total DMSX:1234 Total`
		`IUC:1230 SEQ: 3 RT OVLD`
		`peak: High (2/9,58)`
		`Duration: 25 mins`

	Example log report invalid real-time control variables. When the overload period ends, the XLCM finds that one or more of real-time control variables do not return to a normal state. Absence of this log indicates to operating company personnel that the XLCM deactivated the realtime overload protection mechanisms. This condition does not affect the XLCM capacity.	`** PM180 MAY14 12:37:10 6702`
		`TBL PM SW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`TASKID: 000B TIME: 8081`
		`TEXT: INV RT CTL`
		`5267 0000 4C14 0001 0064`
		`424A2555 7676 839F 5311 52AE`
		`839F 00F6 8399 99D2`

PM181	Indicates the LCM fails a diagnostic test.	This log indicates a failure in an automatic test. You can repeat the test manually to produce a card list. Refer to the description of PM124 in *Log Report Reference Manual* for problems and responses that this report indicates.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 2-1 RLCM related logs (Sheet 7 of 9)

Log name	Causes	Response
PM182	Indicates a peripheral side (P-side) DS30A link between the LCM and host interface equipment (HIE) is ManB. Indicates when a P-side link between the RMM and HIE is ManB.	There is no action required.
PM183	Indicates that a system request changed an LCM or RMM P-side link to SysB.	An alarm must be present. If an alarm is not present, test the RLCM. Refer to notes1 and 2 .
PM184	Indicates an LCM or RMM P-side link is RTS.	There is no action required.
PM185	Indicates when LCM firmware, hardware, or software detects an error condition that causes a trap-interrupt. The running process stops on the defective instruction.	Retain this report and all reports that the system generates during the minute before the report occurs. Contact the next level of maintenance.
PM300	Indicates RMM firmware, hardware, or software detects an error condition that causes a trap-interrupt. The running process stops on the defective instruction.	Retain this report and reports that the system generates during the minute before the report occurs. Contact the next level of maintenance.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 2-1 RLCM related logs (Sheet 8 of 9)

Log name	Causes	Response
PM600	REX fail reasons • Warm SWACT • Warm SWACT turned off • PreSWACT audit failure • Autonomous SWACT • OOS tests of inactive unit 0 • OOS tests of inactive unit 1 • RTS of inactive unit 0 • RTS of inactive unit 1 • Achieves superframe/data sync of unit 0 • Achieves superframe/data sync of unit 1 • InSv tests of inactive unit 0 before SWACT • InSv tests of inactive unit 1 before SWACT • InSv tests of active unit 0 after SWACT • InSv tests of active unit 1 after SWACT • InSv tests of inactive unit 0 after SWACT • InSv tests of inactive unit 1 after SWACT • RTS of inactive unit 0 after SWACT • RTS of inactive unit 1 after SWACT	Log PM600 records the maintenance actions performed on the LCM during the failed REX. The log records the actions from the start of the REX to the step that fails. Use this information to pinpoint the source of the REX failure.
Note 1: Refer to *Alarm Clearing Procedures.*		
Note 2: Refer to *Card Replacement Procedures.*		

Table 2-1 RLCM related logs (Sheet 9 of 9)

Log name	Causes	Response
PM600 (cont)	REX fail reasons (continued) • Achieving superframe/data sync of unit 0 after SWACT • Achieving superframe/data sync of unit 1 after SWACT • SWACT to unit 0 that SWACT controller refuses • SWACT to unit 1 that SWACT controller refuses • SWACT back to unit 0 occurs • SWACT back to unit 1 occurs • Recovery failed—SWACT	
PM777	Indicates a defective card and card location.	Refer to notes1 and 2.
Note 1: Refer to *Alarm Clearing Procedures.*		
Note 2: Refer to *Card Replacement Procedures.*		

Table 2-2 OPMPES related logs (Sheet 1 of 3)

Log name	Causes	Response
PES100	Indicates that a change from an OK, or Closed state to a Fail or Open state, occurs in one or more components of the PES.	Automatic action taken if temperature is high. The following descriptions describe actions to take for other events.
	One or both rectifiers fails from OK.	Repair rectifier or ac.
	Current limit on rectifier 0 or 1.	Overload on rectifier
	Front or side door open from closed.	Close cabinet door.
	The ac power supply fails from OK.	
	Battery charge controller (BCC) fuse fails from OK.	Replace fuse.
	Frame supervisory panel (FSP) state fails from OK.	Replace fuse.
PES101	Indicates the system does not perform a requested operation because of a failure or a higher priority request.	If failure occurs because of no response, check the RMM, LCM, and LTC. The OPMPES cannot communicate.
		If failure because of data mismatch occurs, check RMM and PES circuits.
		If timed out on message wait causes failure, repeat task or replace BCCDVR.
		Contact the next level of maintenance.
PES102	Indicates a mismatch between the software and the hardware state of the PES.	Perform a BSY and RTS to update the hardware to the state as stored in software.
PES103	Indicates a change in overall state by the alarm panel display (APD) from green or amber to red. Indicates a serious failure occurred.	Check logs PES100, 101, and 102 for failure reasons.
PES104	Indicates ac power failure, if the loadbus test registers a voltage measurement of 47V or less. From the time the system generates the log the batteries can still provide power for approximately 2 h. The system generates a PES107 log when the system recovers.	Prepare to lose system. Install emergency generators on-site. The trouble clears when the ac failure alarm condition clears.

Table 2-2 OPMPES related logs (Sheet 2 of 3)

Log name	Causes	Response
PES105	Indicates the charge bus test fails.	Replace the defective BCC board. Enter the TST CHARGEBUS command again. If the test is successful, the alarm clears.
PES106	Indicates when the last report of a charge bus alarm occurred and the audit runs a successful charge bus test. The system prints this log when the user makes the request for the charge bus test at the MAP level.	There is no action required.
PES107	Indicates a change to the OK or Closed state from a Fail or Open state in one or more components of the PES.	There is no action required.
PES108	Indicates the APD shows a change in overall state. A red light turns to green.	Serious problem cleared. There is no action required.
PES108	Indicates the APD shows a change in overall state. An amber light turns to offline.	Manual action occurred when the BATTINFO field of table OPMINV is changed or OPMPES is deleted.
PES109	Indicates a change from the OK state to a SysB state on one or more components of the PES.	Check the RMM state. If BCC, not all battery string pairs are on the loadbus.
PES110	Indicates a change to the ManB state on one or more components of the PES.	There is no action required.
PES111	Indicates a change from the OK state to the OffL state on one or more of the components of the PES.	There is no action required.
PES112	Indicates a change to the OK state on one or more components of the PES.	There is no action required.
PES113	Indicates a change to the Fail or Warning state from the OK state on one or more components of the PES. The BCC 0 or 1 fuse fails from OK. The ECU state fails from OK. The BCC 0 or 1 warning from OK.	The following descriptions describe action to take for each components. Replace fuse The ECU fans fail. Investigate and correct reason for failure. All BCC 0 or 1 strings do not connect to the load bus.

Table 2-2 OPMPES related logs (Sheet 3 of 3)

Log name	Causes	Response
PES114	Indicates the APD shows a change in overall state. A green light turns to amber. A minor alarm, potentially serious problem occurs.	Ignore if a command to BSY a BCCDVR or PESALRM succeeds.
PES115	Indicates a battery pair that does not move to the Chargebus. The voltage of one or both strings fails the test for the minimum voltage required, for connection to the Chargebus.	Attempt to recharge batteries. If charge does not hold, replace battery pair.
PES116	Indicates one of the following conditions: • Use of the Measure command occurred at the OPMPES level of the MAP display. • A request for Tst Chargebus occurred from the MAP terminal. • Measure All is done at the start of the battery rotation audit test/charge cycle. • The system encounters an error during the measurement of a battery pair at the request of the audit.	There is no action required. There is no action required. There is no action required. Test battery pair. Recharge battery pair.
PES117	Indicates a battery string is bad. The pair is failed if one string of the pair is bad. A failed pair returns to the loadbus.	Replace battery string, check voltage, and recharge.

Table 2-3 ESA related logs (Sheet 1 of 2)

Log name	Causes	Response
ESA101	The ESA subsystem generates this report when remote ESA static data are loaded. The maximum number of automatic lines (AUL) that ESA supports for the remote site exceeds the limit.	To maintain full support in ESA, reconfigure the remote site. Change entries in customer tables so the number of non-POTS AUL lines is less than or equal to 63 for RLCM.
ESA102	The ESA subsystem generates this report when remote ESA static data are loaded. This report warns that the maximum number of Meridian Digital Centrex (MDC) customer groups that ESA supports for the remote site exceeds the limit. The system treats the members of the overflow groups as POTS lines.	To maintain full support in ESA, reconfigure the remote site. Change the entries in customer tables so the number of non-POTS AUL lines is less than or equal to 63 for RLCM.
ESA103	The ESA subsystem generates this report when remote ESA static data loads. The maximum number of ESA prefix translators that ESA supports for the remote site exceed the limit.	To maintain full support in ESA, reconfigure the remote site. Change datafill in customer tables so the number of ESA prefix translators for the remote site is less than or equal to 272 for RLCM.
ESA104	The ESA subsystem generates this report when remote ESA static data loads. The maximum number of MDC extension translators that ESA supports for the remote site exceeds the limit.	To maintain full support in ESA, reconfigure the remote site. Change datafill in customer tables so the number of MDC translators for the customer groups is less than or equal to 256 for RLCM.
ESA105	The ESA subsystem generates this report when remote ESA static data loads. The maximum number of directory numbers (DN) that ESA supports for the remote site exceeds the limit.	To maintain full support in ESA, reconfigure the remote site. Change datafill in line tables so that the number of DNs in the remote site is less than or equal to 640 for the RLCM.
ESA106	The ESA subsystem generates this report when remote ESA static data loads. The maximum number of hunt groups that ESA supports for the remote, site exceeds the limit.	To maintain full support in ESA, reconfigure the remote site. Change datafill in hunt tables so the number of hunt groups, in the RSC, is less than or equal to 26 for RLCM.

Table 2-3 ESA related logs (Sheet 2 of 2)

Log name	Causes	Response
ESA107	The ESA subsystem generates this report when remote ESA static data loads. The maximum number of hunt members that ESA supports for the remote site exceeds the limit.	To maintain full support in ESA, reconfigure the remote site. Change datafill in hunt tables so the number of lines that belong to hunt groups is less than or equal 520 for the RLCM.
ESA108	The ESA subsystem generates this report when remote ESA static data loads. The system detects a change in the data. Some ABCD table data are lost. Call termination does not occur on the affected lines.	Reload the affected data through the MAP display.

3 OPAC related logs

Outside Plant Access Cabinet related logs

The output reporting system generates many log reports. Each log type does not have a printer device. The system generates the log reports in real time. These conditions cause log reports to appear randomly on the log device.

You cannot easily monitor the printer for background information that can occur hours before a specified event. You must use each subsystem buffer separately. These buffers allow you to view log reports of the same log type.

A fault can occur in the peripheral module (PM) subsystem. Maintenance personnel can dump the contents of the PM subsystem logs. Maintenance personnel can search the logs for any information associated with PM faults.

This action provides the necessary background information to help isolate the fault.

The PM series of logs indicate conditions, state changes, and other important events in the line peripherals of the DMS-100 switch.

A number of the PM logs apply to the line concentrating module (LCM). A number of PM logs apply to the remote maintenance module (RMM) parts of the Outside Plant Access Cabinet (OPAC). The following table lists the PM

logs. The table provides a description of the log, and the reason the system generated the log. The table provides recommended responses.

Table 3-1 OPAC related logs (Sheet 1 of 8)

Log name	Causes	Response
IOAU112	The system did not REX the OPAC for 7 days	Investigate the reason why REX did not run on the OPAC. Possible reasons include: • REX is suspended for the LCM • The user disables REX in table REXSCHED • The user uses the TST command at the PM level to disable REX. • the user disables REX through table OFCVAR. The user uses parameter NODEREXCONTROL. • an ISTb state in the LCM disables the REX. If the LCM is ISTb, take corrective action to return the LCM to service. The REX test can run when the LCM is in service.
NAG400	Hourly under control of the NAG command. Lists information. Information includes REX results, information about all nodes not in-service (InSv).	The log report determines the action of operating company personnel. Operating company personnel must either return the node to service or have the node REX enabled if this action is appropriate. ***Note:*** LCMs display LCM_REX and LCM ring continuity and converter voltages (LCMCOV_REX) test results. A colon separates these results. A status of N/A indicates the LCMCOV_REX test does not run on that LCM variant. LCMCOV_REX tests run on LCMs, XLCMs, OPMs, and RLCMs.
PM100	Indicates the RMM failed a diagnostic test.	Repeat the diagnostic test. The system produces a card list. Replace the first defective card. Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 3-1 OPAC related logs (Sheet 2 of 8)

Log name	Causes	Response
PM101	Indicates the LCM or RMM failed a checksum test. The DMS-100 switch did not retrieve a data integrity value from the PM, or the value was incorrect.	Repeat the checksum test. See notes 1 and 2.
PM102	Indicates a system request changed the LCM or RMM to the system busy (SysB) state.	Determine the cause of the SysB alarm. Post and test the OPAC. See notes 1 and 2.
PM103	Indicates a manual request placed the LCM or RMM offline (OffL) from the manual busy (ManB) state.	No action is required.
PM104	Indicates the user changed the LCM or RMM from the OffL state to unequipped (Uneq). The user deleted the tuple in table LCMINV associated with the OPAC.	No action is required.
PM105	Indicates the user busied (ManB) the LCM or RMM .	No action is required.
PM106	Indicates a system request returned the LCM or RMM to service (RTS) from the SysB state. A manual request can return the LCM or RMM to service from a ManB state.	No action is required.
PM107	Indicates a system request changed the LCM or RMM to the central-side busy (CBsy) state.	Post and test the affected LCM or links. See notes 1 and 2.
PM108	Indicates the system detected a firmware or hardware error in the OPAC processor card. PM108 identifies the error and the card that can be defective.	If the system generates the PM108 for less than 2 minutes, there is no action required. In other conditions, you must post and test the LCM. You must indicate the cards replaced. Refer to notes 1 and 2.
PM109	Indicates a DS-1 link between the host LGC/LTC and the OPAC has been made peripheral-side busy (PBsy). This change occurs because a DS-1 carrier line is SysB.	If the system generates PM109 for less than 2 minutes, there is no action required. Otherwise, the DS-1 carrier requires trunk maintenance. Refer this problem to the trunks maintenance group.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 3-1 OPAC related logs (Sheet 3 of 8)

Log name	Causes	Response
PM110	Indicates a service count threshold was reached for a DS-1 link. This link is between the host LGC/LTC and the OPAC.	If the limit is cleared, there is no action required. In any other conditions, the DS-1 links require trunk maintenance. Refer this problem to the trunks maintenance group.
PM111	Indicates the system returned to service a DS-1 link between the host LGC/LTC and the OPAC.	There is no action required.
PM113	Indicates OPAC processor card encountered message congestion. This condition can occur on high traffic days.	If the system generates PM113 for less than two minutes, there is no action required. In any other conditions, you must determine the cause of the congestion and take corrective action taken.
PM114	Indicates a problem occurred when the system attempted to load or test LCM or RMM.	Test the LCM or RMM. The system generates an alarm and card list. Refer to notes 1 and 2.
PM115	Indicates the OPAC processor detected problems during normal operation.	If the system generates less than three PM115 reports in 2 minutes, there is no action required. In any other conditions, test the OPAC. Refer to notes 1 and 2.
PM116	Indicates the OPAC sent a message error report to central control (CC).	A PM108, PM115, PM124, PM125, PM126, or PM138 report immediately precedes this report. Ignore this report and investigate the preceding report.
PM117	Indicates the system detected a problem related to a link in OPAC operation.	Test the OPAC. The system generates an alarm and card list. Refer to notes 1 and 2.
PM118	Indicates the OPAC processor detected trouble.	If the system generates less than three PM115 reports in 2 minutes, there is no action required. In any other conditions, test the OPAC. If the audit does not detect a problem, the load can be corrupt. You must reload the OPAC. Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 3-1 OPAC related logs (Sheet 4 of 8)

Log name	Causes	Response
PM120	Indicates one or more OPAC processor error counters contained nonzero values when the CC node audit read the error counters. The system resets the counters to zero.	Check for repeated reports from the same PM during normal operation. Collect PM120 reports. If the audit detects many PM120 reports associated with the same OPAC or RMM, test the OPAC or RMM. Refer to notes 1 and 2.
PM122	Indicates the system detected the OPAC processor exception report during normal operation.	Refer to the Command Protocol Violations Table of PM122 description in *Log Report Reference Manual* for specified problems that this report indicates.
PM124	Indicates the OPAC processor detected problems during normal operation.	Refer to the Command Protocol Violations Table of PM124 description in *Log Report Reference Manual* for specified problem indicated by this report.
PM125	Indicates the system detected a firmware or hardware error in the OPAC processor.	Test the OPAC. Refer to notes 1 and 2.
PM126	Indicates the OPAC processor detected problems during normal operation.	Test the OPAC. If the test does not detect a problem, the load can be corrupt. You reload the OPAC. Refer to notes 1 and 2.
PM127	Indicates the high-level data link control (HDLC) link between the host office and the OPAC was forced out of service.	The link can require maintenance. The OPAC can be forced to emergency stand-alone (ESA) operation. Make sure the OPAC returns to normal operation when you restore the link.
PM128	Indicates the OPAC encountered problems during normal operation. The state of the PM changes to in-service trouble (ISTb). This change does not affect service. The system generates this log when a routine exercise (REx) test fails.	Post and test the indicated OPAC or manually repeat the REx test that causes the log report. Note the resulting alarm and card list. See notes 1 and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 3-1 OPAC related logs (Sheet 5 of 8)

Log name	Causes	Response
PM132	Indicates the result of an office-level (LCM-level) tip/ring reversal relay test (BRT). This test runs on a bus interface card (BIC), NT6X54, in an OPAC line drawer. This log indicates passed, failed, or "`test not run...`" conditions.	If log indicates test passed, there is no action required. If the test does not run, you must check the associated PM181 report. If the test failed, you must perform a manual BRT test. This test produces a PM181 report and an ISTb alarm. Refer to notes 1 and 2.
PM179	Indicates a software condition occurred. This condition affects the normal operation of the OPAC. PM179 supplies information related to a *PM Hardware Exception Report*.	Refer to the description of PM124 in *Log Report Reference Manual* for specified problems and responses that this log report indicates.
	Features AF5911 and AF5912 add the Talk battery failure detected and Cannot test talk battery, modifications to this log report.	Refer to description of PM179 in *Log Report Reference Manual* for specified problems and responses indicated by this report.
	Example log report LCM talk battery failure detected.	`*** PM179 JUN22 15:47:20 3114 TBL PM HW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 Talk Battery Failure detected on shelf 54 by RSC0 00 1 12 30`
	Example log report Cannot test talk battery.	`* PM179 JUN22 20:17:06 5214 TBL PM HW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 Cannot test Talk Battery on shelf 54 since no WLC provisioned.`
PM180	Indicates the system received a PM exception report that the system did not request from the LCM. Feature AF5890 appends the XLCM real-time overload field to this log report.	Collect all PM180 reports and contact next level of support.
	Example log report LCM enters overload	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM enters overload: DMSX: 5 IUC: 0 SEQ: 0 RT OVLD:medium (4/9,A8)`

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 3-1 OPAC related logs (Sheet 6 of 8)

Log name	Causes	Response
	Example log report LCM overloaded	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM overloaded: DMSX: 45 IUC: 4 SEQ: 3 RT OVLD:medium (2/9,58)`
	Example log report LCM out of overload. The new information includes DMSX and Inter-unit communications (IUC) message lost totals up to 65,535. The peak real-time distress during the overload period and the duration of the overload period in minutes up to 255.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM out of overload: Total DMSX:1234 Total IUC:1230 SEQ: 3 RT OVLD peak: High (2/9,58) Duration: 25 mins`
	Example log report invalid real-time control variables. When the overload period ended, the XLCM detected at least one real-time control variables that did not return to a normal state. The absence of this log indicates the XLCM deactivated all realtime overload protection mechanisms. There are no limits on the capacity of the XLCM.	`** PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 TASKID: 000B TIME: 8081 TEXT: INV RT CTL 5267 0000 4C14 0001 0064 424A2555 7676 839F 5311 52AE 839F 00F6 8399 99D2`
PM181	Indicates the LCM failed a diagnostic test.	This log normally indicates a failure in an automatic test. The user can repeat this failure. This action causes the system to generate a card list. Refer to the description of PM124 in *Log Report Reference Manual* for specified problems and responses that this report indicates.
PM182	Indicates a peripheral side (P-side) DS30A link between the LCM and host interface equipment (HIE) is ManB. Indicates when a P-side link between the RMM and HIE is ManB.	There is no action required.
PM183	Indicates a system request changed an LCM or RMM P-side link to SysB.	An alarm must occur. If an alarm does not occur, test the OPAC. Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 3-1 OPAC related logs (Sheet 7 of 8)

Log name	Causes	Response
PM184	Indicates an LCM or RMM P-side link was RTS.	There is no action required.
PM185	Indicates whe LCM firmware detects an error condition in the hardware, or software that causes a trap-interrupt. The running process stops on the instruction that has the problem.	Save this report and all reports generated during the minute before the the system generated this log. Contact the next level of maintenance.
PM300	Indicates the RMM firmware detected an error in the hardware, or software that causes a trap-interrupt. The running process stops on the instruction that has the problem.	Save this report and all reports generated during the minute before the system generated this report. Contact the next level of maintenance.
PM600	REX fail reasons • InSv tests of active unit 1 after SWACT • InSv tests of inactive unit 0 after SWACT • InSv tests of inactive unit 1 after SWACT • RTS of inactive unit 0 after SWACT • RTS of inactive unit 1 after SWACT • Achieving superframe/data sync of unit 0 after SWACT • Achieving superframe/data sync of unit 1 after SWACT • SWACT to unit 0 refused by SWACT controller • SWACT to unit 1 refused by SWACT controller • SWACT back to unit 0 occurred • SWACT back to unit 1 occurred • Recovery failed—SWACT	PM600 records the maintenance actions performed on the LCM during the failed REX from the start of the REX to the step that failed. This information can be used to pinpoint the source of the REX failure.
Note 1: Refer to *Alarm Clearing Procedures.* ***Note 2:*** Refer to *Card Replacement Procedures.*		

Table 3-1 OPAC related logs (Sheet 8 of 8)

Log name	Causes	Response
	REX fail reasons • InSv tests of active unit 0 after SWACT • InSv tests of inactive unit 1 before SWACT • Warm SWACT • Warm SWACT turned off • PreSWACT audit failure • Autonomous SWACT • OOS tests of inactive unit 0 • OOS tests of inactive unit 1 • RTS of inactive unit 0 • RTS of inactive unit 1 • Achieving superframe/data sync of unit 0 • Achieving superframe/data sync of unit 1 • InSv tests of inactive unit 0 before SWACT	PM600 records the maintenance actions performed on the LCM during the failed REX. This log reports events from the start of the REX to the step that failed. Use this information to pinpoint the source of the REX failure.
PM777	Indicates a faulty card and card location.	Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Logs PM128 and PM181 indicate a traffic overload condition in the OPAC. The system generates the PM128 log with the phrase `LCM Out of Overload` when normal call processing continues.

OPAC cabinet log reports

The log reports associated with the OPAC power and environmental system (PES) are PES100 through 117. The logs record all events that occur on the

outside plant module power and environmental system (OPMPES). The following table describes each of these logs.

Table 3-2 OPMPES related logs (Sheet 1 of 4)

Log name	Causes	Response
PES100	Indicates a change from an OK or closed state to a fail or open state occurred. This change occurred in at least one component of the PES.	The system takes action if high temperature occurs. This table indicates specified actions to take for other events.
	Rectifier 0 or 1 failed from OK.	Repair rectifier or ac.
	Front or rear door open from closed.	Close cabinet door.
	The ac power supply failed from OK.	
	Battery charger controller (BCC) fuse failed from OK.	Replace fuse.
	Modular supervisory panel (MSP) state failed from OK.	Replace fuse/Reset breaker.
PES101	Indicates system did not perform a requested operation because a failure or a higher priority request occurred.	If no response caused failure, check the RMM, LCM, and LTC. The OPMPES cannot communicate. If data mismatch causes failure, check RMM and PES circuits. If failure occurred because operation timed out on message wait, repeat task or replace the battery charger control driver (BCCDVR). Contact maintenance support.
PES102	Indicates a mismatch between the software and the hardware state of the PES.	Perform a busy (BSY) and RTS to update the hardware to the state as stored in software.
PES103	Indicates a change in overall state. The alarm panel display (APD) turns from green to red or amber to red to indicate this change. A serious failure occurred.	Check logs PES100, 101, and 102 for failure reasons.
PES104	Indicates ac power failure if the loadbus test registers a voltage measurement of 47V or less. From the time the log generates, the batteries can provide power for approximately 2 hours. The system generates a PES107 log when the system recovers.	Prepare to lose system. Install emergency generators on-site immediately. The problem clears at the same time the ac failure alarm condition clears.

Table 3-2 OPMPES related logs (Sheet 2 of 4)

Log name	Causes	Response
PES105	Indicates the charge bus test failed.	Replace the defective BCC board immediately. Enter the command string TST CHARGEBUS again. If the test runs correctly, the alarm clears.
PES106	Indicates when a charge bus alarm is previously reported. Indicates when the audit runs a successful charge bus test. This log prints when the user requests the charge bus test at the MAP level.	There is no action required.
PES107	Indicates a change to the OK or closed state from a fail or open state. This change occurs in at least one component of the PES.	There is no action required.
PES108	Indicates a change in overall state by the APD. A red light turns to green, or an amber light turns to OffL to indicate this change.	If a red light turned to green, a major problem cleared. There is no action required. If an amber light turned to OffL, a manual action occurred. This action is necessary when the BATTINFO field of table OPMINV changes or the OPMPES is deleted.
PES109	Indicates a change from the OK state to a SysB state in at least one component of the PES.	Check the RMM state. If BCC, not all battery string pairs are on the loadbus.
PES110	Indicates a change to the ManB state on at least one component of the PES.	There is no action required.
PES111	Indicates a change from the OK state to the OffL state on one or more of the components of the PES.	There is no action required.
PES112	Indicates a change to the OK state on one or more components of the PES.	There is no action required.

Table 3-2 OPMPES related logs (Sheet 3 of 4)

Log name	Causes	Response
PES113	Indicates a change to the fail or warning state from the OK state on one or more components of the PES: • BCC 0 or 1 fuse failed from OK. • ECU display (fan failure) state failed from OK. • BCC 0 or 1 warning from OK.	If a fuse failed, replace the fuse. If a fan failed, investigate and correct reason for the fan failure. A BCC 0 or 1 warning indicates the BCC 0 or 1 strings did not connect to the load bus.
PES114	Indicates a change in overall state by the APD. A green light that turns amber or the OffL light that turns amber indicates this change.	A green light can turn amber. This change indicates a minor alarm, and that a potentially major problem occurred. Ignore if a command to BSY a BCCDVR or PESALRM succeeded. An OffL light can turn amber. This change normally occurs only one time. This change occurs when you first enter and place the OPMPES to ManB. There is no action required.
PES115	Indicates a battery string that is not moved to the charge bus. The voltage of one or both strings fails the test for the minimum voltage required for connection to the charge bus.	Attempt to recharge batteries; if charge does not hold, replace battery string.
PES116	Indicates one of the following conditions: • Enter the MEASURE command at the OPMPES level of the MAP display. • Enter the command string TST CHARGEBUS at the MAP terminal. • Command string MEASURE ALL starts at the start of the battery rotation audit test/charge cycle. • The system detects an error during the measurement of a battery pair at the request of the audit.	There is no action required. There is no action required. There is no action required. Test battery pair; recharge if necessary.

Table 3-2 OPMPES related logs (Sheet 4 of 4)

Log name	Causes	Response
PES117	Indicates a battery string is bad. The pair fails if either string of the pair is bad. The system returns the failed pair to the load bus.	Replace battery string, check voltage, and recharge if necessary.
PM777	Indicates a defective card and card location.	Refer to the *Alarm Clearing Procedures* and the *Card Replacement Procedures*.

ESA log reports

The maintenance log reports the system generates during emergency stand-alone (ESA) operation appear in the following table. The table provides a description of each log, the reason the system generated the log. The log provides the recommended responses.

For a complete description of these logs and detailed response information, refer to *Log Report Reference Manual*.

Table 3-3 ESA related logs (Sheet 1 of 2)

Log name	Causes	Response
ESA101	The ESA subsystem generates this report during the load of remote ESA static data. The maximum number of automatic lines (AUL) supported in ESA for the remote site was exceeded.	To maintain full support in ESA, reconfigure the remote site. To reconfigure the remote site, change entries in customer tables. Make sure the number of non-POTS (plain old telephone service) AUL lines is a maximum or equal to 63 for the OPAC.
ESA102	The ESA subsystem generates this report during the load of remote ESA static data. The subsystem generates a warning message. The message indicates that the maximum number of Meridian Digital Centrex (MDC) customer groups was exceeded. These groups are supported in ESA for the remote site. This event indicates the members of the overflow groups are treated as POTS lines.	To maintain full support in ESA, reconfigure the remote site. To reconfigure the remote site, change entries in customer tables. Make sure the number of non-POTS AUL lines is a maximum of 63 for the OPAC.

Table 3-3 ESA related logs (Sheet 2 of 2)

Log name	Causes	Response
ESA103	The ESA subsystem generates this report during the load of remote ESA static data. The maximum number of ESA prefix translators supported in ESA for the remote site was exceeded.	To maintain full support in ESA, reconfigure the remote site. To reconfigure the remote site, change the entries in customer tables. Make sure the total number of ESA prefix translators for the remote site is a maximum of 272 for the OPAC.
ESA104	The ESA subsystem generates this report during the load of remote ESA static data. The maximum number of MDC extension translators supported in ESA for the remote site was exceeded.	To maintain full support in ESA, reconfigure the remote site. To reconfigure the remote site, change the entries in customer tables. Make sure the total number of MDC translators for the customer groups is a maximum of 256 for the OPAC.
ESA105	The ESA subsystem generates this report during the load of remote ESA static data. The maximum number of directory numbers (DN) supported in ESA for the remote site was exceeded.	To maintain full support in ESA, reconfigure the remote site. To reconfigure the remote site, change entries in line tables. Make sure the number of DNs in the remote site is a maximum of 640 for the OPAC.
ESA106	The ESA subsystem generates this report during the loading of remote ESA static data. The maximum number of hunt groups supported in ESA for the remote site was exceeded.	To maintain full support in ESA, reconfigure the remote site. To reconfigure the remote site, change entries in hunt tables. Make sure the number of hunt groups in the Remote Switching Center (RSC) is a maximum of 26 for the OPAC.
ESA107	The ESA subsystem generates this report during the loading of remote ESA static data. The maximum number of hunt members supported in ESA for the remote site was exceeded.	To maintain full support in ESA, reconfigure the remote site. To reconfigure the remote site, change entries in hunt tables. Make sure the number of lines that belong to hunt groups is a maximum of 520 for the OPAC.
ESA108	The ESA subsystem generates this report during the load of remote ESA static data. The system detected a change in the data. Some ABCD table data is lost and call termination does not occur on the affected lines.	Reload the affected data through the MAP display.

4 Remote Switching Center related logs

Remote Switching Center related logs

Logs monitor the components of the remote switching center (RSC). Some logs can help isolate a problem to a single component. Other logs can help spot link problems. This chapter highlights maintenance activities that result in specified logs.

Note: For information on the use of logs for administrative purposes, refer to *Log Report Reference Manual*.

RSC(E) logs (non-ESA)

The following table lists the peripheral module (PM) log reports associated with the RSC. The table includes example messages, additional message reasons when these reasons apply, and the causes of the log.

Note: Separate sections describe other PM181 logs associated with the throttling of message links and emergency stand-alone (ESA).

Table 4-1 Log reports for the RSC(E) (Sheet 1 of 14)

Log	Causes	Example log/user action
IOAU 112	The SREX controller generates the log if the routine exercise (REx) test: • takes longer than specified • does not run at the scheduled time • cannot start after *n* attempts • scheduler is off or changed	`IOAU112 AUG09 16:35:26 1900 INFO REX SCHEDULER NOTICE LCM 0 has not been REXed for 7 days`

ISDN LINE 131	Generated for 2B1Q loops when the performance exceeds line card performance thresholds.	`LINE131 APR01 16:53:10 6100 INFO Performance Monitoring (PM) Alert`
		`LEN HOST 10 0 08 14`
		`DN 7225227`
		`Report Type PERFORMANCE ALERT`
		`Source QISLC - FE ES CURR Day Threshold of 100 Exceeded ES=101 SES=100`

LINE 145	Loss or gain of signaling between the Integrated Services Digital Network (ISDN) line card and a multipoint node or network termination 1 (NT1) triggers this log. This log specifies the multipoint node number where signaling loss occurred.
	Reports the layer 1 events that follow:
	• loss of synchronization
	• loss of signal with dying gasp
	• loss of signal without dying gasp
	• recovery of signal
		`LINE145 ATPR 01 11:19:15 8200 INFO ISLC Signal Alarm`
		`LEN HOST 10 0 08 15`
		`DN 7335228`
		`Loss of signal with “dying gasp” at NT1: Loop state remains DMB`

Table 4-1 Log reports for the RSC(E) (Sheet 2 of 14)

Log	Causes	Example log/user action

LINE 147	Reports changes in the NT1 test mode of the customer.	`LINE147 APR10 21:25:51 3402`
		`INFO NT1 test mode`
		`indication alarm`
		`LEN HOST 10 0 08 16`
		`DN 7225229`
		`NT1 test mode initiated`

LINE 148	Reports the correction of mismatches in layer 1 thresholds or time-of-day values of 2B1Q line cards.	`LINE148 APR10 00:01:31`
		`4200 Layer 1 BLM`
		`Parameters Refreshed`
		`LEN HOST 10 0 08 17`
		`NO DIRN`
		`Thresholds updated by index`
		`index = 7`
		`ES/Hr=234`
		`SES/HR=186`
		`ES/Day=2567`

LINE 149	Reports configuration changes in multipoint-embedded operations channel (EOC). A message from an enhanced line concentrating module (LCME) that is not solicited triggers log LINE149 when the multipoint audit detects a problem in multipoint data.	`LINE149 OCT07 17:56:52 4407`
		`INFO mp-eoc`
		`configuration change`
		`LEN HOST 10 0 07 18`
		`DN 7225226`
		`mp-eoc configuration`
		`changed 2 to 4 line units`

NAG 400	Reports every hour, under the control of the NAG command. Lists information, on all nodes not in service (InSv). This information includes information on REx results.	The log report determines the required action. Return the node to service or have the node REX enabled. ***Note:*** The LCMs display LCM_REX and LCM ring continuity and converter voltages (LCMCOV_REX) test results. A colon separates the results. A status of N/A indicates the LCMCOV_REX test does not run on that LCM variant. The system executes LCMCOV_REX tests on LCMs, XLCMs, outside plant modules (OPM), and RLCMs.

Table 4-1 Log reports for the RSC(E) (Sheet 3 of 14)

Log	Causes	Example log/user action
PM102	The DMS set the remote cluster controller (RCC) system busy (SysB) from another state, normally in service trouble (ISTb). The system generates this log when the link audit with the central-side (C-side) PM fails. Features AF5329 and AF5672 improve this log report. These features provide more outage information for XLCMs.	PM102 MAY21 22:15:21 2453 SysB RCC 0 Node :SysB From ISTb Unit0 Inact: SysB (Link Audit) Unit1 Act: SysB Link Audit from CBsy
PM105	The BSY command entry occurred from the MAP (maintenance and administration position). The RCC can be tested or placed offline (Offl). If the RCC is already busy, discover the reason that the RCC is busy.	PM105 MAY21 22:15:21 2453 MANB RCC 0 Node :ManB from ISTB Unit0 Inact::ManB Unit1 Act::ManB
	The DMS returned the RCC to service, normally from the ISTb state.	PM106 MAY21 22:15:21 2453 RTS RCC 0 Node :InSv From ISTb Unit0 Inact::InSv Unit1 Act::InSv
PM107	The DMS set the RCC C-side busy. For the RCC, this normally means that both messaging links are busy or that the C-side PM is system busy.	PM107 MAY21 22:15:21 2453 CBSY RCC 0 Node :CBsy Unit0 Inact::CBsy (Link Audit) from CBsy Unit1 Act::CBsy
PM109	Out-of-service (OOS) levels exceeded the level set in table CARRMTC for the OOS limit.	PM109 MAY21 22:15:21 2451 PBSY CARRIER LGC0 CARRIER-NO:3 REASON: CARRIER LOCAL ALARM SET
	Removal of the DS-1 card associated with the link from the RCC to the C-side PM occurred. The RCC is set ISTb.	CARRIER CARD REMOVED
PM110	Bipolar violation (BPV) information exceeded the level set in table CARRMTC for BPV maintenance limit (ML).	PM110 MAY21 22:15:21 2451 INFO CARRIER LGC0 CARRIER-NO:3 REASON: CARRIER BPV MTC LIMIT SET
	The BPV limit dropped below the threshold and cleared.	BPV MTC LIMIT CLEARED

Table 4-1 Log reports for the RSC(E) (Sheet 4 of 14)

Log	Causes	Example log/user action
	The C-side PM detected loss of frame (LOF), which was set in table CARRMTC.	`LOF MTCE LIMIT SET`
	The LOF cleared.	`LOF MTCE LIMIT CLEARED`
	Slips exceeded the slip level, which was set in table CARRMTC.	`SLIP MTCE LIMIT SET`
	The slip level dropped below the threshold.	`SLIP MTCE LIMIT CLEARED`
PM111	The system cleared a local carrier group alarm (LCGA), and the DS-1 links returned to service.	`PM111 MAY21 22:15:21 2451 RTS CARRIER LGC0 CARRIER-NO: 3 REASON: CARRIER LOCAL ALARM CLEARED`
PM117	The RCC failed to return a Who Am I (WAI) message to the central control (CC). This condition occurred after the CC requested that the RCC reset the RCC.	`PM117 MAY21 22:15:21 2451 LGC 0 Unit 1:Act VALUE: 1 NO WAI RECEIVED AFTER RESET`
PM128	The DMS set the RCC ISTb. While the correction of the problem occurs, the RCC continues to process calls.	`PM128 MAY21 22:15:21 2451 TBL ISTb RCC 0 Node :ISTb (Inact OOS) From InSv Unit0 Inact::SysB From InSv Unit1 Act::InSv`
	State of the two units changed because of a REx test failure.	*Action:* Investigate the PM600 log for reasons for the REx failure.
	The REx test passed.	*Action:* There is no action required.
	Diagnostic TESTALL fails.	*Action:* There is no action required.
	The REX warm switch of activity (SWACT) occurred.	*Action:* There is no action required.
	The SWACT controller override occurred, failed, failed with a SWACT back to the originally active unit, or stopped.	*Action:* There is no action required.
	Features AF5329 and AF5672 improve this log report. These features provide more outage information for XLCMs.	*Action:* There is no action required.

Table 4-1 Log reports for the RSC(E) (Sheet 5 of 14)

Log	Causes	Example log/user action
	The NT7X05 is not present.	Entry of the NT7X05 card occurs in the correct inventory table. During a maintenance action that involves the NT7X05, NT7X05 is not found in the correct slot. To correct this fault, follow NT7X05 card replacement procedures. Busy the unit, install the NT7X05 card, and RTS the unit.
	An NT7X05 Fault Detected	The card can function, but card replacement must occur because of the fault detection. To correct this fault, follow NT7X05 card replacement procedures. Busy the unit, install the NT7X05 card, and RTS the unit.
	The Image file on the NT7X05 is not present or not usable.	Set when the XPM unit does not have a usable image file on the NT7X05 card. One of several conditions can cause this problem: • the file can have a fault that a failed checksum indicates. • a load attempt that used the file failed but a load attempt from other files passed • the file can be missing • the file can be present but can be the wrong file. The file is not the correct load as entered in the inventory table To correct this fault, execute a Bsy and RTS of the unit. These actions cause the image dump to take place manually.

Table 4-1 Log reports for the RSC(E) (Sheet 6 of 14)

Log	Causes	Example log/user action
	Loadfile on the NT7X05 is not present or not usable.	Set when one of more of the load files on the NT7X05 card in the XPM unit are not usable. This condition can indicate problems with either the XMS-based peripheral module (XPM) loadfile or the CLASS modem resource (CMR) loadfile. One of several conditions can cause this problem: • the file can have a fault that a failed checksum indicates. • a load attempt that used the file failed but a load attempt from other files passed • the file can be missing • the file can be present but can be the wrong file. This file is not the correct primary file as entered in the PMLOADS table. To correct this fault, enter the command string LOADPM INACTIVE CC NT7X05 to reload the NT7X05 card.
	Image in progress	Set when the XPM unit dumps an image to the NT7X05 card.
PM179	Indicates a software condition occurred that affects the normal operation of the RCC. Log PM179 supplies information related to a PM Hardware Exception Report. Features AF5329 and AF5672 add the contents of the processor board configuration register to the log report.	Refer to description of PM179 in *Log Report Reference Manual* for specified problems and responses.
	Features AF5911 and AF5912 add the Talk battery failure detected and Cannot test talk battery modifications to this log report.	Refer to description of PM179 in *Log Report Reference Manual* for specified problems and responses.
	Example log report LCM talk battery failure detected.	`*** PM179 JUN22 15:47:20 3114 TBL PM HW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 Talk Battery Failure detected on shelf 54 by RSC0 00 1 12 30`

Table 4-1 Log reports for the RSC(E) (Sheet 7 of 14)

Log	Causes	Example log/user action
	Example log report Cannot test talk battery.	`* PM179 JUN22 20:17:06 5214 TBL PM HW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 Cannot test Talk Battery on shelf 54 since no WLC provisioned.`
PM180	Indicates an execution of software that is not correct. Feature AF5890 appends the XLCM real-time overload field to this log report.	Collect all PM180 log reports and contact next level of maintenance support.
	Example log report LCM enters overload.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM enters overload: DMSX: 5 IUC: 0 SEQ: 0 RT OVLD:medium (4/9,A8)`
	Example log report LCM overloaded.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM overloaded: DMSX: 45 IUC: 4 SEQ: 3 RT OVLD:medium (2/9,58)`
	Example log report LCM out of overload. The new information includes DMS-X and Inter-unit communications (IUC) message lost totals a maximum of 65 535. The peak real-time distress during the overload period and the duration of the overload period a maximum of 255 min.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM out of overload: Total DMSX:1234 Total IUC:1230 SEQ: 3 RT OVLD peak: High (2/9,58) Duration: 25 mins`
	Example log report invalid real-time control variables. When the overload period ended, the XLCM found a problem. The XLCM found that one or more real-time control variables of the XLCM did not return to a normal state. Absence of this log indicates to the technician that the XLCM deactivated all real-time overload protection mechanisms of the XLCM. This deactivation allows the XLCM to use full XLCM capacity.	`** PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 TASKID: 000B TIME: 8081 TEXT: INV RT CTL 5267 0000 4C14 0001 0064 424A2555 7676 839F 5311 52AE 839F 00F6 8399 99D2`

Table 4-1 Log reports for the RSC(E) (Sheet 8 of 14)

Log	Causes	Example log/user action
PM181	Indicates when the download of multipoint EOC data to the LCME fails.	`PM181 FEB15 20:13:12 2300 INFO LCME HOST 10 0 Unit 1 Node:InSv, Unit0: InSv, Unit1: InSv Loading of mp-eoc data Loading of mp-eoc data failed`
	A high-level data link control (HDLC) link gained synchronization. A dynamic change can occur to DMS-X protocol to HDLC protocol when the RCC2 is InSv. The system changes the PM state to ISTb until all HDLC links are synchronized to the host. The system sends an unsolicited message to CC for each HDLC link synchronized. The system generates a PM181 log. When all HDLC links between an RCC2 and an LTC+ are synchronized, the ISTb state is cleared.	`PM181 MAY09 14:09:11 6400 INFO RCC2 REM1 0 Unit 0 Node:InSv, Unit0 Act: InSv, Unit1 Inact: ISTb HDLC Cside msg link GAINED sync - link 0`
	An HDLC link lost synchronization. When synchronization of an HDLC link fails during a dynamic DMS-X to HDLC protocol upgrade, the following events occur. The system sends an unsolicited message to the CC. The system generates a PM181 log. If all HDLC message links between an RCC2 and an LTC+ are not synchronized after the dynamic upgrade, the RCC2 works in the DMS-X mode. If the remote was in the ISTb state due to HDLC links synchronization, the ISTb cleared.	`PM181 MAY09 14:09:11 6400 INFO RCC2 REM1 0 Node: ISTb, Unit0 Act: InSv, Unit1 Inact: ISTb HDLC Cside msg link LOST sync - link 2`
	The RCC encountered trouble. This trouble normally occurs during a test run. The PM181 has many messages and is the best report to track during RCC maintenance. For additional information, refer to PM181 logs associated with REx test results.	`PM181 MAY21 22:15:21 2451 ISTb SysB RCC 0 Node :SysB From ISTb Unit0 Inact::Static Data Cleared Unit1 Act: Static Data Cleared`
	Test the peripheral-side (P-side) PM.	`Diagnose C-side links`
	Run the TEST command at a later time.	`Diagnostic system in overload.`

Table 4-1 Log reports for the RSC(E) (Sheet 9 of 14)

Log	Causes	Example log/user action
	The TEST command succeeded.	`Diagnostic TESTALL passes`
	The TEST command did not succeed. The system generated a list of cards. The system generates this log during troubleshooting procedures.	`Diagnostic TESTALL failed, Cardlist:`
	Run the TST command at a later time.	`Diagnostic resource was unavailable`
	Static data was not available. Busy the RCC unit and load the unit with the CC static data.	`Diagnostic TESTALL failed, Invalid Static Data`
	Check the C-side PM.	`Failed to open C-side link`
	The DS-1 link throttles messages. Refer to PM181—Throttling faults on the messaging DS-1 links in this chapter.	`Operational Fault: C-side Message`
	The load has faults, or a CHECKSUM failed.	`Software error in diagnostic TESTALL`
	The RCC reloaded static data.	`Static Data Update`
	In this log output, an x digital subscriber line (xDSL) line card (xLC) was added to table LNINV. The drawer for the table does not support the high speed data traffic of the 1-Meg Modem Service (1MMS). The line installed functions as a standard voice line only.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 PHYSICAL DRWR 0 DOES NOT SUPPORT xDSL DATA TRAFFIC` No action required.

Table 4-1 Log reports for the RSC(E) (Sheet 10 of 14)

Log	Causes	Example log/user action
	In this log output, an xLC was added to table LNINV. The drawer for the table supports the high speed data traffic of the 1MMS. The line drawer contains more xLCs than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 MAXIMUM NO (30) OF xDSL LINES PER PHYSICAL DRWR EXCEEDED MEMBERS PER PHYSICAL DRWR EXCEEDED` The whole line drawer is at risk of failure because the drawer is operating beyond its thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL and has room for expansion • upgrade another LCM line drawer with a data-enhanced bus interface card (DBIC) and move this xDSL line card to that drawer • enter the CI level QXNET VERIFY command to verify the xDSL line card assignments

Table 4-1 Log reports for the RSC(E) (Sheet 11 of 14)

Log	Causes	Example log/user action
	In this log output, an xLC was added to table LNINV. The drawer contains more xLCs in a vertical row than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 MAXIMUM NO OF xDSL LINES PER VERT ROW EXCEEDED MAX MEMBERS (2) of xDSL LINES PER VERT ROW EXCEEDED` The whole line drawer can fail because the drawer is operating beyond the thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPAND command to locate another row in the same drawer for the xDSL line card • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL
PM185	Error condition that firmware, hardware, or software detects causes a trap interrupt.	Refer to Parity error log reports in the Maintenance overview section of the RSC manual for an example of a PM185 log report.
PM189	Parity audit failure	`PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT RCC2 0 Unit 0:Act TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF NILCID TEXT:softdat 00 00 57 F6 00 00 not in code`
PM600	The PM600 records maintenance performed on the RCC during the failed REx from the start of the REx to the failed step. This information can help identify the source of the REx failure.	Refer to PM600 REX failed log report in this chapter for an example of a PM600 log report.

Table 4-1 Log reports for the RSC(E) (Sheet 12 of 14)

Log	Causes	Example log/user action
	REX fail reasons: • Warm SWACT • Warm SWACT turned off • Pre-SwAct audit failure • Autonomous SWACT • OOS tests of inactive unit 0 • OOS tests of inactive unit 1 • Return to service (RTS) of inactive unit 0 • RTS of inactive unit 1 • Achieving superframe/data sync of unit 0 • Achieving superframe/data sync of unit 1 • InSv tests of inactive unit 0 before SWACT • InSv test of inactive unit 1 before SWACT • InSv tests of active unit 0 after SWACT • InSv test of active unit 1 after SWACT • InSv tests of inactive unit 0 after SWACT • InSv tests of inactive unit 1 after SWACT • RTS of inactive unit 0 after SWACT • RTS of inactive unit 1 after SWACT • Achieves superframe/data sync of unit 0 after SWACT • Achieves superframe/data sync of unit 1 after SWACT • SWACT controller refuses SWACT to unit 0	

Table 4-1 Log reports for the RSC(E) (Sheet 13 of 14)

Log	Causes	Example log/user action
	• SWACT controller refuses SWACT unit 1 • SWACT back to unit 1 occurred • SWACT back to unit 0 occurred • Recovery failed—SWACT	
PM601	Generated when one of the following events occur: • operating company personnel reset long term failure counters to zero for an RCC posted at the MAP terminal • deletion of an RCC from datafill	Refer to PM601 PM diagnostics history log in this chapter for an example of a PM600 log report. *Action:* This log is an information log. You must keep this log in a form that you can pass on for analysis. The Technical Assistance Service (TAS) and field support organizations use this log if an outage occurs at a later time.

PM620	The system generates PM620 to report the following synchronization events:
	• reference link switching
	• reference links pair switching from P-side reference pair links to C-side reference pair links and the reverse.
	• mode changes
	• active reference link condition change
		`PM620 JUL09 12:12:12 2800`
		`INFO PM Sync Information`
		`Report`
		`RCC2 REM1 0 Unit 0:Act`
		`PRIM:Act,ok From Stby,Vldng`
		`SCND:Stby,Dsbld From Stby,Dsbld`
		
		`PM620 JUL09 12:12:12 2800`
		`INFO PM Sync Information`
		`Report`
		`RCC2 REM1 0 Unit 0:Act`
		`Sync-Status: Ntwk,Acquisition`
		`From BITS,Holdover`
		
		`PM620 JUL09 12:12:12 2800`
		`INFO PM Sync Information`
		`Report`
		`RCC2 REM1 0 Unit 0:Act`
		`Sync-status: Ntwk,Holdover`
		`From: BITS,Acquisition`
		`PRIM: Act,Dsbld From Stby,Dsbld`
		`SCND: Stby,Dsbld From Stby,Dsbld`

Table 4-1 Log reports for the RSC(E) (Sheet 14 of 14)

Log	Causes	Example log/user action
PRFM200	The performance subsystem generates this log to represent activity data for the RCC2 peripheral.	An example of the PRFM200 log follows. For the NTMX73AA and NTMX76AA cards, the summary line contains the average time for the last 15 min. If the perform tool runs for less than 15 min, the time provided is the time requested. In this example the summary fields do not contain values.

```
PRFM 200 JAN10 04:39:50 2044 INFO PMACT_DATA
RCC2 0 UNIT 1
Load name: CRI02BY

  UPHP  UPCP  UPLP  ISPHP  ISPCP  ISPLP  SIGP  MX76  ORIG  TERM  UTR CHNL
1.  19%  38%    9%     0%    16%    0%     9%    22%   105  110   1   82
2.  19%  38%    8%     0%    15%    0%     9%    22%   102   98   1   81
..
..
..

Summary

Summary   UTRAVAIL XX   UTRHIGH  XX    PSIDEAVAIL  XXX   PSIDEHIGH  XX
```

PM777	The message and tone card is defective. This fault impairs or interrupts messaging between the RCC and the CC.	`PM777 JAN04 17:44:56 2709 INFO`
		`H/W FAULT RCC 0 UNIT NO:  00`
		`Error State:  6X69 Insane`
		`Suspected card(s):`
		`Site Flr RPos  Bay_id   Shf`
		`HOST 00 A00    RCE 00   65`
		`Description   Slot   EqPEC`
		`RCC  :  00     18     6X69`
		`Data:  00  02  42 FA 00 1A`

Expanded use of PM180 (PM777)

Previous PM180 logs contained information on software error states that hardware errors caused. A new log, PM777, contains this information now. The PM777 log helps the technician to more easily locate and correct hardware errors. The log identifies suspected cards that can cause a hardware error.

The use of the PM777 log occurs with the feature, Log Retrieve Facility for E1 Incidents. This feature allows the journaling of all logs to a storage device for later retrieval and analysis. Refer to the Log reports for the RSC table for sample log content.

The following limits apply to log PM777:

- The system analyzes only the most critical software modules for generation of the new log.
- The system does not analyze software-related PM180 logs for states that affect service.

PM181—Activity Dropped

The following messages indicate that the active unit dropped activity. The CC immediately performs a warm SWACT. This SWACT makes sure that the dropped activity does not affect call processing. The unit goes SysB for some messages and ISTb for other messages.

- `parity audit detected hard parity fault`

  If the defective unit is inactive, the RCC sets the unit SysB. If the defective unit is active, the CC performs a warm SWACT and sets the newly inactive unit SysB. If the defective unit is active and a warm SWACT is not available, the CC sets the unit ISTb. A card list appears with the log.

- `parity audit detects soft parity fault in program store (or data store)`

  If the defective unit is inactive, the RCC sets the unit SysB. If the defective unit is active, the CC performs a warm SWACT and sets the newly inactive unit SysB. If a warm SWACT is not available, the CC sets the unit ISTb. If the unit is already busy, the system reloads the unit. For data store the CC returns the unit to service with new static data and full diagnostics. The CC performs this action if the defective unit is already busy,

- `parity audit detected intermittent parity fault`

  If the defective unit is inactive, the CC busies the unit and returns the unit to service with full diagnostics. If the defective unit is active and the inactive unit is in service, the following events occur. The CC performs a warm SWACT. The CC returns the newly inactive unit to service with full diagnostics. If the defective unit is active and the inactive unit is not in service, the CC sets the active unit ISTb. The inactive unit returns to service in the following condition. The parity audit does not detect an intermittent fault in 2 min after the report of the fault occurs.

- `activity time-out`
- `sanity time-out`
- `trap`
- `request`
- `duplicate fault`
- `jammed`
- `data corruption`

- static data corruption
- pre-SwAct audit failure
- undefined drop reason.

PM181—Throttling faults on the DS-1 messaging links

The DS-1 messaging links that connect the RCC to the host line trunk controller (LTC) or line group controller (LGC) can have operational faults. Operational faults reported on these links are throttled. The system generates a PM181 log to indicate that an operational fault occurred on an RCC messaging link.

The system throttles operational faults so a single fault on a DS-1 messaging link does not take the RCC out of service. When an operational fault on an RCC messaging link occurs, the RCC increases the correct message error counter. The RCC sends a message to the CC. This message contains all message error counts. The CC takes the information and formats the information to a PM181 log. The system opens the link. The system does not open the link if many faults occur during a short period of time.

The PM181 log specifies if the latest fault occurred at the LTC P-side or the RCC C-side. The log gives the current message error counts. If the fault occurred on the C-side, the C-side message error counters appear. If the fault occurred on the P-side, the P-side message error counters appear. The system does not keep the counters for each link. The counts are the total for all links on the indicated side. The system clears message counts when the peripheral returns to service. A comparison of two logs determines the last message error.

When the system throttles operational faults on RCC DS-1 message links, the system affects these faults. This condition does not affect other types of peripherals. An example of the PM181 log follows.

Example log:

```
0PM181 MAY15 14:15:42 2530 INFO RCC 60
Node: ISTb, Unit0 Inact: ISTb, Unit1 Act: InSv
LINK NO: 2, OPERATIONAL FAULT: C_SIDE_MSG
MISTO: 0 WAMTO: 3 WASTO: 0 WACKTO: 0 WANRTO: 3
WANXTO: 0 MSFLEN: 0 BADCRC: 0
 NACK2: NACK1: 0 NACKX: 3 RBNDMG: 3 FLSMIS: 0
 BCKDWN: 16 BACKPR: 0 BUFOVF:0
```

The following table explains each field in the PM181 log report:

Table 4-2 Fields of the PM181 log associated with message throttling

Field	Explanation
BACKPR	Back pressure time-out. Free receiver buffers are not present.
BADCRC	Cyclic redundancy code is not correct.
BCKDWN	A slave process waits for a SEND to transmit a message. The slave process receives a may I send (MIS) from the master process.
BUFOVF	Buffer overflow. Buffers are not available.
FLSMIS	False MIS. Only one MIS appears on the link. There must be a minimum of two MISs on the link to be valid.
MISTO	MIS time-out message
MSGLEN	Message length error that occurs with the reception of a message length that is not correct.
NACK1	Reception of a negative acknowledgement (NACK) occurs after transmission of a message.
NACK2	Reception of a second NACK occurs after transmission of a message.
NACKX	A NACK transmission occurs after the reception of a corrupted message.
RBNDMSG	A message rebounded (error).
WACKTO	Wait for acknowledgement time-out error. There is no positive acknowledgement (PACK) or NACK reception after the transmission of a message.
WANRTO	Wait for idle after acknowledgement of a message time-out error. There is no idle reception after a message acknowledgement with a PACK or NACK.
WANXTO	Wait for idle after packing a NACK time-out error. There is no PACK or NACK reception after an acknowledgement of the reception of a NACK.
WASTO	Wait for send time-out error. Filtered SEND reception may not occur after transmission of an MIS.

RCC overload logs (PM128)

When the RCC enters overload, the system generates a PM128 (RCC is ISTb) with the following message:

```
PM Overloaded
```

At the PM level of the MAP terminal, the same message (PM Overloaded) can appear. This message appears when the user posts the RCC and enters the QUERYPM FLT command.

Note: The system generated the EXT104 through EXT108 logs when ESP was turned on or off. The system does not continue to generate these logs. The system also removes the tuple ESP_ALARM from table SFWALARM.

When the system generates a PM128 log, the technician must collect all associated operational measurements (OM) immediately. These OMs include the OMs that track the amount and types of traffic from the RCC. In some conditions, the RCC enters overload because of maintenance problems, like network faults. In other conditions, the reasons can relate to under engineering of the RCC configuration. The technician must forward the OM reports to both maintenance and engineering personnel for analysis.

PM128—Static data mismatch

The RCC and CC have different sets of static data. This condition affects call processing. When static data mismatch occurs, the system generates the following log message:

```
Static Data mismatch with CC
```

When a static data mismatch occurs, the user must clear the alarm. To clear the alarm, use the NODATASYNC option to RTS the inactive unit. Perform a SWACT.

The PM128 log tells the technician how to correct the static data mismatch. Refer to the Trouble isolation and correction chapter in this Northern Telecom publication (NTP) for more information on the static data mismatch message improvement.

If change occurs on subscriber line data when the RSC is in ESA, the system continues to perform a warm ESA exit. When the RCC returns to service, the RCC state is ISTb. A SWACT performance clears the fault because the inactive unit of the RCC goes through a full return to service (RTS) sequence. The inactive unit with the correct static data takes over call processing. The newly inactive unit undergoes a full RTS sequence to receive the correct static data.

Note: ESA warm entry or warm exit applies only to the single or dual RCC (DRCC) in a configuration that is not ISDN.

PM181, PM128—Parity error logs

This section deals with a number of subjects. These subjects include:

- maintenance examples of the logs generated by a parity audit
- response to the QUERYPM FLT command
- a summary of how to locate and clear faults

PM181—Hard Parity Fault—Both units InSv

The following is an example of a report.

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node: ISTb, Unit 0 Act: InSv, Unit 1, Inact: InSv
Parity audit detected hard parity fault
Site Flr  RPos Bay_id  Shf Description Slot EqPEC
RCCR  00  CO5  CE 00  18  RCC  : 000 10   6X47
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the inactive unit OOS.

  ```
  PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
  Node: ISTb, (Inact OOS) From InSv
  Unit 0 Inact:SysB (Parity errors detected) from InSv
  Unit 1  Act:InSv
  ```

- PM189—The inactive unit of the RCC has a hard fault.

  ```
  PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
  RCC 0 Unit 0: Inact
  TASKID:00370037 PARAUDT, TIME: 22:29:16.68 COMID: FF
     NILCID
  TEXT:hard_flt 00 00 57 F6 00 00
  ```

- **QUERYPM FLT** command

  ```
  (System busy reason): hard parity fault was detected.
  ```

Explanation: System busy indicates that the system removed the inactive unit from service and the unit cannot process calls. When both units are InSv the system can perform one of the following:

- remove the inactive unit from service.
- perform a SWACT on the active unit and removed the unit from service.

CC action: The CC sets the inactive unit to SysB. If the defective unit is the active unit, the CC performs a warm SWACT. The CC busies the new inactive unit.

User action: The technician replaces the card that appears in the PM181 log because this fault is a hard fault,. The technician manually busies the inactive unit (BSY UNIT *n*). The technician tests the ROM to make sure that the technician replaces the correct card (TST UNIT *n* ROM). After the card replacement occurs, the technician reloads the PM (LOADPM UNIT *n* CC DATA). Then the technician RTSes the PM (RTS UNIT *n*). The unit returns to service.

PM181—Hard Parity Fault—Inactive unit already SysB

An example report follows:

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node: ISTb, Unit 0 Act: InSv, Unit 1, Inact: OOS
Parity audit detected hard parity fault
Site Flr  RPos  Bay_id  Shf Description Slot  EqPEC
RCCR  00  C05  RCC 00  18  RCC : 000   10  6X47
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the active unit as ISTb from InSv.

  ```
  PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
  Node: ISTb, (Inact OOS) From InSv
  Unit 0 Act:ISTb (Parity errors detected) from InSv
  Unit 1 Inact:OOS
  ```

- PM189—The active unit of the RCC has a hard fault.

  ```
  PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
  RCC 0 Unit 0:Act
  TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
     NILCID
  TEXT:hard_flt 00 00 57 F6 00 00
  ```

- **QUERYPM FLT** command

  ```
  The following inservice troubles exist:
  Hard parity fault was detected in XX memory'
  ```

  (where: *XX* = the 46 or 47 memory card)

Explanation: The inactive unit is not InSv or a warm SWACT is not available. The CC cannot take the defective unit out of service. If the CC takes the unit out of service, RCC becomes busy and cannot process calls.

System action: The CC sets the active unit to ISTb.

User action: Follow the same procedure used when both units are InSv. When the the system busies the unit, the system drops all call processing. To avoid this condition, try to cause the inactive unit to process calls. Return the inactive unit to service or make sure a warm SWACT is available if the inactive unit is InSv.

PM181—Soft Parity Fault in program store—both units InSv

An example report follows:

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node: ISTb, Unit 0 Act:InSv, Unit 1, Inact:InSv
Parity audit detected soft parity fault in program store
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the inactive unit OOS.

  ```
  PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
  Node:ISTb, (Inact OOS) From InSv
  Unit 0 Inact:SysB (Parity errors detected) from InSv
  Unit 1  Act:InSv
  ```

- PM189—The inactive unit of the RCC has a fault in program store.

  ```
  PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
  RCC 0 Unit 0:Inact
  TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
     NILCID
  TEXT:softpgm 00 00 57 F6 00 00
  ```

- **QUERYPM FLT** command

  ```
  System busy reason: soft parity fault was detected in ps of
  XX memory
  ```

(where: *XX* = the 46 or 47 memory card)

Explanation: System busy indicates that one of the following two events occurred:

- the CC removed the inactive unit from service.
- the CC performed a warm SWACT on the RCC and removed the new inactive unit out of service.

System action: The CC sets the inactive unit as SysB. If the active unit is defective, the CC performs a warm SWACT and busies the new inactive unit. At this point, the CC tries to recover the busy unit without manual interruption. The CC initiates autoloading. The correct loads must be in tables PMLOADS and LTCINV. The CC loads the whole load and returns the unit to service.

User action: The CC returns the unit to service. This process does not normally require manual interruption. The process requires manual interruption if the RCC does not return to service. In this condition, check the load tables and other problem indicators to identify the problem.

PM181—Soft Parity Fault in program store—Inactive unit is already out of service

An example report follows:

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node:ISTb, Unit 0 Act:InSv, Unit 1, Inact: OOS
Parity audit detected soft parity fault in program store
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the inactive unit already OOS.

  ```
  PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
  Node:ISTb, (Inact OOS) From InSv
  Unit 0 Inact:ISTb (Parity errors detected) from InSv
  Unit 1   Act:Manb
  ```

- PM189—The active unit of the RCC has a fault in program store.

  ```
  PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
  RCC 0 Unit 0:Act
  TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
     NILCID
  TEXT:softpgm 00 00 57 F6 00 00
  ```

- **QUERYPM FLT** command

  ```
  The following inservice troubles exist:
  Soft parity fault was detected in ds of XX memory
  ```

(where: *XX* = the 46 or 47 memory card)

Explanation: The inactive unit is not in service or a warm SWACT is not available. The CC cannot take the defective unit out of service. If the CC unit takes the out of service, the RCC becomes busy and cannot process calls.

System action: The CC sets the active unit as ISTb.

User action: The system drops all calls when the system busies the unit. This condition occurs because the inactive unit is OOS and cannot take over call processing. To avoid this condition, try to cause the inactive unit to process calls. Return the inactive unit to service. Make sure a warm SWACT is available if the inactive is InSv. The user also can busy the active unit, load the unit with the complete load, and RTS the unit.

PM181—Soft Parity Fault in data store—Both units InSv

An example report follows:

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node:ISTb, Unit 0 Act:InSv, Unit 1, Inact: InSv
Parity audit detected soft parity fault in data store
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the inactive unit as SysB.

```
PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
Node:ISTb, (Inact OOS) From InSv
Unit 0 Inact:SysB (Parity errors detected) from InSv
Unit 1   Act:InSv
```

- PM189—The inactive unit of the RCC has a fault in program store.

```
PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
RCC 0 Unit 0:Inact
TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
   NILCID
TEXT:softdat 00 00 57 F6 00 00
```

- **QUERYPM FLT** command

```
System busy reason: soft parity fault was detected in ds of
XX memory
```

(where: *XX* = the 46 or 47 memory card)

Explanation: System busy indicates one of the following events occurred:

- the CC removed the inactive unit from service
- the CC performed a warm SWACT on the RCC and removed the newly inactive unit from service.

System action: The CC sets the inactive unit as SysB. If the active unit was defective, the CC performs a warm SWACT and busies the new inactive unit. At this point, the CC tries to recover the busy unit without manual interruption. The CC returns the unit to service. The CC makes sure that the system downloads the new static data and runs full diagnostics.

User action: The CC returns the unit to service. This process only requires manual interruption if the RCC does not return to service. When this condition occurs, check for other problem indicators to identify the problem.

PM181—Soft Parity Fault in data store—Inactive unit already out of service

An example report follows:

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node:ISTb, Unit 0 Act:InSv, Unit 1, Inact: SysB
Parity audit detected soft parity fault in data store
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the active unit set at ISTb.

```
PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
Node:ISTb, (Inact OOS) From InSv
Unit 0 Inact:SysB (Parity errors detected) from InSv
Unit 1   Act:ISTb
```

- PM189—The active unit of the RCC has a fault in program store.

```
PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
RCC 0 Unit 0:Act
TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
   NILCID
TEXT:softdat 00 00 57 F6 00 00
```

- **QUERYPM FLT** command

```
The following inservice troubles exist:
Soft parity fault was detected in ds of XX memory
```

(where: *XX* = the 46 or 47 memory card)

Explanation: The inactive unit is not in service or a warm SWACT is not available. The CC cannot take the defective unit out of service. If the unit is out of service, the RCC becomes busy and cannot process calls.

System action: The CC sets the active unit as ISTb.

User action: The system drops all calls when the system busies the unit. This event occurs because the inactive unit is OOS and cannot take over call processing. To avoid this condition, try to cause the inactive unit to process calls. Return the inactive unit to service or make sure a warm SWACT is available if the inactive unit is InSv. The user also can busy the active unit, and RTS the defective unit. The system sends the static data as part of the RTS.

PM181—Intermittent parity fault—Both units InSv

An example report follows:

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node:ISTb, Unit 0 Act:InSv, Unit 1, Inact: SysB
Parity audit detected intermittent parity fault
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the inactive unit OOS.

```
PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
Node:ISTb, (Inact OOS) From InSv
Unit 0 Inact:SysB (Parity errors detected) from InSv
Unit 1   Act:InSv
```

- PM189—The inactive unit of the RCC has an intermittent parity fault.

```
PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
RCC 0 Unit 0 : Inact
TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
   NILCID
TEXT:intflt 00 00 57 F6 00 00
```

- **QUERYPM FLT**

```
(System busy reason): intermittent parity fault was detected
in ps (or ds) of XX memory.
```

(where: *XX* = the 46 or 47 memory card)

Explanation: System busy indicates that one of the following events occurred:

- the CC removed the inactive unit from service
- the CC performed a warm SWACT on the RCC and removed the new inactive unit from service.

System action: The CC sets the inactive unit to SysB. If the active unit is defective, the CC performs a warm SWACT and busies the new inactive unit. The CC tries to recover the busy unit without manual interruption. The CC returns the unit to service and makes sure that the system runs full diagnostics.

User action: The CC returns the unit to service. This process only requires manual interruption if the RCC does not return to service. When this condition occurs, check for other problem indicators to identify the problem.

PM181—Intermittent parity fault—Inactive is already OOS

An example report follows:

```
PM181 JUL23 23:29:16 5561 INFO RCC 0 Unit 0
Node:ISTb, Unit 0 Act:InSv, Unit 1, Inact: OOS
Parity audit detected intermittent parity fault
```

Other problem indicators

Other problem indicators follow:

- PM128—The RCC is set ISTb, with the active unit as ISTb.

```
PM128 JUL23 23:29:16 5561 TBL  ISTb RCC 0
Node:ISTb, (Inact OOS) From InSv
Unit 0   Act:ISTb (Parity errors detected) from InSv
Unit 1 Inact:SysB
```

- PM189—The active unit of the RCC has an intermittent parity fault.

```
PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
RCC 0 Unit 0:Act
TASKID:00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
   NILCID
TEXT:intflt 00 00 57 F6 00 00
```

- **QUERYPM FLT** command

```
The following inservice troubles exist:
Intermittent parity fault was detected in XX memory
```

(*XX* = 46 or 47 card)

Explanation: Inservice indicates that the CC set the active unit as ISTb. This event occurs because the inactive unit is already OOS or because a warm SWACT is not available.

System action: The CC sets the active unit as ISTb. The CC cannot perform a recovery action. If the audit runs twice and does not find a parity audit, the CC returns the active unit to InSv. The audit takes approximately 2 min to run twice.

User action: The system drops all calls when the system busies the inactive unit. This event occurs because the inactive unit is OOS and cannot take over call processing. To avoid this condition, try to cause the inactive unit to process calls. Return the inactive unit to service or make sure a warm SWACT is available if the inactive unit is InSv. The user also can busy the active unit, and RTS the defective unit. The system sends the static data as part of the RTS.

PM600 REX failed log report

The system generates the PM600 log when an XPM REx test fails. The PM600 provides a record of the steps that occur during the REx from start to the test that failed. These recorded steps include recovery actions that REx can

initiate. This log helps to determine the cause of the XPM REx failure. An example of the PM600 log report follows.

```
  ** PM600 JUN08 01:28 8600 TBL REX FAILED XPM 0
Node:ISTb, Unit 0 Act:InSv, Unit 1 Inact:SysB (Diag Failed)

REX Step  Unit Start Time Failure Reason
Tst Inact   0  09:17:33
Bsy Inact   0  09:17:47
RTS Inact   0  09:18:15
Sync Inact  0  09:21:43
Pre-SwAct   0  09:21:51
Warm SwAct  -  09:22:37
Bsy Inact   1  09:22:40
RTS Inact   1  09:23:08
Sync Inact  1  09:25:27
Tst Act     0  09:22:50  REX test failed—InSv tests of active
                                          Unit 0 after Swact
Warm SwAct  -  09:25:28
Bsy Inact   0  09:25:29
Finished    -  01:28:25
Supplemental Data
Diagnostic Failures: UTRDIAG
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 01 L15  LTE 00 65  LTC : 000  15   6X92
```

PM601 PM diagnostics history log

The system generates the PM601 log when operating company personnel reset long term failure counters to zero for an XPM. This XPM is posted at the MAP display. The system also generates the PM601 when deletion of an XPM from datafill occurs. The PM601 provides a summary of the history of diagnostic failures collected between the earlier reset time and now. The user must keep this log for analysis in the event of a later outage. An example of a PM601 log follows:

```
PM601 AUG20 09:44:15 2741 INFO XPM Diagnostic History
RCC 1
Reset Long Term Failure (LTF) counts
LTF last reset: 92/07/01  06:22:10
Summary of LTF counts prior to reset:
                           UNIT 0      UNIT 1
DIAGLIST
             AB DIAG         1             1
             SPCH DG         0             1
           ---------------------------------
   CARDLIST
             NT6X44          1             1
             NT6X41          0             1
             NT6X69          0             2
```

LCM logs

The PM181 and PM132 logs show the results of the bus interface card (BIC) relay test (BRT). These results appear in the table below.

Note: The BRT applies only to LCMs that are not ISDN.

Table 4-3 Log reports for the LCM BIC Relay Test

Log	Causes	Example
PM132	The system generates this log when a system-scheduled BRT completes on a given LCM. The report summarizes each drawer in the LCM.	`PM132 OCT04 17:21:50 0100 INFO BIC RELAY TEST LCM Host 00 0 Node:ISTb, Unit0: InSv, Unit1:InSv (summary of each drawer)`
PM181	This log gives the results of the BRT. Possible results are passed, failed or did not run because of equipment access problems.	`PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1 Unit 0 Node: ISTb, Unit0:InSv,Unit1: InSv Diag Failed: BIC REVERSAL Relay NT6X54 1`

PM132 log format for BRT

The log report format for PM132 follows:

```
PM132 mmmdd hh:mm ssdd INFO
pmid opttxt drwtxt
```

Field opttxt gives information on the LCM node state. Field drwrtxt indicates the test results of each drawer. Field ranges follow:

- Passed
- Failed: REVERSAL Relay Test
- Not Run: Line Card not available
- Not Run: metallic test equipment (MTE) not available
- Not Run: Test was aborted
- Not Run: Invalid drawer state or not datafilled
- Not Run: Line(s) in call processing busy (CPB) state
- Not Run: No response from hardware
- Not Run: No route available to LCM
- Not Run: No resources available
- Not Run: Invalid load

- Not Run: Unexpected error condition
- Not Run: Failed to submit

Example log

```
PM132 OCT04 17:21:50 0100 INFO  BIC RELAY TEST
LCM Host 00 0  Node: ISTb, Unit0: InSv, Unit1: InSv
Drawer 0  : Passed
Drawer 1  : Passed
Drawer 2  : Passed
Drawer 3  : Passed
Drawer 4  : Passed
Drawer 5  : Passed
Drawer 6  : Passed
Drawer 7  : Failed: REVERSAL Relay Test
Drawer 8  : Passed
Drawer 9  : Failed: REVERSAL Relay Test
Drawer 10 : Passed
Drawer 11 : Passed
Drawer 12 : Passed
Drawer 13 : Passed
Drawer 14 : Not Run: Line card not available
Drawer 15 : Passed
Drawer 16 : Passed
Drawer 17 : Passed
Drawer 18 : Passed
Drawer 19 : Passed
```

Explanation: The system generates this log when a system BRT completes on a given LCM. The report summarizes each drawer in the LCM.

User action: If a failure occurs, replace the BIC card and retest on a single drawer level. If the test did not run on a given drawer, one of the following events occurred:

- the drawer did not have an NT6X17 in the drawer with which to test
- the drawer cannot seize the MTE because of the expiration of the MTE during testing
- the test aborted
- the drawer had lines in a call processor busy state

If necessary, enter the NT6X17 in the drawer or diagnose and fix the MTE. If the test aborted or calls were in progress, retest the draw later.

PM181 log format for BRT

The PM181 log format follows:

```
PM181 mmmdd hh:mm ssdd INFO
pmid opttxt
```

Logs for single-drawer BRT

The system generates the following PM181 when a manual BRT occurred on a single drawer.

Log message 1:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1  Unit 0
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Passed: BIC RELAY TESTS  NT6X54 1
```

Explanation: All tests passed

Action: There is no action required.

Log message 2:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1  Unit 0
  Node: ISTb, Unit0 : InSv, Unit1 : InSv
  Diag Failed: BIC REVERSAL Relay  NT6X54 1
```

Explanation: The tip/ring reversal relay test failed diagnostics.

Action: Replace and retest BIC from the LCM MAP level.

Log message 3:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1  Unit 0
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS   NT6X54 1
        Line card not available
```

Explanation: The BRT did not run because a line card was not available.

Action: Make sure that a datafilled NT6X17 line card is present in the line drawer and that the card passes diagnostics. Retest the BIC from the LCM MAP level.

Log message 4:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1  Unit 0
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS  NT6X54 1
        MTE not available
```

Explanation: The BRT test did not run because the MTE was not available to perform necessary measurements.

Action: Check the MTE for a possible error condition.

Log message 5:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1 Unit 0
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS   NT6X54 1
         Test was aborted
```

Explanation: An entry of **>BICRELAY OFF** at the command interpreter (CI) MAP level caused the test to abort.

Action: There is no action required.

Log message 6:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1  Unit 0
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS    NT6X54 1
         Unexpected error condition
```

Explanation: The test encountered a software error condition that was not expected.

Action: Run software diagnostics to correct software errors. Check software error reports (SWERR) for problem indicators.

Logs for LCM BRT

The system generates the following PM181 when the system performs a BRT on a complete LCM.

Log message 1:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS LCM NODE
         MTE not available to node
```

Explanation: An attempt to seize the MTE for a given LCM failed.

Action: Check the MTE for a possible error or busy condition.

Log message 2:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1
  Node: InSv, Unit : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS LCM NODE
         No resources available
```

Explanation: An attempt to obtain an extension block failed.

Action: Run the BRT again or call the next level of support if the condition continues.

Log message 3:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS LCM NODE
         Test was aborted
```

Explanation: The system aborted the BRT

Action: There is no action required.

Log message 4:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1  Unit 0
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS LCM NODE
         Unexpected error condition
```

Explanation: The test encountered a software error condition that was not expected.

Action: Attempt a manual BRT, start over, or wait for the next scheduled BRT cycle. Check SWERRs for trouble indicators.

Log message 5:

```
PM181 JAN01 10:34:06 8200 INFO LCM HOST 00 1
  Node: InSv, Unit0 : InSv, Unit1 : InSv
  Diag Not Run: BIC RELAY TESTS LCM NODE
         Failed to submit:(reason)
```

Explanation: A failure to submit the test to maintenance occurred, where *(reason)* can be one of the following:

- Accepted, %% waiting to be processed
- Aborted, %% aborted by system
- No Resources, %% no s/w resources available
- Failed, %% simply failed to submit
- Parms Invalid, %% invalid parameters passed in
- Mtce In Progress, %% mtce already in progress on node
- Mtce System Initializing, %% system initializing

Action: Check the reason code and take correct actions.

ESA logs (ESA101 through ESA109, PM181, PM171)

ESA101 through ESA109

The system generates ESA logs when the ESA download from the CC exceeds the RCC allocation for ESA static data. These logs and the exceeded entries appear in the following table.

Table 4-4 ESA logs for download warnings

Log	Table	Type entry	Max. entry
	Terminal Data	1 per terminal	5760
ESA101	Automatic Line	1 per AUL line	256
ESA102	Customer Group	1 per group	288
	Prefix Header	1 per customer group	288
ESA103	Prefix	1 per ESA prefix translator	
		POTS	16
		customer group	8
ESA110	ESAHNPA	1 per customer group	
		POTS	32
		customer group	16
ESA104	Extension Header	1 per customer group	288
	EFG		2304
ESA105	ABCD	1 per Directory Number (DN)	5760
ESA106	Hunt Header	1 per hunt group	200
ESA107	Hunt Member	1 per hunt group	4000
	Office Parameter		1
	ESARTE table		256
ESA109	Trunk Group	Subset of tables TRKGRP and TRKSGRP: not accessible to customers	

PM181

The PM subsystem generates a PM181 log to report information related to the PM. The PM181 log prints additional information for ESA. The PM181 information includes the following:

- Manual exit warning

  The system generates a PM181 log when the links are restored after the RCC enters ESA if the following conditions occur:

  — the RCC is not manually busy (ManB)

  — the RSC_XPMESAEXIT time-out parameter is zero

  This log indicates that a manual exit must occur. The system prints this log one time each minute until a manual EXIT occurs on the RCC unit in ESA.

  Example log:

  ```
  PM181 MAR14 14:33:54 7534 INFO REM1 RCC 1 UNIT 0
    Node:SysB, Unit 0 Act:SysB, Unit 1 Inact:SysB
    PM in ESA, Communication restored, ready to be RTSed
  ```

  Note: When communications are restored, the system only generates the log when OFCENG table parameter RSC_XPMESAEXIT has a value of zero. This condition requires a manual ESA exit. For a detailed description of this office parameter, refer to the *Office Parameters Reference Manual.*

- Failed to exit ESA

  The log includes the reason for the failure.

  Example log:

  ```
  PM181 JUN14 12:33:04 3333 INFO REM1 RCC 1 UNIT 1
  Node:SysB, Unit 0 Act:SysB, Unit 1 Inact:SysB
  ESA Exit failed.  Reason: No reply from pp
  ```

- Failed to download ESA static data

  The log includes the reason for the failure and the table identification where the load failed.

  Example log:

  ```
  PM181 JUN14 12:33:04 3333 INFO REM1 RCC 1 UNIT 0
  Node:ISTb, Unit 0 Act:ISTb, Unit 1 Inact:SysB
  Failed to Load esa hunt Table (Table id 46)
  ```

- Successful ESA static data update

Example log:

```
PM181 JUN24 12:33:04 3298 INFO REM1 RCC 1 UNIT 1
  Node:InSv, Unit 0 Act:InSv, Unit 1 Inact:InSv
  ESA Static Data updated
```

- Failed to download ESA static data

  The log includes the reason for the failure.

  Example log:

```
PM181 JUN14 12:33:04 3333 INFO REM1 RCC 1 UNIT 1
  Node:InSv, Unit0 Act:InSv, Unit 1 Inact:InSv
  Failed to Load ESA Static Data, Reason:no reply from pm
```

Other RSC logs

For subscriber lines and DS-1 links, the RSC generates the same logs as for a host office configuration.

PM171

The RCC provides OMs and stores these measurements. The system forwards these OMs to the host in the form of a PM171 log when the RCC exits ESA. This log deals with traffic counts. Refer to *Log Report Reference Manual* for more information.

DRCC logs

Dual RCC (DRCC) logs contain information on the interlinks and the entry of Dual ESA (DESA). The following sections describe the PM221, PM222, PM223, and PM189 logs.

PM221—Interlink changes to manually busy (ManB)

Report format:

```
PM221 mmmdd hh:mm:ss ssdd MANB IRLINK
  PORT: modno C-side LINK linkno
  PORT: modno C-side LINK linkno
  IRLINK NO: irlnkno FROM: state
```

Example:

```
PM221 NOV17 19:03:00 5603 MANB IRLINK
  PORT: RCC 0  C-side LINK 1
  PORT: RCC 1  C-side LINK 1
  IRLINK NO: 0  FROM: InSv
```

PM222—Interlink changes to system busy (SysB)

Report format:

```
PM222 mmmdd hh:mm:ss ssdd SysB IRLINK
  PORT: modno C-side LINK linkno
  PORT: modno C-side LINK linkno
  IRLINK NO: irlnkno FROM: state
```

Example:

```
PM222 NOV18 19:03:30 5604 SysB IRLINK
  PORT: RCC 0  C-side LINK 1
  PORT: RCC 1  C-side LINK 1
  IRLINK NO: 0  FROM: InSv
```

PM223—Interlink changes to in service (InSv)

Report format:

```
PM223 mmmdd hh:mm:ss ssdd RTS IRLINK
  PORT: modno C-side LINK linkno
  PORT: modno C-side LINK linkno
  IRLINK NO: irlnkno FROM: state
```

Example:

```
PM223 NOV18 19:03:40 5604 RTS IRLINK
  PORT: RCC 0  C-side LINK 3
  PORT: RCC 1  C-side LINK 3
  IRLINK NO: 1  FROM: MANB
```

PM189—RCC is in Forced ESA (FESA)

Report format:

```
PM189 mmmdd hh:mm:ss ssdd INFO SW Information Report
  pmid n UNIT n: acttxt
  TASKID: taskid     , TIME: hh:mm:ss.cc
  TEXT: swerrtxt logdata
```

Example:

```
PM189 JAN01 12:34:40 1234 INFO SW Information Report
  RCC 0 UNIT 1: Act
  TASKID: 001C001C  MTCSLAV, TIME: 12:34:40.19
  TEXT: FORCE DOWN
```

RSC-S with ISDN logs

When the RSC-S has ISDN capability, the system produces logs that apply to ISDN functionality. The following sections explain actions that cause logs and the logs the system produces.

Logical link management audit and logs

One important source of ISDN log reports is the logical link management (LLM) audit. The present LLM audit makes periodic attempts to establish a logical link. With the RCC2, this audit tries to reestablish links if

- the D-channel is InSv
- there is no maintenance action that remains for the link

Autonomous terminal endpoint identifier check and restoration

During the LLM audit cycle, an autonomous terminal endpoint identifier (TEI) check occurs on removed TEIs. If the check passes, TEI restoration follows immediately. A log appears if the restoration action passes.

Autonomous D-channel restoration

The system audits D-channels that fail autonomously. The system attempts to return the channel to service. The system sends a log to the CC if the action succeeds. The system performs a maintenance action to restore the channel.

ISDN logs

The following logs apply to RSCE/RSC-S with ISDN faults.

Table 4-5 Logs for RSC-S with ISDN faults (Sheet 1 of 2)

Log number	Description
ISDN100	The system cannot put a D-channel handler (DCH) channel associated with an ISDN line in traffic level.
ISDN101	A DCH detects that a terminal (loop) is not available for message traffic.
ISDN102	A DCH detects duplicated TEIs on the same ISDN line. The DCH removes the line from service.
ISDN103	Manual action changed the state of a D-channel used for D-channel packet service.
ISDN104	Synchronization is lost on a D-channel used for D-channel packet service. This condition removes the channel from service.
ISDN106	Layer one of a D-channel failed. The loop is set ManB, and the *I* fail flag is set.
ISDN107	The system failed to restore the TEI.
ISDN108	The system restores the TEI.
ISDN109	The system restores a failed D-channel to service. The loop is set idle (IDL) from DMB, and the *I* flag clears.

Table 4-5 Logs for RSC-S with ISDN faults (Sheet 2 of 2)

Log number	Description
ISDN115	The attempted TEI assignment can exceed the maximum acceptable links for a specified set of TEI values.
ISDN116	Action identifier is a TEI value not assigned earlier to a terminal on the loop.
ISDN131	The number of BPVs on an ISDN line exceeds a threshold.

Logs created as a result of system action

The following table lists logs produced when automatic system tests or changes in some system state detect a fault.

Table 4-6 Log reports generated by system tests or changes (Sheet 1 of 2)

Equipment	Name	Summary
LGCI, LCME	PM102	Source state change to SysB
	PM100	Diagnostic failed
	PM101	Checksum failed
	PM107	Resource state change to C-side busy
	PM113	Message congestion
	PM114	Load or test failed
	PM115	Miscellaneous reports
	PM116	Message error reports
	PM117	Trouble during normal operation
	PM118	Miscellaneous reports
	PM179	PM hardware exception reports
	PM180	PM software exception reports
	PM190	DCH state change to SysB
	PM192	DCH state change to C-side removed from service
	PM193	DCH state change to offline
	PM194	DCH state change from InSv to ISTb
	PM195	DCH state change to InSv

Table 4-6 Log reports generated by system tests or changes (Sheet 2 of 2)

Equipment	Name	Summary
	PM198	DCH fault that is not service affecting
	PM199	DCH diagnostic results
	PM200	DCH load information
	PM235	DCH takeover occurrence to SysB
Links	PM183	P-side link state to SysB
	PM187	Carrier state change to SysB
	PM188	The system cannot put carrier protection switching in traffic level to service
Lines	ISDN100	DCH ISDN line channel is not available for service
	ISDN101	DCH detects a terminal is not available for service
	ISDN102	DCH detects TEIs on same ISDN line
	ISDN103	State of the D-channel changed
	ISDN104	Sync is lost on a D-channel
	ISDN106	D-channel layer one failure
	ISDN107	TEI restoration failed
	ISDN115	INFO subscription limits exceeded
	ISDN116	INFO TEI was not assigned

Logs created as a result of user input

The system can detect a fault while the system takes action requested by a command at a MAP display. When this event occurs, the system generates the log reports that appear in the following table.

Table 4-7 ISDN log reports generated after command input (Sheet 1 of 2)

Equipment	Name	Summary
XPMs	IOAU112	Table REXSCHED datafill changed
LGCI, LCME	PM100	Diagnostic failed
	PM101	Checksum failed
	PM102	State change to SysB

Table 4-7 ISDN log reports generated after command input (Sheet 2 of 2)

Equipment	Name	Summary
	PM103	State change to offline
	PM104	State change to not equipped
	PM105	State change to ManB
	PM106	State change from ManB to InSv
	PM114	Load or test failure
	PM191	DCH state change to ManB
	PM192	DCH state change to C-side removed from service
	PM193	DCH state change to offline
	PM195	DCH state change to InSv
	PM196	DCH removed from customer table DCHINV
	PM199	DCH diagnostic results
	PM200	DCH load information
	PM235	DCH takeover occurrence
Links	PM182	P-side link state change to ManB
	PM184	P-side link state change to INSv
	PM188	RTS or protection switching
Lines	LINE100	Diagnostic passed
	LINE101	Diagnostic failed
	LINE107	Insulation test required
	LINE110	Not normal potential detected
	LINE118	Failure to connect metallic test access (MTA)

5 SMS related logs

Subscriber Carrier Module-100S related logs

The DMS-100 software uses logs to record all important events that occur. The DMS-100 software makes these events visible to operating company personnel at the MAP terminal. Examples of important events are equipment fault, change in state of equipment, and failure or completion of a test. The log system in the Digital Multiplex System-100 (DMS-100) performs the following:

- creates a report that contains information about the event.
- stores the report in data store for online retrieval.
- distributes the report to a minimum of one output devices which display the report.

Output devices normally display log reports in the order that the log reports occur. The log prioritizing feature allows the output device to display the log reports with the highest alarm level first.

The following table describes logs that relate to the Subscriber Carrier Module-100S (SMS). The table contains the reasons for log generation, and the actions operating company personnel must take. The following table provides details on the RCS alarm reports that accompany PM128 logs and the response that operating company personnel must take. Descriptions and examples of logs that require additional explanation, appear after the table.

These descriptions include tuple change (TUPC) logs and RCS alarms and logs

Table 5-1 SMS related logs (Sheet 1 of 8)

Log name	Causes	Response
ALT100	Failure of short line diagnostics.	Retest the line card. Test the other line cards in the line card carrier. If failure of only one line card occurs, replace that card. If failure of all line cards in the line card carrier occurs, replace the line card carrier.
ALT101	Failure of extended line diagnostics.	Refer to ALT100.
IOAU112	A REX test of the SMS was not run for 7 days.	Investigate why REX test was not run on the SMS. Possible reasons include that the REX test is: • suspended for the SMS • disabled in table REXSCHED • manually turned off through the TST command at the PM level • manually turned off through table OFCVAR through parameter NODEREXCONTROL • disabled because the SMS is ISTb. If the SMS is ISTb, take action to return the SMS to service so the REX test can run.
LINE100	Line diagnostic passes.	Information only log.
LINE101	Line diagnostic fails.	Same as ALT100.
NAG400	Hourly under the control of the NAG command. Lists information, that includes REX results, about all nodes not in-service (InSv).	Depending on review of the log report, the operating company personnel must take the following steps. The steps to take depends on the review of the log report. The operating company personnel must return the node to service or enable node REX enabled.
PM102	Peripheral module (PM) set to system busy (SysB).	Determine the reason, test and replace the defective cards. Return the PM to service.
PM103	The PM is set to off-line from manually busy (ManB) state The PM is added to inventory table while off-line and unequipped.	Information only log.

Table 5-1 SMS related logs (Sheet 2 of 8)

Log name	Causes	Response
PM104	The PM changes from off-line to unequipped state. The PM is deleted from inventory table.	Information only log.
PM015	The PM changes to ManB state.	Information only log.
PM106	The PM returns to service.	Information only log.
PM107	The PM System or manual request changes to C-side busy (CBsy) state.	If the system requests the change, determine the reason. Test and replace the defective cards and return the PM to service.
PM108	Firmware or hardware error in peripheral processor (PP)	If the log generates for less than 2 min, there is no action required. If the log generates for more than 2 min or if diagnostic failure occurs, test and replace the defective cards. Return the PM to service.
PM109	The DS-1 link is set to SysB because of frame loss, too many bipolar violations, or RCS digroup card failure. Carrier group alarms accompany this log.	If the log generates for less than 2 min, there is no action required. If the log does not generate for less than two min, check for faults at the RCS and at the SMS. If the SMS and RCS are not defective, isolate the fault to RCS repeater, central office (CO) repeater, or to the DS-1 link and associated repeaters.
PM110	The number of bipolar violations, frame losses, or frame slips reach the threshold. The PM110 also generates when these levels are below threshold limits. Defective repeaters, RCS digroup cards, or DS-1 interface cards cause this log.	If the levels return to normal, there is no action required. If the levels do not return to normal, check for faults at the RCS and SMS. If the SMS and RCS are not defective, isolate the damage to the RCS repeater, central office repeater, or to the DS-1 link and associated repeaters.
PM111	DS-1 link returns to service.	Information only log.
PM114	Trouble is encountered during a maintenance action like load, test, initialization, or return to service.	Determine the reason, replace the defective cards, and return the PM to service.
PM128	The PM or PM unit encountered a problem during normal operation.	If the system recovers, do not take action. If the system does not recover, a PM102 log generates.
	The CMR card in RCC or a CMR load mismatch occurs.	Busy the RCC, replace the CMR card if the card is defective, reload, and return to service.

Table 5-1 SMS related logs (Sheet 3 of 8)

Log name	Causes	Response
	Hard parity fault.	Busy the unit, replace the cards in the list, reload, and return to service.
	State of the two units changed because of a REX test failure.	Investigate the PM600 log for reasons for the REX test failure.
	NT7X05 not present	The appropriate inventory table contains the card NT7X05. A maintenance action that involves the NT7X05 discovers that the NT7X05 is not present in the correct slot. To correct this fault, follow NT7X05 card replacement procedures to Bsy the unit, install the NT7X05 card, and RTS the unit.
	NT7X05 Fault Detected	The card can be functioning, but a fault appears. Replace the card. To correct this fault, follow NT7X05 card replacement procedures to Bsy the unit, install the NT7X05 card, and RTS the unit.
	Image file on the NT7X05 that cannot be used or is not present.	Set when the XPM unit does not have a operating image file on the NT7X05 card. Several factors can cause this condition: • a checksum failure can indicate that the file has a fault • failure of a loading attempt that uses the file, while loading from other files passed • the file is not present • the file is present and is not the correct file, that is, not the correct load as entered in the inventory table Execute a Bsy and RTS of the unit to correct this fault.

Table 5-1 SMS related logs (Sheet 4 of 8)

Log name	Causes	Response
	Load file on the NT7X05 is not present or cannot be used.	Set when one of more of the load files on the NT7X05 card in the XPM unit cannot be used. This response can indicate problems with the XPM loadfile and the CMR loadfile. Several factors can cause this condition: • a checksum failure indicates that the file of files have a fault. • a failure of a loading attempt that uses the file or files failed when loading from other files passes • the file or files are not present • the file or files are present but are, not the correct primary files as entered in the PMLOADS table Use the command string LOADPM INACTIVE CC NT7X05 to reload the NT7X05 card and correct this fault.
	Image in progress.	Set when the XPM unit actively dumps an image to the NT7X05 card.
	The REX test passes.	Information only log
	Diagnostic TESTALL failure.	Information only log
	REX warm SWACT occurred	Information only log.
	The SWACT controller override completion, failure, failure with a SWACT back to the originally active unit, or termination occurs	Information only log.
	At least one line on the remote terminal (RT) becomes unequipped.	The system generates a minor alarm. For information on clearing the alarm, refer to table RSC PM128 logs that result from alarms in this section.
	Unequipped lines detected in shelf <letter> clear.	Information only log.
PM180	Encounter of PM software exception (execution of software that is not correct).	Software experts use this log to troubleshoot software defects. Keep the log report for direction analysis.
PM181	Hard parity fault.	Busy the unit and replace the cards in the list. Reload and return to service.

Table 5-1 SMS related logs (Sheet 5 of 8)

Log name	Causes	Response
	Soft, intermittent parity faults.	If both units are in service (CC brings ISTb unit back to service), do not take action. If both units are not in service, busy the unit, reload, and return to service.
	A CMR card fault.	Busy the RCC unit and replace the CMR card, if the card is defective. Reload and return the unit to service.
	A minimum of one REX test failures occurs.	Retest manually and replace the defective cards.
	A REX test passes.	Information only log.
	Diagnostic TESTALL failure occurs.	Information only log.
	REX warm SWACT occurred	Information only log.
	Defective common controller cards in SMS.	Busy the unit, replace the cards in the list, reload if necessary, and return to service.
	Static data updated in SMS	Information only log.
	A P-side port or node status mismatch.	Information only log.
PM182	A PM P-side link changes to ManB	Information only log.
PM183	A PM P-side link changes to SysB	Verify that RCS digroup and SMS DS-1 interface cards function correctly. Test the link with SMS posted at the PM level or with links posted at the carrier level.
PM184	A PM P-side link returns to service	Information only log.
PM185	Firmware, hardware, or software that cause a trap interrupt detect an error condition.	This log provides information to troubleshoot software defects. Retain this report, and reports that accompany it, for direction analysis.
PM186	Maintenance limit or out-of-service limit exceeded on DS-1 links.	If levels return to normal, there is no action required. If levels do not return to normal, check for defects at the RCS and the SMS. If the SMS and RCS are not defective, isolate the fault to the RCS repeater, CO repeater, or to the DS-1 link and associated repeaters.
PM188	A DS-1 link protection switch occurs.	Information only log.

Table 5-1 SMS related logs (Sheet 6 of 8)

Log name	Causes	Response
PM189	Parity audit failure	If a PM181 log accompanies PM189, replace the card that the log lists, reload the unit, and return to service. If the log indicates a software program fault, reload the unit, and return to service.
PM600	Reasons for REX test failure:	Log PM600 records the maintenance actions performed on the SMS during the REX test. Log PM600 records the maintenance actions from the start of the REX to the step for which failure occurred. Use this information to determine the source of the REX test failure.
	Warm SWACT.	
	Warm SWACT turned off.	
	PreSWACT audit failure.	
	Autonomous SWACT.	
	The OOS tests of inactive unit 0.	
	The OOS tests of inactive unit 1.	
	An RTS of inactive unit 0.	
	An RTS of inactive unit 1.	
	Superframe/data synchronization of unit 0.	
	Superframe/data synchronization of unit 1.	
	InSv tests of inactive unit 0 before SWACT.	
	InSv tests of inactive unit 1 before SWACT.	
	InSv tests of active unit 0 after SWACT.	
	InSv tests of active unit 1 after SWACT.	
	InSv tests of inactive unit 0 after SWACT.	

Table 5-1 SMS related logs (Sheet 7 of 8)

Log name	Causes	Response
	InSv tests of inactive unit 1 after SWACT.	
	An RTS of inactive unit 0 after SWACT.	
	An RTS of inactive unit 1 after SWACT.	
	Superframe/data synchronization of unit 0 after SWACT.	
	Superframe/data synchronization of unit 1 after SWACT.	
	The SWACT controller refuses SWACT to unit 0.	
	The SWACT controller refuses SWACT to unit 1.	
	A SWACT back to unit 0 occurs.	
	A SWACT back to unit 1 occurs.	
	Recovery failure—SWACT	
PM601	The system generates this log when operating company personnel reset long-term failure counters to zero for a XPM posted at the MAP terminal.	This log is an information log. This log must remain in a form that the Technical Assistance Service (TAS) and field support organizations can analyze in the event of a later outage.
	The system generates this log when an XPM is deleted from datafill.	
PM777	The NT6X69 message card did not reset or did not acknowledge first handshake.	Busy the unit, replace the card, reload, and return to service.
	An IMC link fault	Isolate the fault to NT6X69 or NTMX77. Busy the unit, replace the card, reload, and return to service.
	Invalid card under test	Make sure that all cards in the PM are in the correct slots.

Table 5-1 SMS related logs (Sheet 8 of 8)

Log name	Causes	Response
	Memory parity fault.	Isolate the fault to NTMX77. Busy the unit, replace the card, reload, and return to service.
	CLASS modem resource (CMR) card in the RCC to the signaling processor (SP) timeout	Busy the RCC unit, replace the CMR card if the card is defective, reload, and return to service.

Log reports

The system generates log report LINE112 when a coin is stuck in a coin telephone. The system generates LINE113 when a problem occurs during use of the ringing bus. These line logs can involve coin collect, coin return, coin presence, ringing line, and automatic number identification (ANI). Refer to the *Log Report Reference Manual* for more information on these logs and logs that relate to these logs.

Using tuple change log reports

Tuple change (TUPC) logs track changes to tables as follows:

- log TUPC100 records tuple additions.
- log TUPC101 records tuple deletions.
- log TUPC102 displays the old tuple before the change.
- log TUPC103 displays the new tuple after the change.

The format of each log report and an example of each log report follow.

TUPC100 tuple added log

The TUPC100 log report format is as follows:

```
TUPC100 <Date>  <Time>  <Log No.>  INFO  TUPLE CHANGED
 TABLE NAME:  <table name>
  <old tuple>
        CHANGED TO
    <new tuple>
```

An example of a TUPC100 log report follows:

```
TUPC100 01:12:00  1000    INFO  TUPLE CHANGED
TABLE: LTCRINV
LTCRNAME FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC LOAD
                              CSLNKTAB
                               OPTCARD
    PECS6X45
RSC0 SMS 0 SME  15  54   31    BB  5  6X02PA ECR08BCI
     KRCC RCC 0                                      $
                          (10)  (11)  (12)  (13) $
                              MSG6X69                $
            MX77AA MX77AA MX77NB03
```

TUPC101 tuple deleted log

The TUPC101 log report format is as follows:

```
TUPC101 <Date> <Time> <Log No.> INFO TUPLE DELETED
  TABLE NAME:  <table name>
   <tuple that was deleted>
```

An example of a TUPC101 log report follows:

```
TUPC101 01:12:00  1000    INFO  TUPLE DELETED
TABLE: LTCRINV
LTCRNAME FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC LOAD
                              CSLNKTAB
                               OPTCARD
           PECS6X45
RSC0 SMS 0 SME  15  54   31    BB  5   6X02PA   ECR08BCI
     KRCC RCC 0                                      $
                              (10)  (11)  (12)  (13)     $
                         MSG6X69                      $
            MX77AA MX77AA
```

TUPC102 tuple changed from log

The TUPC102 log report format is as follows:

```
TUPC102 <Date>  <Time>  <Log No.>  INFO  TUPLE ADDED
  TABLE NAME:  <table name>
   <old tuple that was added>
```

An example of a TUPC102 log report follows:

```
TUPC102 01:12:00  1000    INFO  TUPLE ADDED
TABLE: LTCRPINV
PMTYPE PMNO
                        PSLNKTAB
RSC1 SMSR 0
    (0 DS1 DEFAULT N) (1 DS1 DEFAULT N) (2 NILTYPE)
    (3 NILTYPE) (4 DS1 DEFAULT) (5 NILTYPE)
    (6 NILTYPE) (7 NILTYPE) (8 NILTYPE)
    (9 DS1 NILTYPE N) (10 DS1 DEFAULT N) (11 NILTYPE)
    (12 NILTYPE) (13 NILTYPE) (14 NILTYPE) (14 NILTYPE)
    (15 NILTYPE) (16 NILTYPE) (17 NILTYPE) (18 NILTYPE)
    (19 NILTYPE)  $
```

TUPC103 tuple changed to log

The TUPC103 log report format is as follows:

```
TUPC103 <Date> <Time> <Log No.> INFO  TUPLE CHANGED TO
  TABLE NAME:  <table name>
   <new tuple>
```

An example of a TUPC103 log report follows:

```
TUPC103 01:12:00  1000    INFO  TUPLE CHANGED TO
TABLE: LTCRPINV
PMTYPE PMNO
                    PSLNKTAB
RSC1 SMSR 0
    (0 DS1 DEFAULT N) (1 DS1 DEFAULT N) (2 NILTYPE)
    (3 NILTYPE) (4 DS1 DEFAULT) (5 NILTYPE)
    (6 NILTYPE) (7 NILTYPE) (8 NILTYPE)
    (9 DS1 NILTYPE N) (10 DS1 DEFAULT N) (11 NILTYPE)
    (12 NILTYPE) (13 NILTYPE) (14 NILTYPE) (14 NILTYPE)
    (15 NILTYPE) (16 NILTYPE) (17 NILTYPE) (18 NILTYPE)
    (19 NILTYPE)  $
```

SS100—special services log

The system generates log reports SS100 when operating company personnel or an audit add or remove nailed-up connections. The log changes display during the addition or deletion of a nailed-up connection in the SMS.

The SS100 is an information-only log that specifies the following:

- operating company personnel remove or add a connection.
- a log that results from manual operation or audit.

- endpoints involved in the connection are special service lines or DS-1 channels.
- operation completes and is successful or encounters a problem in messaging with the SMS.

If a problem appears, table PSNAILUP updates immediately. The connection information relays to the SMS during a future audit. A SUCCESSFUL or TABLE ONLY output indicates the result.

An example of the SS100 log report format follows:

```
SS100  mmmdd hh:mm:ss ssdd INFO  P-SIDE NAILED-UP CONNECTION
srctxt opertxt  outtxt
end1nm
end2nm
abinfo
```

An example of an SS100 log report follows:

```
SS100  DEC15 15:30:00 1234 INFO P-SIDE NAILED-UP CONNECTION
MANUAL ADDITION SUCCESSFUL
RCS REM1 01 01 01 01
SMS 10 10 17
ABINSERT ENABLED
```

Digital phase lock loop clock failure information

The PM189 sync_was_lost log generates to inform operating company personnel of lost synchronization in the SMS without the loss of messaging. The PM189 big_sync_hit log generates when the SMS detects a large out-of-phase reading. Information about these logs, log report formats and examples of reports follow.

Sync_was_lost log

The PM189 sync_was_lost log generates when an SMS returns to service and lost synchronization the last time the SMS was in service. The central control (CC) did not acknowledge the synchronization diagnostic failure message.

The sync_was_lost log report format is as follows:

```
PM189 <Date>  <Time>  <Log No.> TBL  PM SW EXCEPTION REPORT
    <pm> <pmno> UNIT <unit no> : <activity>
 TASKID:<taskid><taskname>,TIME:<xpmtime>,COMID:<comid>
    TEXT: <text>
```

An example of a sync_was_lost log report follows.

```
PM189 JAN01 16:56:23 9554  TBL  PM SW EXCEPTION REPORT
   LTC 0 UNIT 0 :  Inact
   TASKID: 00170017 SYNC, TIME: 00:01:32.88, COMID: FF NILC
   TEXT:  Sync_was_lost 00 00 00
```

Big_sync_hit log

The PM189 big_sync_hit log generates when an SMS detects a large out-of-phase reading.

The big_sync_hit log report format is as follows:

```
PM189  <Date>  <Time>  <Log No.> TBL  PM SW EXCEPTION REPORT
   <pm> <pmno> UNIT <unit no> : <activity>
  TASKID: <taskid> <taskname>, TIME:<xpmtime>,COMID: <comid>
    TEXT:  <text> <hit>
```

An example of a big_sync_hit log report follows:

```
PM189  JAN01  16:56:23  9554  TBL  PM SW EXCEPTION REPORT
   LTC 0  UNIT 0 :  Inact
   TASKID:  00170017 SYNC, TIME: 00:01:32.88, COMID:  FF
NILC
   TEXT:  Big_sync_hit 00 50
```

PM600 REX failed log report

The system generates the PM600 log after SMS REX test failure. The PM600 provides a record of the steps that occurred during the REX, from start to the test for which failure occurred. The record also includes any recovery actions that the REX test initiates. This log helps to determine the cause of the SMS REX failure. An example of a PM600 log report follows.

```
  ** PM600 JUN08 01:28 8600 TBL REX FAILED SMS 0
Node:ISTb, Unit 0 Act:InSv, Unit 1 Inact:SysB (Diag Failed)

REX Step  Unit Start Time Failure Reason
Tst Inact   0  09:17:33
Bsy Inact   0  09:17:47
RTS Inact   0  09:18:15
Sync Inact  0  09:21:43
PreSWACT    0  09:21:51
Warm SWACT  –  09:22:37
Bsy Inact   1  09:22:40
RTS Inact   1  09:23:08
Sync Inact  1  09:25:27
Tst Act     0  09:22:50  REX test failed—InSv tests of active
                              Unit 0 after Swact
Warm SWACT  –  09:25:28
Bsy Inact   0  09:25:29
Finished    –  01:28:25
Supplemental Data
Diagnostic Failures: UTRDIAG
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 01   L15 LTE 00 65  LTC : 000    15   6X92
```

PM601 PM diagnostics history log

The PM601 log generates when operating company personnel reset long term failure counters to zero for a XPM posted at the MAP display. The PM601 also generates when an XPM is deleted from datafill. The information provided by PM601 is the summary of the history of diagnostic failures. This history of diagnostic failures begins at the earlier reset time. Retain this log for analysis in the event of a later outage. An example of a PM601 log follows.

```
PM601 AUG20 09:44:15 2741 INFO XPM Diagnostic History
RCC 1
Reset Long Term Failure (LTF) counts
LTF last reset: 92/07/01  06:22:10
Summary of LTF counts prior to reset:
                     UNIT 0      UNIT 1
DIAGLIST
       AB DIAG         1             1
       SPCH DG         0             1
     ---------------------------------
       CARDLIST
       NT6X44          1             1
       NT6X41          0             1
       NT6X69          0             2
```

RCS alarms and logs

Alarms cause the log subsystem to generate PM128 logs. The PM128 logs report a change of state from InSv to ISTb in an RCS. This log indicates the alarm that causes the state change, the reason for the alarm, and recommended actions to clear the alarm.

When multiple alarms occur, the most important alarm appears in the log.

Note: When an alarm occurs for multiple reasons, the most important reason appears in the log. The PM128 logs also occur when the alarm on an RCS changes from minor ISTb to major ISTb. The RCS changes because both minor and major alarms cause an RCS to change to ISTb.

The PM128 log report format is as follows.

```
PM128 mmdd hh:mm:ss  ssdd TBL ISTB pmid   FROM:  sttxt1, opttxt
```

An example of a PM128 log report follows.

```
PM128 APR01 12:00:00 2112 TBL ISTB RCS RCS0 01 0   FROM:  InSv,
REASON: minor: protection switched for shelf A
```

The log system generates PM128 logs when problems occur that can affect service. Examples of faults that affect service are a loss of industry ac power to the RCS and failure of equipped ringing generators. Examples of faults that do not affect service include disabling a protection link and a fault on a protection link.

Note 1: If the system cannot correct the problem automatically, a PM102 report generates. Perform the action recommended in the PM102 report.

Note 2: A log report lists only the most important alarm or the most important reason for alarm. Operating company personnel must enter the QUERYPM FLT command at the PM level of the MAP terminal against an RCS. Operating company personnel must enter the QUERYPM FLT command to find all alarms against that RCS.

The following table describes RCS alarm reports that accompany PM128 logs and recommended responses for operating company personnel.

Table 5-2 RCS PM128 logs resulting from alarms (Sheet 1 of 7)

Alarm	Description	Action required
major: power/misc	Indicates a loss of industry AC power to the RCS or an alarm assigned to customers (like gas, flood, or cabinet door open) occurred. Enter the text that appears in the PM128 log in the MISCTEXT and the ALMSEVER fields of table RCSINV. For details on how to enter table RCSINV, refer to the data schema section of the *Translations Guide*.	Make sure backup emergency battery activates to supply power and wait for return of commercial power. For miscellaneous alarms assigned to customers, operating companies normally maintain a list of possible faults. Consult this list. An example of a fault is the power unit that fails or shuts down because of an over-voltage or over-current condition. One possible action is to replace the power unit card.
major: ringing generator failure	Indicates failure of equipped ringing generators or their fuses blew. Subscriber lines cannot ring.	Replace blown ringing generator fuses or ringing generators.
major: shelf A: DDL out of sync	Indicates derived data link (DDL) messaging on the A-link is out-of-synchronization for a mode I shelf group.	Perform the action to take in the event of major: shelf <letter> DDL messaging lost. Focus on link A.
major: shelf <AB or CD>: DDL out of sync	Indicates that derived data link messaging (DDL) on link A, C, or both A and C is out of synchronization for a mode II shelf group	Follow the action to take in the event of “major: shelf <letter> DDL messaging lost".
major: shelf alarm	Indicates a major shelf alarm on the RCS. A minimum of one additional alarms accompanies the shelf alarm. The following section describes these additional alarms.	Post the RCS at the PM level of the MAP terminal and issue the QUERYPM command with the FLT parameter to determine which alarms are present. A list of alarms for the ISTb RCS appears on the MAP display.

Table 5-2 RCS PM128 logs resulting from alarms (Sheet 2 of 7)

Alarm	Description	Action required
major: shelf <letter>: DDL messaging lost	Indicates DDL messaging is lost to a shelf group (AB or CD or both). Faults that can cause this message include: a defective DS-1 link (A or C), DLU card, LIU card, TRU card, subscriber carrier module 100S-DS-1 (SMS) card, or DS-1 repeater.	Post the RCS at the PM level of the MAP terminal and issue the QUERYPM command with the FLT parameter. Note the present alarms. Additional alarms, like alarm-synchrony-lost, accompany the DDL messaging lost alarm.
	If a local carrier group alarm or far-end fault alarms are not present, the DS-1 links, repeaters, LIU, Subscriber Carrier Module-100S DS-1, and TOPS recording unit (TRU) cards are not defective. The problem can be a defective DLU card. If the DLU card is defective and the C link is used for a Mode II shelf group, DDL messaging is lost on both shelf groups.	A local carrier group alarm or remote end fault that accompanies a DDL messaging loss indicates a carrier problem. Issue the FELP command and run associated test to check the links. Along with the link tests, check the SMS DS-1, LIU, and TRU cards.
major: shelf <letter>: far end fault	Indicates that the RCS detects a failure on the link for the shelf (A, B, C, or D) that the alarm lists. The receive (RCV) light on the TOPS recording unit (TRU) card lights when a far end fault alarm occurs.	Follow the same procedures to take in the event of alarm major: shelf <letter>: LCGA.
major: shelf <letter>: LCGA	Indicates the SMS detects a failure on the link for the listed shelf (A, B, C or D) that the alarm lists. A major alarm indicates 8 or more subscribers lost service.	Post the SMS to which the RCS connects at the CARRIER level of the MAP display. If a protection switch is provisioned, the link should be protection switched.

Table 5-2 RCS PM128 logs resulting from alarms (Sheet 3 of 7)

Alarm	Description	Action required
major: shelf <letter>: LCGA (contd)		The DS-1 links display at the CARRIER level with the posted SMS. Check fields ALARM, BPV, SLIP, and FRAME for the cause of the local carrier group alarm. For example, if the SMS DS-1 card is removed, the text CARD appears under the ALARM field. The BPV field lists excessive bipolar violations (BpV) additional way to check faults on DS-1 links is to post the RCS and issue the command QUERYPM LINK. Make sure the SMS DS-1 Interface is installed. Test the DS-1 card. If the DS-1 card is not defective, check the LIU and TRU cards on the RCS. If these cards are not defective, or the defect persists after you replace these cards, check the DS-1 line and repeaters. Issue the FELP command to enable loopback on the carrier. Follow procedures to check sections of the DS-1 line and repeaters.

Table 5-2 RCS PM128 logs resulting from alarms (Sheet 4 of 7)

Alarm	Description	Action required
major: shelf<letter>: port is closed	Indicates the DS-1 link for the shelf (A, B, C, or D) that the alarm lists is manual busy or system busy. When a DS-1 link that changes to system busy causes this alarm, the alarm accompanies the LCGA.	If the link is manual busy (ManB), use the RTS command from the PM level of the MAP display to return the link to service. If the link is system busy (SysB), make sure the SMS is in service and post the SMS at the CARRIER level. The DS-1 links that connect to the SMS appear on the MAP display. Check the ALARM, BPV, FRAME, and SLIP fields for the cause of the alarm. For example, if excess bipolar violations (BpV) occur, issue the FELP command from the CARRIER level of the MAP display to enable loopback on the DS-1 link. Follow operating company procedures to check sections of the link and associated repeaters. The DS-1 line and repeaters, SMS DS-1 card, LIU, and TRU can cause the fault. These causes are the same as the causes of the LGCA alarm.
minor: alarm sync lost	Indicates the loss of alarm synchronization. Alarm messages from the RCS are cleared and any sent are invalid.	Post the associated SMS and issue the QUERYPM command with the FLT option. If only the alarm-synch alarm is present, check the acknowledgment unit (ACU) card. Make sure that the ACU card is installed and that the type of alarm card matches the type that table RCUINV lists. If the datafill is correct and the card is installed, replace the card.
minor: Local carrier group alarm on protection link	Indicates the protection link failure toward the SMS, and the link cannot be used for protection switching.	Follow the action required in the event of major: shelf <letter> LCGA.

Table 5-2 RCS PM128 logs resulting from alarms (Sheet 5 of 7)

Alarm	Description	Action required
minor: loc=3,10,1 line card 1 does not match the CARDCODE	Indicates an alarm is reported for a line assigned to a 7A25AA or 7A27AA line card. No alarms will be raised if the INSV field of the line is set to N.	Check for a defective, wrong, or missing line card in the carrier.
minor: PCM loop test failed on shelfgroup <AB or CD>	Indicates the failure of the pulse code modulation (PCM) looping test, run in mode II to check a DS-1 channel. If it fails on more than one shelf group, the alarm lists most important shelf group (AB then CD). A single PCM looping test failure causes a minor alarm. The channel and associated line card are removed from service after a PCM looping test failure. Tests are run on the card and channel again. If the card and channel pass testing they are returned to service. If the PCM looping test fails on more than one DS-1 channel-card combination, the DMS raises a major alarm. The shelf group where the multiple failures occurred is removed from service. PCM looping test failures are normally isolated or temporary occurrences.	If the PCM looping test fails continuously or with great frequency on one channel and only one alarm is present, suspect the associated line card. If the PCM looping test repeatedly fails on multiple channels, suspect the time assignment unit (TAU) card. Check the alarm light on the TAU card. If the alarm light is on, replace the card. Remember that replacing the TAU card takes down activity on the shelf group. If the TAU card is good, replace the line cards associated with the bad channels. If other faults cause a PCM looping test failure, additional alarms accompany these faults. These alarms are described in this table.
minor: protection link out of service	Indicates the protection link is manually or system busy.	Return to service a manually busy protection link by using the RTS command at the CARRIER level of the MAP display. Test a system-busied link in the same way that you test a link with an LCGA fault Follow the action for alarm major: shelf <letter>: LCGA.

Table 5-2 RCS PM128 logs resulting from alarms (Sheet 6 of 7)

Alarm	Description	Action required
minor: protection switched for shelf <letter>: <reason>	Indicates the DS-1 link for the listed shelf is protection switched manually or automatically (because of a fault detected by the SMS or RCS).	Issue the QUERYPM command with the FLT parameter and check log reports to find what problems are present that could have caused a protection switch. Follow the action required for alarm major: shelf <letter>: LCGA. You can release a manual protection switch manually using the PROTSW command at the CARRIER level of the MAP display. The protection switch being activated automatically indicates a problem. Usually faults on the DS-1 line cause a protection switch to occur.
minor: protection switching disabled for shelf <letter>	Indicates protection switching is disabled for the listed shelf. If more than one shelf is disabled for protection switching, the most important shelf is listed in the log message. The order is A, B, C, and D. The QUERYPM MAP list of alarms shows all shelves.	Post the associated SMS at the CARRIER level of the MAP display to activate a disabled protection switch. Issue the PROTSW command with the ENA parameter for the link to be re-enabled for protection switching.
minor: set by RCS	Indicates the RCS detects a fault, usually a protection link fault, that prevents protection switching.	Perform the same action as “major: shelf <letter> LCGA."
minor: CTR CX10 OOS	Indicates an operational fault was detected on the CX10 call progress tone receiver (CTR) configured in the specified test access controller XPM (TAC). The CTR is not available any longer for tone detection.	At the earliest opportunity, take the TAC out-of-service and run out-of-service diagnostic test to isolate the CTR fault. If the diagnostic test fails, replace the CTR card.

Table 5-2 RCS PM128 logs resulting from alarms (Sheet 7 of 7)

Alarm	Description	Action required
minor: CPA CX09 OOS	Indicates an operational fault was detected on the CX10 configured in specified TAC. The CPA is not available any longer for tone detection.	At the earliest opportunity, take the TAC out-of-service and run the out of service diagnostic test to isolate the CPA fault. If the diagnostic test fails, replace the CPA card.
minor: unequipped line(s) detected in shelf <letter>	Indicates that at least one datafilled line on the RT became unequipped. Note that the line state is set to line module busy (LMB) when the RT that attaches to ithe line state is out of service. The line set is also set to LMB when the RT indicates that the line is unequipped in the RT.	Insert a line card or remove the datafill in the computing module (CM) for the missing line card. If you insert a line card, the system will RTS the line within 20 seconds. If the line state is LMB and datafill in the CM for the missing line card is removed, a BSY/RTS must be performed. Perform a BSY/RTS on the SLC in order to update the line state in the XPM. If the line state is IDL and datafill in the CM for the missing line card is removed, automatically update the line state in the XPM.

6 SMU related logs

Subscriber Carrier Module-100 Urban related logs

The output reporting system generates log reports. Log reports merge on the log device because a printer device for each log type is too expensive. Log reports also merge because the system generates the log reports in real time.

You can experience problems when you monitor the printer for background information that occurs hours before a certain event. Use the separate subsystem buffers where you can view log reports of the same log type.

For example, if a problem occurs in the Subscriber Carrier Module-100 Urban (SMU) 0, maintenance personnel can dump the contents of the PM subsystem logs. Maintenance personnel scan the logs for information important to SMU 0. This action can provide the necessary background information to help isolate the problem.

The following table lists the log reports used to maintain the SMU-RCU subsystem. The table provides a description of the log, causes, and recommended responses.

Table 6-1 SMU related logs (Sheet 1 of 15)

Log name	Causes	Response
ALT100	Short line diagnostics fails.	Test the line card again and test the other line cards in the line card carrier (LCC). If one line card fails, replace the line card. If all line cards in the LCC fail, replace the LCC.
ALT101	Extended line diagnostics fails.	Refer to ALT100.
AUDT201	An audit causes a change in line state.	There is no action required. If the system generates the log more than 3 times in 5 min, perform diagnostic on the line.

Table 6-1 SMU related logs (Sheet 2 of 15)

Log name	Causes	Response
IOAU112	The SMU is not REXed for 7 days.	Investigate the reason REX does not run on the SMU. Possible reasons include: REX is • suspended for the SMU. • disabled in Table REXSCHED. • manually turned off with the TST command at the PM level. • manually turned off through Table OFCVAR with parameter NODEREXCONTROL. • disabled because the SMU is ISTb. If the SMU is ISTb, take action to return the SMU to service so the REX test can run.
ISDN 100	The DCH card detects that a terminal is not available for message traffic.	Identify the reason the terminal is not available. Contact technical support personnel.
ISDN 102	The DCH card detects a duplicated terminal endpoint identifier (TEI) on the same loop and removes TEI from service.	Access the LTPDATA MAP level and enter the TEI command to restore the TEI. If the condition remains present, the DCH audit removes the TEI from service again.
ISDN103	Manual action changes the state of the Bd channel.	There is no action required. (This log is for information only)
ISDN104	Synchronization is lost on the Bd channel. This condition causes the Bd channel to be removed from service. This condition indicates a problem between the DMS-100 switch and the packet handler.	Access the DCH MAP level and enter the CONT command to identify the problem on the loop. Return the carrier to service (RTS) and RTS the Bd channel again to correct the problem. If failure continues, contact the next level of maintenance.
ISDN105	Synchronization is lost on the primary rate access (PRA) B-channel to be removed from service.	If the DS-1 link is out of service, RTS the link. If the problem continues, contact the next level of maintenance.
ISDN106	Layer 1 of the specified D-channel fails separate from the other components.	Determine the failure reason and contact the next level of maintenance.

Table 6-1 SMU related logs (Sheet 3 of 15)

Log name	Causes	Response
ISDN107	The system fails to restore TEI. This problem indicates a removed TEI failed to verify the link establishment audit cycle, in the logical link manager. The logical link manager is in the SMU that the system did not restore.	Determine the failure reason and contact the next level of maintenance.
ISDN108	The system restores the TEI. This log indicates a removed TEI passed a check during the logical link management (LLM) audit in the SMU that the system restored.	Run a SUSTATE test to make sure communication occurs with the restored TEI.
ISDN109	A D-channel passes a check during the LLM audit in SMU. The system restores the D-channel to service.	Run a SUSTATE test to make sure communication occurs with the restored TEI.
ISDN110	A D-channel is in-service and the other D-channel is on standby.	Determine if the D-channel carrier is in-service or out-of-service. If the D-channel carrier is out-of-service, return the carrier to service. If the problem continues, access the PRADCH MAP level and perform a continuity test (CONT) or a Loopback test (LoopBK). These tests check that the transmission line functions correctly.
ISDN111	One D-channel is in an active (ACT) state, and the other D-channel is out-of-service.	Determine if the D-channel carrier is in-service or out-of-service. If the D-channel carrier is out-of-service, return the carrier to service. If the problem continues, access the PRADCH MAP level and perform a CONT or LoopBK. These tests check that the transmission line functions correctly.
ISDN112	Both D-channels are out-of-service.	Determine if the D-channel carrier is in-service or out-of-service. If the D-channel carrier is out-of-service, return the carrier to service. If the problem continues, access the PRADCH MAP level and perform a CONT or a LoopBK. These tests check that the transmission line functions correctly.

Table 6-1 SMU related logs (Sheet 4 of 15)

Log name	Causes	Response
ISDN113	The D-channel switchover occurs manually. The log shows the active and out-of-service D-channels after switchover.	Determine if the D-channel carrier is in-service or out-of-service. If the D-channel carrier is out-of-service, take appropriate action to bring the carrier in-service. If the problem continues, access the PRADCH MAP level and perform a CONT or a LoopBK. These tests check if the transmission line functions correctly.
ISDN114	The D-channel switchover occurs separate from other events.	Determine if the D-channel carrier is in-service or out-of-service. If the D-channel carrier is out-of-service, take appropriate action to bring the carrier in service. If the problem continues, access the PRADCH MAP level and perform a CONT or a LoopBK. These tests check if the transmission line functions correctly.
ISDN115	An attempted TEI assignment exceeds the subscription counters that represent the maximum links permits. The maximum value are for a specified set of TEI values.	Perform the TEI audit.
ISDN116	The action identifier is a TEI value not assigned to a terminal on the loop.	Identify the denied message. Perform a TEI audit.
ISDN200	This report is daily for a maximum of ten ISDN lines for each generation. The report displays the number of frames received, and transmitted. The report also displays the retransmitted frames where errors exceed the threshold value. The report also displays the percentage of total frames that these errors represent.	Refer to *SMU Maintenance Manual* to determine the reason for the high transmission error rate on the indicated ISDN lines. Clear the trouble.

Table 6-1 SMU related logs (Sheet 5 of 15)

Log name	Causes	Response
ISDN201	The system generates this report daily. The percentage of errored and retransmitted frames on the ISDN switch appear in this report. Peg counts of all ISDN basic rate access (BRA) lines, like the two alternate mark inversion (AMI) and 2B1Q lines, determine the percentage calculation. The report also displays the number of defective lines that the ISDN200 logs report.	Refer to *SMU Maintenance Manual* to determine the reason for the high transmission error rate on the indicated ISDN lines. Clear the trouble.
ISDN203	The system generates this report each day. This report describes the percentage of errored and retransmitted frames on the ISDN switch. Peg counts of all ISDN basic rate access (BRA) lines, like the two alternate mark inversion (AMI) and 2B1Q lines, determine the percentage calculation. The report also displays the number of defective lines that the ISDN200 logs report.	Determine the reason for the a high percentage of transmission error rate on the bad ISDN lines that the ISDN200 logs report.
LINE100	The line diagnostic passes	There is no action required. (This log is information only)
LINE101	The line diagnostic fails	Refer to ALT100.
LINE131	The ISDN BRA line exceeds threshold for block errors, errored seconds, or severely errored seconds.	Perform diagnostic on the line. Verify the line card, NT1, and terminal equipment can respond.
LINE145	Change in the frame synchronization status for ISDN lines.	Frame synchronization loss corrects automatically. If reports persist, contact the next level of maintenance.
NAG400	The system generates this report each hour, under the control of the NAG command. Lists information, like REX results, about nodes not in-service (InSv).	The log report review determines if the operating company personnel must take steps to return the node to service or allow the node REX.

Table 6-1 SMU related logs (Sheet 6 of 15)

Log name	Causes	Response
PM102	The PM is set to system busy (SysB).	Determine reason. Perform test. Replace defective cards. Return PM to service.
	The RCU is set to SysB with 200 or more messages that are not solicited in one 10 min period.	Produces RCU alarms. Refer to *SMU Maintenance Manual*.
	The RCU is set to SysB with 20 or more initializations in one 10 min period.	Manually busy the RCU. RTS.
PM103	The PM becomes off-line from a manually busy state.	There is no action required. (This log is for information only)
	The PM added to inventory table while off-line and not equipped.	There is no action required. (This log is for information only)
PM104	The PM changes from OFFL to not equipped state.	There is no action required. (This log is for information only)
	The PM deleted from inventory table.	There is no action required. (This log is for information only)
PM105	The PM changes to manually busy state.	There is no action required. (This log is for information only)
PM106	The PM returns to service.	There is no action required. (This log is for information only)
PM107	PM changed to central side busy state by system or manual request.	If the system requests the busy state, determine the reason. Perform a test. Replace defective cards. Return the peripheral module (PM) to service.
PM108	Firmware or hardware error in peripheral processor (PP)	There is no action required if the system generates reports for less than 2 min. If the system generates reports for more than 2 min or if diagnostics fail, perform a test. Replace defective cards. Return PM to service.
PM109	The DS-1 link set to SysB because of frame loss, too many bipolar violations, or RCU digroup card failure. Carrier group alarms accompany this log.	There is no action required if the system generates reports for less than 2 min. If the system generates reports for more than 2 min, check for problems at RCU and SMU. If SMU and RCU are free of problems, isolate fault to RCU repeater, central office (CO) repeater, or the DS-1 link and associated repeaters.

Table 6-1 SMU related logs (Sheet 7 of 15)

Log name	Causes	Response
PM110	Bipolar violation (BpV), frame loss, or frame slip thresholds exceeds limit. The system generates this log when these levels fall below threshold limits. Defective repeaters, RCU digroup cards, or DS-1 interface cards cause low levels.	There is no action required if levels return to a normal state. If levels do not return to a normal state, check for problems at RCU and SMU. If SMU and RCU do not have problems, isolate fault to RCU repeater, CO repeater, or the DS-1 link and associated repeaters.
PM111	DS-1 link returns to service.	There is no action required. (This log is for information only)
PM114	Trouble occurs during maintenance actions like load, test, initialization, or return to service.	Determine reason. Replace defective cards. Return PM to service.
PM128	The PM or PM unit encounters trouble during normal operation. Specified examples follow:	There is no action required. If system cannot recover, the system generates PM102.
	The CMR card is defective or a CMR load mismatch occurs	Busy unit. Replace CMR card if defective. Reload. Return unit to service.
	Hard parity fault	Busy unit. Replace card in list. Reload. Return to service.
	The RCU initialization warning, completion	There is no action required. (This log is information only)
	The RCU minor/major alarms (RCU set in-service trouble).	For alarm types 1-4, enter the DIAG command at the LTP level. If single card fails, replace the card. If all cards in line card carrier (LCC) fail, replace LCC. Test replacement line card (or all line cards if LCC is replaced). For alarm type 5, replace the indicated common equipment card or line card carrier. Test common equipment card at PM level with TST command. Test line card carrier with DIAG command at LTP level. Make sure all line cards in carrier operate correctly. For configuration alarm, change entries to match hardware equipped or equip the hardware to match entries. For digital line alarm, make sure RCU and SMU do not have problems. If problems occur, troubleshoot DS-1 line and associated repeaters.

Table 6-1 SMU related logs (Sheet 8 of 15)

Log name	Causes	Response
	State of the two units changes because of a REX test failure.	Investigate the PM600 log for reasons for the REX failure.
	REX test passes.	There is no action required. (This log is for information only)
	Diagnostic TESTALL fails.	There is no action required. (This log is for information only)
	REX warm SWACT occurs.	There is no action required. (This log is for information only)
	A SWACT controller override occurs, fails, fails with a SWACT back to the active unit, or aborts.	There is no action required. (This log is for information only)
	The NT7X05 card is not present	The NT7X05 card receives entries in the inventory table. During a maintenance action that involves the NT7X05, the NT7X05 is not in the correct slot.
	An NT7X05 Fault Detected	To correct this fault, follow NT7X05 card replacement procedures to busy (Bsy) the unit. Install the NT7X05 card. RTS the unit. The card can function, but the system detects a problem. Replace the card. To correct this fault, follow NT7X05 card replacement procedures to Bsy the unit. Install the NT7X05 card. RTS the unit.
	Image file cannot be used or is not present on the NT7X05	Set when the XPM unit does not have an image file that can be used on the NT7X05 card. Several factors can cause this problem: • a failed checksum indicates the file(s) can have damage • a loading attempt with the file(s) can fail. Loading from other files passed. • the file(s) may not be present • the file(s) can be present and can be the wrong file(s). The file(s) may not be the correct primary file(s) as datafilled in the inventory table To correct this fault, Bsy and RTS the unit to generate an image dump.

Table 6-1 SMU related logs (Sheet 9 of 15)

Log name	Causes	Response
	Load file cannot be used or is not present on the NT7X05	Set when the XPM unit does not have an image file that can be used on the NT7X05 card. Several factors can cause this problem: • a failed checksum indicates the file(s) can have damage • a loading attempt with the file(s) fails. Loading from other files passes. • the file(s) may not be present • the file(s) can be present and can be the wrong file(s). The file(s) may not be the correct primary file(s) as datafilled in the PMLOADS table To correct this fault, reload the NT7X05 card. Use the command string LOADPM INACTIVE CC NT7X05.
	Image in progress	Set when the XPM unit dumps an image to the NT7X05 card
PM180	Encounters PM software exception (wrong execution of software).	Software experts use this log to troubleshoot software defects. Retain log report for trend analysis.
PM181	Hard parity fault	Busy unit. Replace card in list. Reload. Return to service.
	Soft, parity faults that are not continuous	There is no action required if the two units are in-service. The CC brings the ISTb unit to service. If the two units are not in-service, Bsy the unit. Reload. RTS.
	CMR card fault	Busy unit. Replace CMR card if defective. Reload. RTS.
	REX test passes	There is no action required.
	Messaging fails or lost	Check RCU digroup card, SMU DS-1 interface card, and DS-1 link.
	Defective common controller cards in SMU	Busy unit. Replace card in list. Reload. RTS the unit.
	Static data updated in SMU or RCU.	There is no action required. (This log is for information only)

Table 6-1 SMU related logs (Sheet 10 of 15)

Log name	Causes	Response
	System initiates, completes, or aborts tests.	There is no action required. (This log is for information only)
	System initiates, completes, or times-out switchover.	There is no action required. (This log is for information only)
	RCU node status mismatch	There is no action required. Call processing node status table is updated to reflect status in RCU node status table.
	PCM loopback test fails.	PM183 log accompanies this log. Post RCU at PM level and check for alarms. Test RCU. Test links with SMU posted at PM level or with links posted at carrier level.
PM182	PM peripheral side (P-side) link changed to manually busy.	There is no action required. (This log is for information only)
PM183	PM P-side link changed to system busy.	Verify that RCU digroup and SMU DS-1 interface cards function correctly. Test link with SMU posted at PM level or with links posted at carrier level.
PM184	PM P-side link returned to service.	There is no action required. (This log is for information only)
PM185	Firmware, hardware, or software detects an error condition that causes trap interrupt.	Software technicians use this log to troubleshoot software defects. Retain this report and other reports for trend analysis.
PM186	The number of problems on DS-1 links exceed the maintenance limit.	There is no action required if levels return to a normal basis. If levels do not return to a normal basis, check for problems at RCU and SMU. If SMU and RCU do not have problems, isolate problem to RCU repeater, CO repeater, or the DS-1 link and associated repeaters.
PM189	Parity audit failure	If PM181 accompanies this report, replace card in list. Reload unit. RTS. If log indicates software program fault, reload unit. RTS

Table 6-1 SMU related logs (Sheet 11 of 15)

Log name	Causes	Response
PM190	DCH changes state to SysB because of a fault in the DCH.	Services that the ISG defines are switched to the spare DCH. If the SMU does not recover, perform diagnostics on the DCH. Replace the DCH with subsequent cards that appear in the card list. If DCH cannot be RTS, contact the next level of maintenance.
PM191	A manual request changes DCH to manually busy.	There is no action required. (This log is for information only)
PM192	Central side (C-side) node of DCH is removed from service.	There is no action required. The DCH recovers automatically when the C-side node is RTS.
PM193	DCH is placed in off-line state	There is no action required. (This log is for information only)
PM194	DCH encounters trouble during normal operation. The DCH changes state from in-service to in-service trouble.	There is no action required if the system recovers. If the system does not recover, the system generates PM190. Follow the response given for PM190 log.
PM195	A manual or system request returns the DCH to service.	There is no action required. (This log is for information only)
PM196	The DCH is removed from Table DCHINV.	There is no action required. (This log is for information only)
PM198	DCH sends a message that is not solicited that contains a valid fault condition that does not affect service.	Services that the ISDN service group (ISG) define automatically switch to the spare DCH. If the SMU does not recover, perform diagnostics on the DCH. Replace the DCH and subsequent cards that appear in the card list. If DCH cannot be RTS, contact the next level of maintenance.
PM199	DCH completes a system diagnostic test or the command string TST ROM is executed on a DCH or enhanced DCH.	There is no action required if the test passes. If the test does not pass, services that the ISG defines automatically switch to the spare DCH. If the SMU does not recover, perform diagnostics on the DCH. Replace the DCH and subsequent cards that appear in the card list. If DCH cannot be RTS, contact the next level of maintenance.

Table 6-1 SMU related logs (Sheet 12 of 15)

Log name	Causes	Response
PM200	Indicates an attempt to load a DCH.	There is no action required if the load passes. If the load does not pass, perform diagnostics on the DCH. Replace the DCH and subsequent cards that appear in the card list. If DCH cannot be RTS, contact the next level of maintenance.
PM230	The system generates or clears RCU alarms.	For alarm types 1-4, enter the DIAG command at the LTP level. If a single card fails, replace the card. If all cards in line card carrier (LCC) fail, replace LCC. Test the replacement line card, or all line cards if LCC is replaced. For alarm type 5, replace the indicated common equipment card or line card carrier. Test common equipment card at PM level with TST command. Test line card carrier with DIAG command at LTP level. Make sure all line cards in carrier operate correctly. For configuration alarm, change entries to match hardware equipped or equip hardware to match entries. For digital line alarm, make sure RCU and SMU do not have problems. Troubleshoot DS-1 line and associated repeaters.
PM231	The SMU fails to acknowledge audit request from the ISDN SPECCONN facility to add or delete a channel connection.	Check that the of end point information is correct. Contact next level of maintenance.
PM232	The SMU acknowledges audit request from the ISDN SPECCONN facility to add or delete a channel connection.	There is no action required. (This log is for information only)
PM233	The SMU often fails to add or delete channel connections. The ISDN SPECCONN facility requests the addition or deletion.	Check that the end point information is valid. Contact the next level of maintenance.
PM234	Possible problem with SMU channel connection data in the ISDN SPECCONN facility.	Check status of end points. Contact the next level of maintenance.

Table 6-1 SMU related logs (Sheet 13 of 15)

Log name	Causes	Response
PM235	DCH takeover occurs and the test fails.	The ISG identifies the source and destination DCHs. There is no action required if DCH takeover is completed. If takeover fails, destination DCH is set to SysB. The system generates PM190. Follow response given for PM190.
PM236	Accuracy is lost, found, or not found on one end point of the network segment of an ISDN special connection.	There is no action required if “integrity found" log follows the “integrity lost" or “integrity not found" logs. If the “integrity found" log does not follow these two logs, the system indicates a network integrity error. Contact the next level of maintenance.
PM270	The DCH is congested or DCH congestion clears.	There is no action required. (This log is for information only)
PM600	The REX fail reasons follow.	The PM600 records the maintenance actions performed on the XPM. PM600 records the actions during the failed REX from the start of the REX to the step that fails.
	Warm SWACT Warm SWACT turned off PreSWACT audit failure Autonomous SWACT OOS tests of inactive unit 0 OOS tests of inactive unit 1	Use this recorded information to locate the source of the REX failure. Refer to the following table.
	RTS of inactive unit 0 RTS of inactive unit 1 Achieving superframe/data synchronization of unit 0 Achieving superframe/data synchronization of unit 1	** PM600 JUN08 01:28 8600 TBL REX FAILED XPM 0 Node:ISTb, Unit 0 Act:InSv, Unit 1 Inact:SysB (Diag Failed) REX Step Unit Start Time

Table 6-1 SMU related logs (Sheet 14 of 15)

Log name	Causes	Response
	InSv tests of inactive unit 0 before SWACT InSv tests of inactive unit 1 before SWACT InSv tests of active unit 0 after SWACT InSv tests of active unit 1 after SWACT InSv tests of inactive unit 0 after SWACT InSv tests of inactive unit 1 after SWACT RTS of inactive unit 0 after SWACT RTS of inactive unit 1 after SWACT Achieves superframe/data synchronization of unit 0 after SWACT Achieves superframe/data synchronization of unit 1 after SWACT SWACT to unit 0 SWACT controller refuses SWACT to unit 1 SWACT controller refuses SWACT back to unit 0 occurs SWACT back to unit 1 occurs Recovery failed—SWACT	Failure Reason Tst Inact 0 09:17:33 Bsy Inact 0 09:17:47 RTS Inact 0 09:18:15 Sync Inact 0 09:21:43 PreSWACT 0 09:21:51 Warm SWACT - 09:22:37 Bsy Inact 1 09:22:40 RTS Inact 1 09:23:08 Sync Inact 1 09:25:27 Tst Act 0 09:22:50 REX test failed—InSv tests of active Unit 0 after SWACT Warm SWACT - 09:25:28 Bsy Inact 0 09:25:29 Finished - 01:28:25 Supplemental Data Diagnostic Failures: UTRDIAG Site Flr RPos Bay_id Shf Description Slot EqPEC HOST 01 L15 LTE 00 65 LTC : 000 15 6X92
PM601	The system generates this log when operating company personnel reset the long term failure counters to zero for an SMU. The MAP terminal displays the SMU. The system generates this log when an SMU is deleted from the entries.	This log is for information only. Retain the log so Technical Assistance Service (TAS) and field support organizations can analyze the log if an outage occurs.
PM777	NT6X69 message card fails to reset or acknowledge first handshake.	Bsy unit. Replace card. Reload. RTS.

Table 6-1 SMU related logs (Sheet 15 of 15)

Log name	Causes	Response
	IMC link fault	Locate fault on NT6X69 or NT6X77. Bsy unit. Replace card. Reload. RTS.
	Invalid card under test	Make sure all cards in PM are in correct slots.
	Memory parity fault	Locate fault on NT6X46 or NT6X47. Bsy unit. Replace card. Reload. RTS.
	CMR card to UP card timeout	Bsy unit. Replace CMR card if defective. Reload. RTS.
SCSS100	CC special-service connection audit adds or deletes a connection in the SMU	There is no action required if the system generates one report. If the system generates this report often, contact the next level of maintenance. The CC audit detects discrepancies between CC and SMU records for special-service connections.
SCSS101	The audit updates or changes the status of SMU special-service connection.	If log repeats with text `Matched CC to Peripheral` or `Pending Connection Type`, contact the next level of support.
SCSS102	Connection type, trunk conditioning type and data, attenuation, RCU to subscriber supervisory signaling, or C-side channel information is updated in the SMU.	There is no action required if the system generates one report. If the system generates this report often, contact the next level of maintenance. The log indicates that discrepancies are present between CC and SMU records for special service connections.
SCSS103	SMU time switch connection is not correct or, after SMU warm SWACT, RCU time switch is not correct.	There is no action required if the system generates one report. If the system generates this report often, contact the next level of maintenance.
	Virtual end point in an ISDN special connection is assigned or reassigned or attempt to reassign virtual end point fails. The attempt fails because all channels are busy or a message that prevents condition is present.	There is no action required. Virtual end point connections occur when resources are available.
	The SMU does not send required operational measurements (OM) values to the DMS-100 switch.	If the system generates the UTR100 log for less than 2 min, there is no action required. If the system generates UTR100 for more than 2 min, investigate the cause. Contact the next level of maintenance.

Logs for the SMU

Most of the log reports that the SMU-RCU subsystem generates follow the same patterns and meanings of other XPMs. The following sections highlight logs that include information for the SMU-RCU configuration. For additional information, refer to *Log Report Reference Manual*.

PM128 (CND option is disabled)

The system generates report PM128 to indicate the CMR card does not function and the CND feature cannot operate.

```
PM128 MAY28 11:33:22 5663 TBL ISTb SMU 33 RCU0 00 0
Node       : ISTb (Inact OOS, Unit ISTb, CSLink OOS)
Unit0 Inact: ManB
Unit1   Act: ISTb (CMR NT6X78 OOS) From InSv
```

The operating company personnel must replace the defective CMR card. Refer to *SMU Maintenance Manual* for a description of the procedure.

PM180 (CMR card trouble)

This log is a standard PM180 log. The text field of this log indicates trouble is present on the CMR card. The system attempts to reset the card.

```
PM180 MAY28  23:23:21  0011  TBL PM EXCEPTION REPORT
SMU 60  Unit1: Act
TASKID:  00230023 CMRTASK, TIME: 22:32:45,
COMID:  FF  NILCID
TEXT:  CMR CARD TROUBLE
```

If the system generates this log often, perform maintenance on the CMR card. Refer to *SMU Maintenance Manual* for a description of the procedure.

PM181 (messaging activity)

The system generates report PM181 when messaging fails, is lost forever, or recovers between an SMU and RCU.

```
PM181 JAN01 14:55:32  INFO SMU 60  UNIT0
NODE:  INSV, UNIT0 INACT:INSV,  UNIT1: ACT:INSV
MESSAGING RECOVERED ON P-side PORT 3 TO RCU RCU0 01 0
```

The system generates this log when messaging recovers between the SMU and RCU. Port 3 of the SMU (interfaces to DS-1 link 3) associates with one messaging link that serves the SMU and RCU.

Two other text strings can appear as part of the PM181 log when messaging fails.

```
MESSAGING FAILED ON P-side PORT 3 TO RCU RCU0 01 0
```

This text indicates messaging fails on a messaging link between the SMU and RCU. The system generates a PM109 log. The DS-1 line, the RCU digroup card, or the SMU DS-1 interface card can cause the problem. A type 5 alarm accompanies a defective digroup card. A type 6 configuration alarm accompanies a missing digroup card. A missing DS-1 interface card causes the ALARM field of the CARRIER level of the MAP display to display the text CARD. A defective DS-1 Interface card causes the system to generate another PM 181 log. A digital line failure causes a type 7 alarm. The warning indicator at the RCU faceplate lights up.

```
MESSAGING LOST TO RCU RCU0 01 0 ON P-side PORTS 3 and 4
```

This message indicates the failure of both messaging links between the SMU and RCU. The RCU is C-side busy (CBsy) then SysB. The RCU is in total operation failure (TOF).

PM181 (various messages)

The DS-1 links 3 and 4 carry system control messages between the SMU and the RCU. In the following MAP display, Link 3 fails. The DS-1 link 4 now carries system control messages. If link 4 fails, the RCU enters TOF and becomes SysB.

```
PM181 MAY28  23:23:21  0011 INFO SMU 60
Node: ISTb, Unit0 Act: InSv, Unit1 Inact: ManB P-side
Messaging Failed on P-side Port 3 to RCU RCU0 01 0
```

The following log message indicates the DS-1 link 4 recovers the ability to transmit system control messages. If link 3 is the active message link, link 3 continues to control system messaging.

```
MESSAGING RECOVERED ON P-side PORT 4 TO RCU RCU0 01 0
```

In the next log message, the ability to transmit system control messages fails on DS-1 links 3 and 4. The RCU enters the TOF state and becomes SysB.

```
MESSAGING LOST TO RCU RCU0 01 0 ON P-side PORTS 3 AND 4
```

In the following log message, static data (data that does not change on a dynamic basis, like call processing information) are updated in the SMU. This information includes line and RCU configuration information.

```
STATIC DATA UPDATED
```

PM181 (CMR trouble)

This log is a standard PM181 report, with the message field changed to “CMR NT6X78AA OOS" or “CMR Diagnostic Fail." This log indicates that the CND feature does not operate for the RCU lines off the SMU.

```
PM181 MAY02 09:44:11 1333 INFO SMU 2 Unit 0: Active
Node : ISTB, Unit0 Act : ISTB, Unit1 Inact : INSV
CMR NT6X78AA OOS.
```

As with report PM128, the operating company personnel must replace the defective CMR card. Refer to *SMU Maintenance Manual* for a description of the procedure.

PM600 REX failed log report

The system generates report PM600 when an XPM REX test fails. The PM600 provides a record of the steps that occur during the REX from the start of the test to the step that fails. This report includes any recovery actions that REX initiates. This log helps to determine the cause of the XPM REX failure. An example of the PM600 log report follows:

```
  ** PM600 JUN08 01:28 8600 TBL REX FAILED SMU 0
Node:ISTb, Unit 0 Act:InSv, Unit 1 Inact:SysB (Diag Failed)

REX Step  Unit Start Time Failure Reason
Tst Inact   0  09:17:33
Bsy Inact   0  09:17:47
RTS Inact   0  09:18:15
Sync Inact  0  09:21:43
PreSWACT    0  09:21:51
Warm SWACT  –  09:22:37
Bsy Inact   1  09:22:40
RTS Inact   1  09:23:08
Sync Inact  1  09:25:27
Tst Act     0  09:22:50  REX test failed–InSv tests of active
                                Unit 0 after SWACT
Warm SWACT  –  09:25:28
Bsy Inact   0  09:25:29
Finished    –  01:28:25
Supplemental Data
Diagnostic Failures: UTRDIAG
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 01   L15 LTE 00 65  LTC : 000    15   6X92
```

PM601 PM diagnostics history log

The system generates report PM601 when operating company personnel reset long term failure counters to zero. The operating company personnel reset the counters for a XPM posted at the MAP display. The system also generates PM601 when an XPM is deleted from the entries. The PM601 provides a summary of the history of diagnostic failures collected after the previous reset time. Keep this log for analysis if a future power failure occurs. An example of a PM601 log follows:

```
PM601 AUG20 09:44:15 2741 INFO XPM Diagnostic History
SMU 1
Reset Long Term Failure (LTF) counts
Reset Long Term Failure (LTF) counts
LTF last reset: 92/07/01  06:22:10
Summary of LTF counts prior to reset:
                 UNIT 0        UNIT 1
DIAGLIST
    AB DIAG         1             1
    SPCH DG         0             1
  ---------------------------------
CARDLIST
    NT6X44          1             1
    NT6X41          0             1
    NT6X69          0             2
```

Digital phase lock loop clock failure information

The system generates report PM189 sync_was_lost and big_sync_hit logs to inform operating company personnel that loss of synchronization occurs in the SMU without the loss of messaging. The PM189 also generates when a large out-of-phase reading is encountered. Log report formats and examples of reports are provided in this section.

Sync_was_lost log

The system generates the report PM189 sync_was_lost log when an SMU that RTSs loses synchronization after the previous in-service. The system generates this log when the CC does not acknowledge the synchronization diagnostic failure message.

The log report format for sync_was_lost is as follows:

```
PM189  <Date>  <Time>  <Log No.>  TBL  PM SW EXCEPTION REPORT
<pm> <pmno> UNIT <unit no> : <activity>
TASKID:  <taskid> <taskname>, TIME: <xpmtime>, COMID: <comid>
TEXT:  <text>
```

An example of log report sync_was_lost follows:

```
PM189  JAN01  16:56:23  9554  TBL  PM SW EXCEPTION REPORT
LTC 0 UNIT 0 :  Inact
TASKID:  00170017 SYNC, TIME:  00:01:32.88, COMID:  FF NILC
TEXT:  Sync_was_lost 00 00 00
```

Big_sync_hit log

The system generates the PM189 big_sync_hit log when an SMU detects a large out-of-phase reading.

The log report format for big_sync_hit is as follows:

```
PM189  <Date>  <Time>  <Log No.>  TBL  PM SW EXCEPTION REPORT
 <pm> <pmno> UNIT <unit no> : <activity>
TASKID:  <taskid> <taskname>, TIME:  <xpmtime>, COMID:<comid>
TEXT:  <text> <hit>
```

An example of log report big_sync_hit log follows:

```
PM189  JAN01  16:56:23  9554  TBL  PM SW EXCEPTION REPORT
LTC 0  UNIT 0 :  Inact
TASKID:  00170017 SYNC, TIME:  00:01:32.88, COMID:  FF NILC
TEXT:  Big_sync_hit 00 50
```

Logs for the RCU

IOAU106 (node C-side link P-side status error)

When the system generates log IOAU106, the system indicates the P-bit of the message link table does not agree with the status of the RCU. The P-bit does not agree with the status of the RCU recorded in the node status table.

IOAU108 (node status error)

The log subsystem generates this report when an RCU audit detects a node status error. The C-bit of the RCU node table does not agree with the status of the DS-1 link. The C-bit does not agree with the status of the DS-1 link recorded in the message link table. The DMS-100 switch updates the RCU information to agree with the CC information.

PM102 (unsolicited messages)

The RCU subsystem generates report PM102 when the RCU generates 200 or more messages that are not solicited in 10 min. The RCU subsystem also generates this log when the RCU initializes 20 times or more in 10 min. The CC sets the RCU SysB when these events occur.

```
PM102 DEC09 08:29:27 7165 SYSB RCU REM1 04 0 FROM:  ISTb
Unsolicited Message Threshold Exceeded
```

The RCU subsystem generates PM120 when the RCU sends 200 or more messages that are not solicited to the SMU. The CC sets the RCU SysB. The state of the RCU before the change is InSv or ISTb.

Unsolicited messages are normally alarms. Verify the log reports to determine which alarms occur. Refer to *SMU Maintenance Manual* for RCU fault clearing procedures. Correct the fault to clear coded alarms. Enter the PMRESET command.

```
PM102 DEC09 08:29:27 7165 SYSB RCU REM1 04 0 FROM:  ISTb
Initialization Threshold Exceeded
```

The RCU subsystem generates PM120 when the RCU sends 20 or more initialization messages to the SMU. The CC sets the RCU SysB. The state of the RCU before the change is InSv or ISTb.

To clear this condition, ManB and RTS the RCU. If this action does not correct the fault, check for alarms and log reports.

PM106 (RCU alarms cleared or initialization complete)

The RCU subsystem generates report PM106 logs when RCU alarms clear or initialization completes.

```
PM106 DEC09 08:29:27 7165 RTS RCU REM1 04 0 FROM:  ISTb
Initialization Complete: Backup Switchover
```

The RCU subsystem generates PM106 when a backup switchover initialization completes. Other types of initialization are cold start, warm start, and interterminal reset. The RCU can be InSv or ISTb when initialization occurs.

```
PM106 DEC09 08:29:27 7165 RTS RCU REM1 04 0 FROM:  ISTb
REASON: alarm clear, major, code=185 CP bus error: no backup
```

The RCU subsystem generates PM106 when the coded alarm 185 clears and other alarms are missing at the RCU. If an alarm clears and other alarms continue at the RCU, the RCU remains ISTb. The descriptions of alarms for PM128 logs apply to PM106 logs. Refer to the section on PM128 logs in this chapter for a description of RCU alarms.

PM114 (no initialization warning)

The RCU subsystem generates PM114 logs when the SMU receives an initialization complete message from the RCU. The SMU does not receive an initialization warning message before the initialization complete message. The system also generates PM114 when the SMU receives an initialization warning message, and an initialization complete message does not follow.

```
PM114 DEC09 08:29:27 7165 TBL RCU REM1 04 0
REASON:  no initialization warning received
```

The RCU subsystem generates this log when the RCU sends an initialization complete message to the SMU. An initialization warning message does not precede the initialization complete message.

```
PM114 DEC09 08:29:27 7165 TBL RCU REM1 04 0
REASON:  no initialization complete received
```

The RCU subsystem generates this report when the RCU sends the SMU an initialization warning message. The RCU does not follow the warning message with an initialization complete message.

PM114 (RCU failed to RTS)

The subsystem generates report PM114 when an RCU fails to RTS. The following example indicates the RCU fails to reset during the RTS sequence. The reset fails after the SMU sends the RCU a reset message.

```
PM114 JAN09 17:45:29  5685  TBL  RCU REM1 04 0
REASON:  failed to reset
```

Other reasons can cause the RCU can fail to RTS. The following text strings can appear as part of a PM114 log when the RCU fails to RTS:

- `FAILED TO MTCOPEN BOTH LINKS` indicates that messaging cannot be established with the RCU.
- `RTS LINES FAILED` indicates that subscriber lines that the RCU supports cannot RTS.
- `NO RESPONSE FROM PP` indicates that the RCU does not respond to the SMU.
- `PP WAIT FOR ACK TIMEOUT` indicates that the SMU does not acknowledge a CC message.

PM128 (various alarms)

The RCU subsystem generates PM128 logs when an RCU initializes or when an alarm occurs at a RCU.

```
PM128 DEC09 08:29:27 7165 TBL ISTB RCU REM1 04 0 FROM:  INSV
                  Initialization Warning
```

The RCU subsystem generates this log when an RCU initializes. The RCU is ISTb or InSv before the CC sets the RCU ISTb.

```
PM128 DEC09 08:29:27 7165 TBL ISTB RCU REM1 04 0 FROM:  INSV
REASON: alarm set, minor, shlf/slt = 5,15 Line Card 5 Failure
```

The RCU subsystem generates report PM128 when a minor or major alarm occurs at the RCU. An alarm at the RCU causes the CC to set the RCU ISTb. The RCU subsystem generates the log in the above example when a problem occurs for a whole line card carrier. The line card carrier occupies shelf 5 (line

shelf 1), slot 15. The RCU can be ISTb or InSv before the CC sets the RCU InSv.

The log report format PM128 is as follows. In this example, an alarm is present for an RCU and the report identifies the location of the RCU.

```
PM128 mmdd hh:mm:ss  ssdd TBL ISTB pmid
 FROM:  prestat alarmtxt1
 opttxt1
 remote alarm alarmtxt2
```

An example of log report PM128 with the location identified for the defective RCU follows:

```
* PM128 MAY18 16:55:59 8300 TBL ISTB RCU RCU1 01 0
  FROM:  ISTb  Min code=5 Digital line failure
  LOCATION: 35 DAVIS DRIVE RTP
  remote alarm received
```

The PM128 logs display the location of the alarm or an alarm code. Shelf and slot information, with a short description accompany alarm types 1 through 6. A three-digit code and a short description accompany alarm types 7 and 8.

The following list displays examples of alarm descriptions that can accompany PM128 logs:

- line card 1 failure—the top FXB line card in a line card carrier fails.
- line card 2 failure—the FXB line card next to the top in a line card carrier fails.
- line card 3 failure—the third FXB line card in a line card carrier fails.
- line card 4 failure—the bottom FXB line card in a line card carrier fails.
- line card carrier failure—all line cards in a line card carrier fail.
- switch card failure—the switch card, one of the CE cards, failed. Refer to the notes that follow this list.
- configuration failure—hardware present on the RCU does not match entries in table RCUINV.
- digital line failure 001—the DS-1 line that connects to line shelf 1 fails. Refer to notes 1 and 2 that follow this list.
- no working ring generator—coded alarm 159 does not occur. If alarm 159 does not occur, the RCU lost ringing capability. Refer to notes 1 and 2 that follow this list.

Note: The system generates a PM128 log when a card fails.

The system generates a PM128 log when one or more or the following CE cards fail:

- supervisory
- switch
- CP
- MP
- LTA
- maintenance
- power converter
- timing
- ring generator
- control extension

Note: The system connects specfied lines to specified shelves.

The system connects shelves to the following lines:

- line shelf 1 connects to DS-1 lines 001 and 002
- control shelf 1 connects to DS-1 lines 003 and 004
- line shelf 2 connects to DS-1 lines 005 and 006
- control shelf 2 connects to DS-1 lines 007 and 008

To clear configuration alarms, change entries to match current hardware on the RCU or change hardware on the RCU to match entries. Correct the problem. Enter the PMRESET command to clear coded alarms.

PM181 (RCU system audits/24-hour switchover)

The log subsystem generates input/output audit (IOAU) and PM log reports during 24 h switchover. The subsystem also generates these logs when RCU audits detect differences between CC records and CC and SMU records. The following section describes these log reports. For additional information, refer to the *Log Report Reference Manua*l.

The PM subsystem generates report PM181 when the CC and SMU contain different status information on an RCU. The subsystem generates PM181 when the CC and SMU contain different status information on the DS-1 links of the C-side. The subsystem also generates PM181 when a 24 h switchover

starts, ends, or fails. The subsystem also generates PM181 when the RCU maintenance flag is set and must not be reset.

The five strings that accompany a PM181 log are as follows:

- `24-HOUR SWITCHOVER INITIATED.`
- `24-HOUR SWITCHOVER COMPLETED.`
- `SWITCHOVER TIMEOUT WAITING FOR REPLY.` This string appears when the RCU fails to return a reply to the SMU 24 h switchover request. The switchover fails.
- `NODE STATUS MISMATCH.` This string occurs when an RCU audit detects differences between CC and SMU records. The records indicate the status of the RCU or the C-side links (DS-1 links).
- `RCU NODE STATUS FLAG CLEARED.` The maintenance flag is set when a process, like busying the RCU, continues at the RCU. When the flag is set, make sure the RCU is not available for another task until the current task finishes. An RCU audit checks the maintenance flag and current processes at the RCU. If process is not current at the RCU, but the flag is set, the audit clears the flag.

`NODE STATUS MISMATCH, RCU NODE STATUS FLAG CLEARED` and `SWITCHOVER TIMEOUT WAITING FOR REPLY` indicate problems in the DMS-100 switch. The system corrects a node status mismatch, and corrects SMU records so that the records agree with CC records. The system also clears the maintenance flag for a node status flag that is set in error.

If the RCU fails to reply to an SMU 24 h switchover request, the SMU attempts to transfer the message again. If the RCU fails to reply again, the log subsystem generates a PM181 log.

PM181 (link status error)

The log subsystem generates this report when an RCU audit detects a link status error. The P-bit of the message link table does not agree with the status of the RCU recorded in the RCU node status table. The DMS-100 switch updates the P-bit to agree with the status recorded in the RCU node status table.

PM181 (automatic system test)

The AST operations cause the system to generate PM181 log reports.

```
181 DEC09 08:29:27 7165 INFO RCU0 00 0
AST line testing initiated from MAP
```

This log indicates when entry of the command TST at the MAP terminal initiates enhanced testing. An entry of Y in the AUTOTEST field in Table

RCUINV allows enhanced testing. An entry of N in this field and table indicates that basic testing is allowed. The AST can be initiated from the RCU.

```
PM181 DEC09 08:29:27 7165 INFO RCU0 00 0
AST line testing aborted from MAP
```

This log indicates the command string TST ABORTLNTST, issued from the MAP terminal during enhanced testing, is normal.

```
PM181 DEC09 08:29:27 7165 INFO RCU0 00 0
AST line testing aborted from RCU
```

This log indicates the EXEC button on the faceplate of the maintenance card at the RCU was pressed. This action aborts enhanced line testing.

Logs related to the carrier system

PM109

The system generates report PM109 when loss of frame on the DS-1 link between the SMU and the RCU occurs. The system generates PM109 when RCU digroup card fails or is removed. The system also generates PM109 generates when bipolar violations can occurs toward the RCU. These events cause a local carrier group, alarm (LCGA) toward the SMU, remote carrier group alarm (RCGA) toward the RCU or a local and remote alarm (LAR) toward the SMU and RCU. The DS-1 link is removed from service. An example appears in the following MAP display.

```
PM109 MAY28  23:23:21  0011  PBSY CARRIER SMU 60
CARRIER-NO: 3, REASON: CARRIER LOCAL ALARM SET
```

PM110

In the following MAP display, the BpV maintenance limit is set. The limit is 1 BpV error in 1 000 000 bits. The BpVs that exceed the limit on a link signal that the link deteriorates. The BpV field at the CARRIER level of the MAP display shows the indicator ML (maintenance limit) near the link with problems. Defective repeaters at the central office (CO), RCU, or DS-1 link, digroup cards, SMU DS-1 interface cards, or outside interference can cause BpVs.

```
PM110 MAY28  23:23:21  0011  INFO CARRIER SMU 60
P-side
CARRIER-NO: 3, REASON: CARRIER BPV MTCE LIMIT SET
```

In the following MAP display, the loss of frame maintenance limit is set. This variable limit is set in Table CARRMTC.

```
CARRIER LOF MTCE LIMIT SET
```

In the following MAP display, the slip maintenance limit is set. This variable limit is set in Table CARRMTC. The SMU detects slips, the RCU does not detect slips. When an excess of slips occur at the maintenance limit, the SLIP field on CARRIER-level MAP display shows the indicator ML near the link that has slips. Lack of synchronization between system clocks causes slips. Slips can accompany other DS-1 link faults.

```
CARRIER SLIP MTCE LIMIT SET
```

PM183

In the following MAP display, a DS-1 link is system busy. The following events can cause a DS-1 link to be system busy:

- steady frame loss
- too many BpVs or frame losses
- removal or failure of the SMU DS-1 interface card
- removal or failure of the RCU digroup card
- PCM loopback test failure

```
PM183 MAY28 23:23:21 0011 SysB SMU 60  P-side Link: 5,
 FROM: InSv
```

Logs for the lines subsystem

ALT101

The system generates log report ALT101 when the extended diagnostic fails. The system activates the extended diagnostic from the ALT level of the MAP display. Like LINE101, ALT101 contains text in the fields Diagnostic Result, Action Required, and Card Type. These fields are different in the SMU-RCU subsystem. This text for diagnostics that the system aborts is the same as the description for the LINE101 log report.

LINE101

The system generates report LINE101 when an extended diagnostic fails or aborts. The user activates the diagnostic at the LTP level of the MAP display. Text different to the SMU-RCU subsystem can appear after the Diagnostic Result, Action Required, and Card Type fields.

The TTU can detect line card failures during subtests of the diagnostic scheduled from the LTP level of the MAP display. The subtests are carrier channel loss, echo return loss, and noise. When the TTU detects a fault during these tests, one of the following text strings appears. The strings appear after field Diagnostic Result in the LINE101 log:

- `xxxx xxxx xxxx xxxx Channel Loss`
- `xxxx xxxx xxxx xxxx Echo Return Loss`

- `Noise Level xxxx DB Notch Noise`
- `Noise Level xxxx DB Weight Noise`

The `xxxx` strings for channel loss and echo return loss that represent four different frequencies. The `xxxx` strings for dB notch noise and dB weight noise represent dB measurements.

When a problem occurs that the TTU does not detect, the text that follows Diagnostic Result indicates the result and reason. The possible results are Test Aborted and Test Failed.

The possible reasons for Test Aborted are as follows:

- maintenance bus unavailable
- no maintenance card
- no line card
- no LTA card
- local testing active
- bypass active
- jack access active
- PM not ready
- messaging inhibited
- no SMU P-side channel
- PM reply timeout
- unexpected PM reply
- software error
- suspected LCC fault
- audit in progress

The possible reasons for Test Failed are as follows:

- single-end
- off-hook
- on-hook
- single-party ringing
- echo return loss
- carrier channel loss
- idle channel noise

- tip ringing, ANI ground
- coin collect
- positive coin off-hook
- coin presence
- reverse battery
- coin return
- negative coin off-hook

One of the following text strings follows the Action Required field:

- `Try Again`
- `Replace Card`
- `Check PM`
- `Consult Logs`

The text `Try Again` appears when the test aborts for one of the following reasons:

- local testing active
- bypass active
- jack access active
- PM not ready
- messaging inhibited
- no SMU P-side channel

The switch operator must try the test again.

When the diagnostic fails, the text `Replace Card` appears. This text indicates that the switch operator must replace the line card that undergoes tests. Replace Card also appears in the log when the test aborts because of the following:

- maintenance card is not present
- line card is not present
- LTA card is not present

The text `Check PM` is output when the test is aborted for one of the following reasons:

- maintenance bus not available
- PM reply timeout
- unexpected PM reply

The switch operator must check the RCU cards and the maintenance bus for correct operation.

The text `Consult Logs` appears when software errors occur. The switch operator must consult the *Log Report Reference Manual* for descriptions of log reports.

PM180

The system generates report PM180 when a metal bypass is active for more than 5 min. An example of log PM180 follows:

```
PM180  MAY30 15:16:27  8040  TBL  PM EXCEPTION REPORT
SMU 60 Unit 0 : Act
TASKID: 00390039 LTTSK, TIME: 15:16:26.25, COMID:  FF NILCID
TEXT: Bypass for 5 min.  1C 13 00 23 00 02 00 1F 00 00
```

Note: The specified command entered determines the text for this log. For example, the text for the JACK command is `JK BP for 5 min.`

Logs for special service cards

PM128 and PM106

When a special service line card fails or is removed, a type 1, 2, 3, or 4 line card alarm occurs. A type 1 alarm occurs when the top card in the line card carrier fails or is removed. Types 2, 3, and 4 alarms occur for failed or missing cards in positions that descend on the line card carrier. Card 4 is the bottom card. The system generates a type 6 alarm when the system detects a configuration mismatch.

When the special services line cards are configured, the following messages can appear in PM128 and PM106 logs:

- PM128 (alarm is set)
  - — `LINE CARD n REFRESH FAILURE`
    - – The line card cannot be supplied.
  - — `LINE CARD n FAILURE, CGA SET`
    - – A loop signal alarm or carrier group alarm is present.
  - — `LINE CARD n PROVISIONING INCOMPATIBILITY`
    - – The type of service does not match the line card inserted.
  - — `LINE CARD n DOES NOT MATCH CARDCODE`
    - – The entered CARDCODE and the actual card do not match.
  - — `LINE CARD n MISSING`
    - – A line card or line card carrier is missing in the position that is supplied.
  - — `LINE CARD n SIGNALING MODULE MISSING`
    - – The 7A20AA or 7A21AA is supplied for external receive and transmit signaling (E&M), pulse link repeater (PLR), or TANDEM. A 7A22AA card (signaling module) is missing in the next (odd) line card position.
  - — `LINE CARD CARRIER MISSING`
    - – A line is supplied, but the line card carrier is missing.
  - — `INVALID LINE CARD CARRIER PRESENT`
    - – A line is supplied, but an invalid line card carrier is present.
- PM106 (alarm clears)
  - — The PM106 has the same text messages as the PM106. The system generates report PM106 when the remote alarms clear.

Special service special connection (SCSS) logs

Details on five-key special connection special service (SCSS) log reports used with special-service connections follow. The system generates logs SCSS100 through SCSS103 when one of the following occurs:

- A special-service is added to or deleted from SMU connection information. If the SMU is out-of-service, the system does not generate a log. When the SMU is RTS, the system generates two logs. The system generates one log when the system adds the connection. The system

generates the second log when the status of the connection changes from inactive to active.

- The status of the special-service connection changes
- The connection type, trunk conditioning type and data, attenuation, or RCU to subscriber side supervisory signaling changes
- The CC audit corrects invalid SMU or RCU time switch connection

SCSS100

The SCSS subsystem generates report SCSS100 when the user adds or deletes connection data for an SMU special-service connection from an in-service SMU. The user can add or delete a connected (CON) or connected with A- and B-bits (CAB) connection in Table SPECCONN. The user can also change the connection type for PEND to CON or CAB or from CON or CAB to PEND.

The system also generates SCSS100 when the CC special-service connection audit adds or deletes a connection in the SMU. The SMU must be in-service for the system to generate this log.

```
SCSS100  DEC15  15:30:00  1234  INFO
SMU 0 SPEC CONN TUPLE Add
Reason:Manual
EndPt1:RCUL REM1 3 2 2 10 VN 1010 0 ON
EndPt2:RCUL REM1 1 3 4 6  VN 1010 0 ON
ConType:CAB
Status:InActive
```

There is no action required when manual addition or deletion of a special-service connection causes the system to generate SCSS100.

The system can generate SCSS100 often. The reason text can be the system when a CC audit causes the system to generate this log. When these events occur, contact the next level of maintenance. The CC audit detects differences between internal CC and SMU records for special-service connections.

If the action field is DEL, make sure a connection is missing in Table SPECCONN. If a connection is missing in Table SPECCONN, contact the next level of maintenance.

SCSS101

The SCSS subsystem generates report SCSS101 when the status of an SMU special-service connection changes. The subsystem can generate SCSS101 when the CC special connection audit updates the status in Table SPECCONN. The system does not generate this log when an SMU goes out-of-service. The system drops all connections on the SMU. The system generates a PM log.

```
SCSS101  DEC15  15:30:00  1234  INFO
SMU 0 SPEC CONN STATUS CHANGE
Reason:RT faceplate activity completed
EndPt1:RCUL REM1 3 2 11 2 VN 0000 2 ON
EndPt2:DS0T SMU  0 11 1   VN 1010
ConType:CAB
Status:InActive FROM MTC
```

There is no action required for this log unless the reason `Matched CC to Peripheral` or `Pending Connection Type` occurs often. The connections on hold on an in-service SMU must be inactive. Action is required when an alarm occurs that causes the connection to shut down. The first two reasons indicate the CC audit must correct the connection status in Table SPECCONN.

If a CC audit causes the system to generate the log often, contact the next level of maintenance. If an alarm causes the connection to become out-of-service, refer to the *SMU Maintenance Manual* for procedures to clear problems.

SCSS102

The SCSS subsystem generates this report when a CC audit updates the SMU connection information to match CC connection data. The CC audit updates one of the following in the SMU:

- connection type
- trunk conditioning type
- trunk conditioning data
- attenuation
- the RCU to subscriber supervisory signaling
- the C-side channel information

```
SCSS102  DEC15  15:30:00  1234  INFO
SMU 0 SPEC CONN DATA CHANGE
Reason:Trunk Conditioning Type: Matched Peripheral to CC
EndPt1:DS0T SMU 2 5 6 DT
EndPt2:DS0T SMU 2 9 1 DT
ConType:CON
Status:Active
```

If the system generates this log often, contact the next level of maintenance. This log indicates that differences are present between internal CC and SMU records for special service connections.

SCSS103

The SCSS subsystem generates report SCSS103 when the SMU has correct connection data, and the SMU timeswitch connection is not correct. The subsystem also generates SCSS103 after an SMU warm SWACT, when the RCU timeswitch is not correct. The CC audit causes the SMU to correct the SMU timeswitch connection.

If the RCU timeswitch is not correct, the SMU sends a message to the RCU after a warm SWACT. The SMU sends the message to correct the RCU timeswitch connection.

```
SCSS103  DEC15  15:30:00  1234  INFO
SMU 0 SPEC CONN TIMESWITCH
Reason:Host Peripheral
EndPt1:DS0T SMU 1 2 33    VN 0010
EndPt1:DS0T SMU 1 2 33    VN 0010
EndPt2:RCUL REM1 0 0 0 1  VN 1010 4 OFF
ConType:CAB
Status:Active
```

There is no action required when the reason for this log is manual addition or deletion of a special-service connection. If the system generates this log often, contact the next level of maintenance.

SCSS104

Log report SCSS104 provides information on special connections for virtual endpoints of ISDN and MBS lines. The SCSS subsystem generates report SCSS104 when one or more of the following conditions occurs:

- a tuple is added in Tables LNINV or SPECCONN to establish a virtual endpoint connection.
- a virtual connection becomes active when the SMU and RCU are in-service
- successful reassignment of a virtual endpoint connection
- all channels are busy during a channel reassignment attempt
- the system blocks messages during a channel reassignment attempt
- an alarm condition at the RCU causes a virtual endpoint to become out-of-service

> ***Note:*** The system does not generate SCSS104 logs when the SMU or RCU goes out-of-service or RTS.

An example of log SCSS104 follows:

```
SCSS104 DEC03 15:42:10 4261 INFO
SMU 0 SPEC CONN Virtual Endpoint Connection Info
VEP    : 5
Reason : Connected to pside port 13 channel 4
Endpt1 : ISLC RCU0 0 0 0 16 B1
Endpt2 : DS1 SMU 0 4 5
ConType: CAB
Status : Active
```

The system generates this log to indicate operational changes and does not require action. An all-channels busy condition or a message inhibiting condition prevents the connection of virtual endpoints, the system connects the virtual endpoints. The system connects the endpoints when resources become available.

Logs for the special service module (SSM) configuration

Log reports that associate with SSM channel units follow.

LINE100

The PM log subsystem generates report PM100 log when a diagnostic test. The user activates the diagnostic test with the DIAG command at the LTP level. The diagnostic test passes.

```
LINE100 DEC09 08:29:27  PASS LN_DIAG
LEN REM1 00 0 17 20  NO DIRN
DIAGNOSTIC RESULT  Card Diagnostic OK
ACTION REQUIRED  None
CARD TYPE  SSM4WV
```

Log report LINE100 indicates a diagnostic test from the LTP level on the channel unit that has a line equipment number (LEN) of REM1 00 0 17 20 passes. The line subgroup (LSG) is 17, the second to last number in the LEN. The line subgroup is SSM 1 on shelf 6. The circuit of the LEN is 20, which corresponds to channel unit 21 on the shelf. Channel units do not have directory numbers, so NO_DIRN appears in this log.

LINE101

The PM log subsystem generates report PM101. The user activates the diagnostic test the DIAG command at the LTP level. The diagnostic test fails.

```
LINE101 DEC09 08:29:27  FAIL LN_DIAG
LEN REM1 00 0 17 20  NO DIRN
DIAGNOSTIC RESULT  Test failed Bus Extender
ACTION REQUIRED  Replace card
CARD TYPE  SSM4WV
```

The diagnostic test can fail the pulse amplitude modulation (PAM) loopback or bus extender loopback tests. Cards types are SSM4WV, SSM4WD, SSM2WV, and QPP628.

PM106

The PM log subsystem generates report PM106. The subsystem generates PM106 when an alarm clears on an RCU and alarms are not present on the RCU. If alarms are present, the system generates a PM128 log. An example of a PM106 log follows:

```
PM106  DEC09 08:29:27  7555 RTS RCU REM1 04 0 FROM: ISTB
Min  loc=7, 21  SSM Channel unit mismatch
remote alarm cleared
```

Log report PM106 indicates that a mismatch was present between entries on the SSM shelf for channel unit 21 on shelf 7. The mismatch was corrected. The location (loc) specifies the shelf, 7 in this log report. The channel unit is 21 in PM106. For additional information, refer to the *Log Report Reference Manual*.

PM128

The PM log subsystem generates report PM128 when problems affect the SMU-RCU subsystem. The SSM alarms are examples of problems that can cause the subsystem to generate PM128. An example of a PM128 log follows:

```
PM128  DEC09 08:29:27  7555 TBL ISTB RCU REM1 04 0 FROM: INSV
Min  loc=6, 15  SSM Channel unit mismatch
remote alarm received
```

Log report PM128 indicates a mismatch was present between entries on the SSM shelf for channel unit 15 on shelf 6. The location (loc) specifies first the shelf (6 in this log report) and the channel unit (15 in this log report). For additional information on PM128 logs, refer to *Log Report Reference Manual*.

PM230

The PM log subsystem generates report PM230. The subsystem generates PM230 when an alarm occurs or clears on an RCU that affects SSM channel units or line cards.

```
PM230  DEC09 08:29:27  7555 INFO PP_LINES_ACTION
RCU RCU0 04 0
REASON:  remote alarm cleared
lines lmb: shelf= 6  slot=17
```

This report indicates an alarm clears affects the state of the SSM channel unit on shelf 6. The channel unit is number 17. A PM230 log accompanies a

PM106 or PM128 log. These logs indicate the alarm that affects the channel unit or line card.

Using tuple change log reports

The system generates tuple change (TUPC) logs when track changes occur in tables. Use these log records to solve field problems. The TUPC100 log records tuple additions. The TUPC101 log records tuple deletion. The TUPC102 log displays the tuple that was present before the tuple changes. The TUPC103 log displays the new tuple after the tuple changes. An example of each log report header follows.

TUPC100—tuple added log

The following is an example of a TUPC100 log report header:

```
TUPC100 01:12:00  1000    INFO  TUPLE ADDED
TABLE: LTCINV
  <tuple that was added>
```

TUPC101—tuple deleted log

The following is an example of a TUPC101 log report header:

```
TUPC101 01:12:00  1000    INFO  TUPLE DELETED
TABLE: LTCINV
  <tuple that was deleted>
```

TUPC102—tuple changed from log

The following is an example of a TUPC102 log report header:

```
TUPC102 01:12:00  1000    INFO  TUPLE CHANGED FROM
TABLE: LTCPSINV
  <old tuple>
```

TUPC103—tuple changed to log

The following is an example of a TUPC103 log report header:

```
TUPC103 01:12:00  1000    INFO  TUPLE CHANGED TO
TABLE: LTCPSINV
  <new tuple>
```

7 SMA related logs

Subscriber Carrier Module-100 Access related logs

The output reporting system generates many log reports. Since it is normally not economically feasible to have a printer for each log type, and because the system generates the log reports in real time, all log reports are intermingled on the log device.

Monitoring the printer for background information that may have occurred hours before a particular event is difficult. Therefore, it becomes essential to use the individual subsystem buffers where log reports of the same log type can be viewed.

For example, if a fault has occurred in Subscriber Carrier Module-100 Access (SMA) 0, maintenance personnel may want to dump the contents of the peripheral module (PM) subsystem logs, and scan those logs for any information relative to SMA 0. This action would provide the necessary background information to help isolate the fault.

Logs associated with the SMA

The following table lists log reports useful in the maintenance of the SMA. Each log report is listed along with its possible causes and an appropriate action by operating company personnel.

Note: Remote digital terminal (RDT) is a generic term. A specific type of RDT is the S/DMS AccessNode remote fiber terminal (RFT). In an integrated S/DMS AccessNode configuration, the term RDT always means RFT.

Table 7-1 SMA related logs (Sheet 1 of 6)

Log name	Causes	What to do
NAG400	Hourly, under the control of the NAG command. Lists information including REX results, about all nodes not in-service.	Depending on review of the log report, operating company personnel should take the necessary steps to return the node to service, or have the node REX enabled, if appropriate to do so.
PCH350	This log is inactive. When activated, this log will indicate that loadfile patching has failed.	This information log provides the information necessary to analyze the problem and take corrective action. Such actions include: downloading or locating missing patch files which are necessary to build the patched loadfile, providing necessary disk space for the loadfile.
PCH650	This log is inactive. When activated, this log will indicate that loadfile patching was successful.	Information only
PM102	SMA set to system busy (SysB).	Determine reason, perform test, replace faulty cards, and return SMA to service.
PM103	Generated when a new IDT has been added, and indicates the IDT went from UNEQUIP to OFFL.	Information only
PM104	Generated when an IDT has been deleted.	Information only
PM107	SMA changed to C-side busy (CBsy) state by system or manual request.	If system requested, determine reason, perform test, replace faulty cards, and return PM to service.
PM108	Firmware or hardware error in peripheral processor (PP).	No action required if generated for less than 2 minutes. If generated for more than 2 minutes or if diagnostics fail, perform test, replace faulty cards, and return PM to service.
PM109	DS-1 link set to SysB due to frame loss or excessive bipolar violations. Also accompanied by carrier group alarms.	No action required if generated for less than 2 minutes; otherwise, check for faults at remote fiber terminal (RFT) then at SMA.

Table 7-1 SMA related logs (Sheet 2 of 6)

Log name	Causes	What to do
PM110	Bipolar violations (BpV), frame loss, or frame slip thresholds exceeded. Also generated when these levels fall below threshold limits.	No action required if levels return to normal; otherwise, check for faults at RFT then at SMA.
PM114	Trouble encountered during maintenance actions such as load, test, initialization, or return to service.	Determine reason, replace faulty cards, and return SMA to service.
PM128	SMA or SMA unit encountered trouble during normal operation. Specific examples follow:	No action required if system recovers. If system cannot recover, PM102 is generated.
	CLASS modem resource (CMR) card faulty or CMR load mismatch.	Busy unit, replace CMR card if faulty, reload, and return unit to service.
	Hard parity fault	Busy unit, replace card in list, reload, and return to service.
	State of the two units changed because of a REX test failure.	Investigate the PM600 log for reasons for the REX failure.
	REX test passed.	Information only
	Diagnostic TESTALL fails.	Information only
	REX warm SwAct has occurred.	Information only
	SwAct controller override occurred, failed, failed with a SwAct back to the originally active unit, or was aborted.	Information only
PM180	Encountered SMA software exception (improper execution of software).	Used by software experts to troubleshoot software defects if they exist. Retain log report for trend analysis.
PM181	Hard parity fault	Busy unit, replace card in list, reload, and return to service.
	Soft, intermittent parity faults	No action required if both units are in service (CC brings in-service trouble (ISTb) unit back to service). Otherwise, busy unit, reload, and return to service.
	CMR card fault	Busy unit, replace card in list, reload if necessary, and return unit to service.
	Faulty common controller cards in SMA.	Busy unit, replace CMR card if faulty, reload, and return unit to service.

Table 7-1 SMA related logs (Sheet 3 of 6)

Log name	Causes	What to do
PM183	PM P-side link changed to SysB.	Verify that SMA DS-1 interface cards are functioning properly. Test link with SMA posted at PM level or with links posted at carrier level.
PM185	Error condition detected by firmware, hardware, or software causing trap interrupt.	Used by software experts to troubleshoot software defects if they exist. Retain this report and accompanying reports for trend analysis.
PM186	Maintenance limit or out-of-service limit exceeded on DS-1 links.	No action required if levels return to normal. Otherwise, check for faults at RFT then at SMA.
PM189	Parity audit failure due to a hardware fault.	If accompanied by PM181, replace card listed, reload unit, and return to service. If log indicates software program fault, reload unit, and return to service.
PM190	Enhanced D-channel handler (EDCH) changes state to SysB due to fault detected in the EDCH.	Services defined by the ISDN service group (ISG) are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it, and if necessary, do the same on subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.
PM191	EDCH changes state to ManB due to manual request.	Information only
PM192	C-side node of EDCH is removed from service.	EDCH should recover without manual intervention once the C-side node is returned to service.
PM193	EDCH is placed in Offl state.	Information only
PM194	EDCH encounters trouble during normal operation and changes state from InSv to ISTb.	System may recover on its own; otherwise, PM190 is generated. Respond as indicated in PM190 log.
PM195	EDCH is returned to service either manually or by the system.	Information only
PM196	EDCH is removed from table DCHINV.	Information only

Table 7-1 SMA related logs (Sheet 4 of 6)

Log name	Causes	What to do
PM198	EDCH sends unsolicited message containing valid fault condition that is not service affecting.	Services defined by ISG are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it, and if necessary, do the same on subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.
PM199	EDCH completes a system diagnostic test.	Nothing if test passes; otherwise, services defined by the ISG are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it and, if necessary, do the same on subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.
PM200	Indicates an attempt to load an EDCH.	Nothing if test passes. Otherwise, services defined by the ISG are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it and, if necessary, do the same on subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.
PM235	EDCH takeover has occurred.	The source and destination EDCHs are identified along with the ISG. No response is required if takeover is successful. If takeover fails, destination EDCH is set to SysB and PM190 is generated. Respond as indicated in PM190 log.
PM270	EDCH is congested or EDCH congestion is cleared.	Information only
PM600	REX fail reasons	PM600 records the maintenance actions performed on the XPM during the failed REX, from the start of the REX to the step that failed. This information can be used to pinpoint the source of the REX failure.
	warm SwAct	
	warm SwAct turned off	

Table 7-1 SMA related logs (Sheet 5 of 6)

Log name	Causes	What to do
	pre-SwAct audit failure	
	autonomous SwAct	
	OOS tests of inactive unit 0	
	OOS tests of inactive unit 1	
	RTS of inactive unit 0	
	RTS of inactive unit 1	
	achieving superframe/data sync of unit 0	
	achieving superframe/data sync of unit 1	
	InSv tests of inactive unit 0 before SwAct	
	InSv tests of inactive unit 1 before SwAct	
	InSv tests of active unit 0 after SwAct	
	InSv tests of active unit 1 after SwAct	
	InSv tests of inactive unit 0 after SwAct	
	InSv tests of inactive unit 1 after SwAct	
	RTS of inactive unit 0 after SwAct	
	RTS of inactive unit 1 after SwAct	
	achieving superframe/data sync of unit 0 after SwAct	
	achieving superframe/data sync of unit 1 after SwAct	
	SwAct to unit 0 refused by SwAct controller	
	SwAct to unit 1 refused by SwAct controller	

Table 7-1 SMA related logs (Sheet 6 of 6)

Log name	Causes	What to do
	SwAct back to unit 0 occurred	
	SwAct back to unit 1 occurred	
	recovery failed—SwAct	
PM601	Generated when operating company personnel reset long-term failure counters to zero for a XPM posted at the MAP terminal. Also generated when a XPM is deleted from datafill.	This log is an information log and should be kept in a form that can be passed on for analysis to the Technical Assistance Service (TAS) and field support organizations in the event of a later outage.
PM777	NT6X69 message card failed to reset or failed to acknowledge first handshake.	Busy unit, replace card, reload and return to service.
	Intermodule communication (IMC) link fault.	Isolate fault to NT6X69 or NTMX77; then busy unit, replace card, reload, and return to service.
	Invalid card under test.	Ensure all cards in PM are in correct slots.
	Memory parity fault.	Isolate fault to NTMX77. Then busy unit, replace card, reload, and return to service.

PCH350 log report

This log is inactive. When activated, the PCH350 log will be output when XPM loadfile patching has failed. The reason for the failure is provided in the log report. Also included are the name of the XPM pmload (from table PMLOADS) associated with the loadfile patch session and the loadfile initiation reason (manual or system). An example of a PCH350 log report follows.

```
PCH350 OCT31 11:59:59 FAIL Loadfile Patch Failure
Start Time: 1993/10/31 11:13:09 End Time: 1993/10/31 11:14:09
Pmload:  NLG36BD
Reason:  System
Patch file not found for:XAT09X36 SCH66X36 XKN83X36
```

PCH650 log report

This log is inactive. When activated, the PCH650 log will be output when XPM loadfile patching was successful. The log reports the names of the patches applied during the loadfile session, the name of the pmload, the name of the loadfile created during the loadfile patch session, the device used to store

the new loadfile, and the loadfile initiation reason (manual or system). The following is an example of a PCH650 log report:

```
PCH650 SEP07 09:58:19 5900 INFO Loadfile Patch Successful
Start Time: 1993/09/06 16:26:45 End Time: 1993/09/06 17:00:03
Pmload:  NLT36BD
Loadfile:  NLT36BD_930906
Reason:  Manual
Patches added to loadfile
 XDF30X36  XLD09X36  XNF34X36 XED47X36
Patches that could not be removed from the loadfile: XV94X36
```

Logs associated with the IDT

A key point to remember is an integrated digital terminal (IDT) is a logical entity rather than a component. Many of the logs associated with the IDT deal with the inability of the IDT to perform a software process. This is especially true in terms of the processing of maintenance channels.

PM102 - IDT goes SysB

This log is generated by the IDT subsystem when an IDT is removed from service by the system. An example of this log report follows. The messages possible with this log are listed in the table that follows the example.

```
PM102 JUL05 11:07:14 1990 SYSB IDT 12
FROM:  InSv
REASON:  Fault occurred on CSC/TMC chnls
```

Table 7-2 Overview of PM102 logs for the IDT

Message	Meaning	What to do
Fault occurred on CSC chnls	All common signaling channels (CSC) to a given IDT are removed from service or a logical link failure has occurred on the last in-service CSC.	Verify that associated facilities (SMA, DS-1s) are in service. Enter the CONT command at the IDT level to run the internal continuity test.
CC restart	The IDT or IDTs are SysB because of a S/DMS SuperNode reload or restart.	After the reload or restart, the IDT should return to service.

PM114 - failure of an IDT level command

The PM114 log is the most likely log to appear when there is a failure of an IDT level command. An example of log report follows. The table that follows gives the reasons for the log and what to do.

```
PM114 JUL05 11:07:14 7156 TBL IDT 6
REASON:  No response from PP
```

Table 7-3 Overview of PM114 logs for the IDT

Message	Meaning	What to do
Failed to mtcopen	Operation requests on the SMA P-side message DS-1s, associated with the corresponding IDT, have failed.	At the MAP terminal check the status of the SMA, the IDT, and the P-side message DS-1s. Check for other logs that may show the P-side message links have failed.
Return lines to service failed	A failure occurred during the lines return-to-service (RTS) phase of the IDT RTS. Despite this failure, the IDT will usually RTS.	There is an internal problem with the RTS process. Check for other logs.
RTS failed	Either the SMA is not responding, or responding incorrectly, to the RTS message for the IDT, or the DMS-Core is not succeeding in sending the RTS message.	Check the status of the SMA and the IDT C-side message links. There should be other logs, including PM180 software error (SWERR) logs.
No response from PP	The SMA is not responding to messages from the IDT.	Check for PM180 logs associated with the SMA.
Failed to get a route	Physically unable to find a route between the CM and SMA for messaging.	

PM128 - IDT goes ISTb

When the IDT goes in-service trouble (ISTb), alarms may be present at the remote fiber terminal (RFT). Another likely cause is a problem with the message channels. An example of a PM128 log follows. The table that follows lists the messages associated with these channels and the actions to take.

```
PM128 JUL05 11:07:14 1990 ISTB IDT 12
FROM:  InSv
REASON:  Fault occurred on the channel
```

Table 7-4 Overview of PM128 logs for the IDT (Sheet 1 of 2)

Message	Meaning	What to do
Fault occurred on the channel	This message can have a number of possible causes: • 1 of 2 CSCs has been removed from service. • Any embedded operations channel (EOC) is removed from service. • A logical link failure occurs on the CSC or CSCs. • A logical link failure occurs on the EOC or EOCs.	First, ensure the associated RFT is in service. Check the message links at the SMA level of the MAP terminal. If they are OK, go to the IDT level and check the status of the message links. If they are not OK, try to return them to service.
Maintenance connection not established	Operation, administration, maintenance, and provisioning messages cannot be sent over the EOC to the associated RDT.	An audit will try to correct the fault. If the EOCs are manually busy, return them to service.
CSC PNM overload	P-side node messaging traffic generated by the CSC is causing congestion within the enhanced ISDN signaling preprocessor (EISP).	Check for channel or logical link failures on the posted IDT and correct. If correction is not possible, manually busy the channel or logical link to prevent further resources from being used to maintain service on the channel or logical link. If no channel or logical link failures are found, the congestion may be caused by an engineering problem with the RDT.
EOC PNM overload	P-side node messaging (PNM) traffic generated by the EOC is causing congestion within the EISP.	See CSC PNM overload.

Table 7-4 Overview of PM128 logs for the IDT (Sheet 2 of 2)

Message	Meaning	What to do
PNM overload on SMA	SMA goes ISTb with the following reason: `P-side Node Messaging system overload`	Check for ISTb reasons of CSC or EOC messaging overload on any of the IDTs supported by the posted SMA. Perform recommended actions.
EOC database not synchronized	The EOC local object database does not contain the appropriate data for the corresponding RFT.	Check the RDTDN field in table RDTINV. It must match the distinguished name of the RFT. Also, check field LINKTAB in table RDTINV. Verify the configuration is correct.
RDT alarms present	Alarms exist at the RFT.	Clear alarms at the RFT.

PM181

A PM181 log is generated when

- there has been a problem while busying the IDT.
- the SMA detects faults in the EOC or CSC channel.
- a message channel has been manually busied.

An example of a PM181 log follows. The table that follows lists the messages associated with this log.

```
PM181 JUL05 11:07:14 1990 INFO IDT 0
Node Status Mismatch
```

Table 7-5 Overview of PM181 logs for the IDT

Message	Meaning	What to do
No response received to Bsy request	A timeout has occurred while the DMS-Core maintenance task was waiting for the reply from the SMA for the Bsy request.	Check the state of the SMA, the IDT, and the P-side message DS-1s. Check for other logs.
Failure reply received for Bsy request	The SMA has responded that a BSY request has failed. From the DMS switch viewpoint, the BSY request has passed.	Check for logs. When the IDT is returned to service, the problem should be resolved, or other failure messages should occur.
Node Status Mismatch	The DMS switch and SMA do not agree on the status of the IDT.	The system will recover from this fault.
Maintenance Connection: Permanent Rejection	An IDT nailup association over the EOC has been rejected. The S/DMS and RFT do not share the same association context. This could occur because of incompatible common management information protocol (CMIP), incompatible abstract names (ASN), incompatible application contexts, or other aspects of sharing an association.	The S/DMS or RFT must be updated with a load so they share the same association context. When this has been done, the S/DMS must perform a restart (which can be cold, warm or reload), or the associated RFT must be placed in an offline state or returned to at least the manual busy state. ***Note:*** Perform these actions only during a period of low traffic activity.
Path ManB - EOC2	One of the message channels was manually busied, and the associated IDT was in-service. The SMA is set to ISTb.	Return message channel to service.

Logs associated with the RDT

The following table lists the logs associated with the RDT.

Table 7-6 Logs associated with the RDT (Sheet 1 of 3)

Log	Meaning	Possible causes
ALT107	Connection failure for the ALT SDIAG command on AccessNode lines.	The metallic connection at the AccessNode was not available.
RDT300	This log is generated when the database audit process finds a mismatch between object data in the RDT and computing module (CM).	Data is corrupt. If object class is *equipment*, delete the IDT from table RDTINV, then redatafill it. ***Note:*** This action first requires deleting all lines associated with the IDT. For other object classes, post the IDT at the PM level, busy both EOCs, then return them to service. If the object class is *vtn_path_termination*, there is a DS-1 link configuration problem. The maximum number of links per RDT is 7. Post the IDT, enter QueryPM to display the invalid links in table RDTINV, then correct the link configuration. In a multi-hosting environment, ensure the RDTLINK number has not been assigned to another host.
RDT301	This log is generated whenever a facility alarm is received from the RFT.	The following may be causes: • call setup failure • degraded signal • framing error • loss of frame • loss of pointer • loss of signal • PM threshold 1 violation • PM threshold 2 violation

Table 7-6 Logs associated with the RDT (Sheet 2 of 3)

Log	Meaning	Possible causes
RDT302	This log is generated whenever an equipment alarm is received from the RFT.	The following may be causes: • equipment failure • equipment mismatch • equipment missing • power problem • timing problem • receiver problem • transmitter problem
RDT303	This log is generated whenever an environmental alarm is received from the RFT.	The following may be causes: • scan point active • shelf over temperature • battery failure • cooling fan failure • battery A failure • battery B failure • cooling fan 1 failure • cooling fan 2 failure • cooling fan 3 failure • cooling fan 4 failure
RDT304	This log is generated whenever a software alarm is received from the RFT.	The following may be causes: • storage capacity problem • memory mismatch • corrupt data • out-of-central processing unit (CPU) cycles • software environmental problem • software download problem
RDT305	This log is generated whenever a service alarm is received from the RFT.	None currently defined.

Table 7-6 Logs associated with the RDT (Sheet 3 of 3)

Log	Meaning	Possible causes
RDT306	This log is generated by the line provisioning process, or the line status audit process, when the DMS switch receives an error response indicating the RFT has failed to act on the request message sent from the DMS switch.	Error or faulty condition at the RFT. Provisioning mismatch: a line card has been provisioned with a service(s) it does not support and RTS failed.
RDT601	This log is generated when the ISDN object data audit detects a mismatch between the RFT ISDN objects and the DMS data.	Association between the DMS switch and RFT goes down after a create object request is sent to the RFT.
	This log is also generated when the line audit detects that message waiting lamp notification has been assigned to an Epsilon line card.	Epsilon line card does not support message waiting lamp notification.

The following two tables provide descriptions of the RDT306 log as used by the RDT line status audit process. The line status audit format is used when the hourly RDT line status audit fails to return a system busy RDT line to service. Once the problem is corrected, the line may be manually returned to service, or the audit process automatically returns the line to service during its next cycle.

Table 7-7 Line status audit RDT306 log general description (Sheet 1 of 2)

General description	Meaning/Solution
Error response received from remote	There is a problem at the remote end, which is preventing this operation from succeeding, or a software error has occurred. Refer to the trouble specific data for more details.
Application failed to respond within expected period	No response was received from the RDT. There may be problems with the maintenance connection to the RDT.

Table 7-7 Line status audit RDT306 log general description (Sheet 2 of 2)

General description	Meaning/Solution
Card fault	There is a problem with the line card at the RDT, which is preventing this operation from succeeding. The card fault must be cleared before proceeding. Refer to the trouble specific data for more details.
Datafill error	There is a problem which is preventing this operation from succeeding. The datafill error must be corrected before proceeding. Refer to the trouble specific data for more details.

Table 7-8 Line status audit RDT306 log

Specific description	Meaning/Solution
RDT messaging failed for this line	There are communication problems between the DMS switch and the RDT. There may be a maintenance connection problem, or a software error. Post the IDT, ensure the maintenance connection is established, check for SWERR logs.
Line provisioning is not complete for this line	This line is not fully provisioned at the RDT. The line cannot be returned to service until provisioning is complete. The provisioning state can be identified from table RDTLT, or by posting the line at the RDT.
Line cannot be identified	A software error has occurred causing corrupt line data in the DMS switch, check for SWERR logs.
Line card is not equipped	There is no line card installed at the RDT for this slot. Insert the appropriate line card.
Line card is in an invalid state	There is a problem with the line card at the RDT for this slot. The line card may have failed, or it may be busy for maintenance. Return the line card to service at the RDT.
Line card does not support the requested service	The physical line card at the RDT does not support the service being assigned. The service assignment must change, or the line card must be replaced.

The following two tables provide descriptions of the RDT line provisioning failures. The RDT line provisioning failures format is used when the RDT line provisioning process fails to complete provisioning at the RDT. Once the problem is corrected, the line must be manually reprovisioned by making a null change to the tuple in table LNINV, or by using the RDTPROV tool.

Table 7-9 Line provisioning failures general description

General description	Meaning/Solution
Error response received from remote	There is some problem at the remote end, which is preventing this operation from succeeding, or a software error has occurred. Refer to the trouble specific data for more details.
Application failed to respond within expected period	No response was received from the RDT. There may be problems with the maintenance connection to the RDT.
Card fault	There is a problem with the line card at the RDT, which is preventing this operation from succeeding. The card fault must be cleared before proceeding. Refer to the trouble specific data for more details.
Datafill error	There is a problem which is preventing this operation from succeeding. The datafill error must be corrected before proceeding. Refer to trouble specific data for more details.
No response from RDT	There is an invalid value in the request from the DMS switch. Most often, the attribute name is “supportingHardware". This indicates the supporting hardware (the copper distribution shelf) is not configured for the line provisioning being attempted. The shelf must be configured at the RDT before provisioning from the DMS switch can be complete.

Table 7-10 Line provisioning failures

Specific description	Meaning/Solution
invalidAttributeValue	There is an invalid value in the request from the DMS switch. Most often, the attribute name is “supportingHardware". This indicates the supporting hardware (the copper distribution shelf) is not configured for the line provisioning being attempted. The shelf must be configured at the RDT before provisioning from the DMS switch can be complete.
inconsistentRequestError	This error appears when the line card slot an operation has been requested is already assigned to a universal line card (UDLC). The line must be un-assigned before provisioning can be complete.
accessDenied	The line where an operation has been requested is owned by another entity. The line must be un-assigned, from the other host, before provisioning from the DMS switch can be complete.
applicationBusyError	The line where an operation has been requested is occupied by another application at the RDT. Monitor the state of the line at the RDT, and re-attempt provisioning once the line is available.
unAvailableFeatureError	The software at the RDT does not support the service being assigned to the line by the line card code in table LNINV. The service assignment must be changed or the software at the RDT must be upgraded.

The following pages illustrate ALT107, RDT301 through RDT304, and RDT306 logs.

Figure 7-1 ALT107 log

```
RTPD04BC   ALT107 APR26 14:43:55 8607 TBL ALT
   TESTID:  MANUAL 25  Stream:  0  Test type:  SDIAG
   REASON = Test equipment unavailable.
   INFO = RDT/RFT MTAPT
```

Figure 7-2 RDT301 and RDT302 logs

```
** RDT301 JUN23 12:02:49 3100 TBL  Facility Alarm
   Location:    RDT1 03 0
   Status:      Alarm raised
   Trouble: Facility alarm
   Action:      Refer to trouble recovery documentation
   Procedure:   Clear the alarm condition at the RDT
   Text:        Rx loss of signal
   Associated IDT:   3   Network element:   3 AN_RALEIGH_AMEX_B13
   RDT alarm record ID: 12   RDT primary OPC:   OPC_IP_47_192_3_79
   Correlated record ID:None   RDT backup OPC:   OPC_IP_47_192_3_80
   Service condition:  Service affecting
   Object class:    008D(ds1_line–termination)


*** RDT302 JUN23 12:04:26 3200 TBL  Equipment Alarm
   Location:    RDT1 03 0
   Status:      Alarm raised
   Trouble: Equipment alarm
   Action:      Refer to trouble recovery documentation
   Procedure:   Clear the alarm condition at the RDT
   Text:        Line card fail
   Associated IDT:   3   Network element:   3
AN_RALEIGH_AMEX_B13
   RDT alarm record ID: 13   RDT primary OPC:
OPC_IP_47_192_3_79
   Correlated record ID:None   RDT backup OPC:
OPC_IP_47_192_3_80
   Service condition:  Service affecting
   Object class:      00A0(loopStRes_line_termination)
```

Note: Severity of condition is indicated by number of asterisks as follows:

*	minor alarm
**	major alarm
***	critical alarm

Figure 7-3 RDT303 and RDT304 logs

```
*  RDT303 JUN23 12:16:14 3300 TBL  Environmental Alarm
   Location:    RDT1 03 0
   Status:      Alarm raised
   Trouble: Environmental alarm
   Action:      Refer to trouble recovery documentation
   Procedure:   Clear the alarm condition at the RDT
   Text:        Fan 2 fail
   Associated IDT:   3   Network element:   3
AN_RALEIGH_AMEX_B13
   RDT alarm record ID: 15   RDT primary OPC:
OPC_IP_47_192_3_79
   Correlated record ID:None   RDT backup OPC:
OPC_IP_47_192_3_80
   Service condition:  Non service affecting
   Object class:    0098(frame)


*** RDT304 JUN23 12:27:49 3400 TBL  Software Alarm
   Location:    RDT1 03 0
   Status:      Alarm raised
   Trouble: Software  alarm
   Action:      Refer to trouble recovery documentation
   Procedure:   Clear the alarm condition at the RDT
   Text:        Storage capacity exceeded
   Associated IDT:   3   Network element:   3 AN_RALEIGH_AMEX_B13
   RDT alarm record ID: 16     RDT primary OPC:   OPC_IP_47_192_3_79
   Correlated record ID:None   RDT backup OPC:   OPC_IP_47_192_3_80
   Service condition:  Service affecting
   Object class:    0093(network_element)
```

Note: Severity of condition is indicated by number of asterisks as follows:

*	minor alarm
**	major alarm
***	critical alarm

Figure 7-4 RDT306 logs

```
RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Error response received from remote
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (loopStRes_line_termination)
   Description: RDT line status audit failed to RTS line
                RDT messaging failed for this line
  Correction procedure: Correct problem at RDT then retry

RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Card fault
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (loopStRes_line_termination)
   Description: RDT line status audit failed to RTS line
                Line card is not equipped
  Correction procedure: Insert correct line card and
                        retry

RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Application failed to respond within
              expected period
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (loopStRes_line_termination)
   Operation:  create_e
   Problem type: No response from RDT – multiple timeouts
  Correction procedure: Correct problem at RDT then retry

RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Error response received from remote
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (loopStRes_line_termination)
   Operation:  create_e
  Problem type: inconsistentRequestError
   Reason:  Slot already assigned to UDLC line
  Correction procedure: Correct problem at RDT then retry
```

Other problem types generally indicate a software compatibility problem between the DMS switch and the RDT, or a software error at the DMS switch or RDT.

Logs associated with ISDN line performance

The following table lists the logs that are associated with ISDN line performance.

Table 7-11 Logs associated with ISDN line performance

Log	Meaning	Possible causes
LINE 131	This log is generated when ISDN U loop performance thresholds have been exceeded.	ES or SES performance thresholds have been exceeded.
LINE 145	This log is generated when frame synchronization has been lost or restored on ISDN U loops.	ISDN U loop frame synchronization has been lost or restored.
LINE 205	This log is generated when the number of function key hits reaches or exceeds four key hits in two seconds.	Babbling RDT line, system busy line at DMS switch.
ISDN200	This log is generated daily to display the total number of frames received and transmitted, and the number of received and retransmitted frames where errors exceed the threshold value.	Ten lines are identified with poor performance, or the layer 2 audit completes, and there are one to nine lines with performance problems that have not been reported.
ISDN201	This log is generated daily to show the percentage of errored and retransmitted frames on the ISDN switch.	High percentage of transmission error rate on the ISDN lines.
ISDN202	This log is generated to record the manual reset of layer 2 performance data.	The RLAYER command has been used to reset layer 2 performance data for an ISDN line.
ISDN203	This log is generated daily to show the percentage of errored and retransmiited frames on the ISDN switch.	Ten lines are identified with protocol abnormalities. or service disruptions. The layer 2 audit completes, and there are one to nine lines with performance problems that have not been reported.

8 SMA MVI-20 logs

Subscriber Carrier Module-100 Access related logs

The output reporting system generates many log reports. Since it is normally not economically feasible to have a printer for each log type and because the system generates the log reports in real time, all log reports are intermingled on the log device.

Monitoring the printer for background information that may have occurred hours before a particular event is difficult. Therefore, it becomes essential to use the individual subsystem buffers where log reports of the same log type can be viewed.

For example, if a fault has occurred in Subscriber Carrier Module-100 Access (SMA) 0, maintenance personnel may want to dump the contents of the peripheral module (PM) subsystem logs, and scan those logs for any information relative to SMA 0. This action would provide the necessary background information to help isolate the fault.

Logs associated with the SMA

The following table lists log reports useful in the maintenance of the multi-vendor interface 20 (MVI-20) variant of the SMA. The SMA supports a maximum of 20 DS-1 links on its peripheral side (P-side), hence the name

MVI-20. Each log report is listed along with its possible causes and an appropriate action by operating company personnel.

Table 8-1 SMA MVI-20 related logs (Sheet 1 of 6)

Log name	Causes	What to do
NAG400	Hourly, under the control of the NAG command. Lists information including REX results, about all nodes not in-service.	Depending on review of the log report, operating company personnel should take the necessary steps to return the node to service, or have the node REX enabled, if appropriate to do so.
PCH350	This log is inactive. When activated, this log will indicate that loadfile patching has failed.	This information log provides the information necessary to analyze the problem and take corrective action. Such actions include: downloading or locating missing patch files which are necessary to build the patched loadfile, providing necessary disk space for the loadfile.
PCH650	This log is inactive. When activated, this log will indicate that loadfile patching was successful.	Information only
PM102	SMA set to system busy (SysB).	Determine reason, perform test, replace faulty cards, and return SMA to service.
PM103	Generated when a new IDT has been added, and indicates the IDT went from UNEQUIP to OFFL.	Information only.
PM104	Generated when an IDT has been deleted.	Information only.
PM107	SMA changed to C-side busy (CBsy) state by system or manual request.	If system requested, determine reason, perform test, replace faulty cards, and return PM to service.
PM108	Firmware or hardware error in peripheral processor (PP).	No action required if generated for less than 2 minutes. If generated for more than 2 minutes or if diagnostics fail, perform test, replace faulty cards, and return PM to service.
PM109	DS-1 link set to SysB due to frame loss or excessive bipolar violations. Also accompanied by carrier group alarms.	No action required if generated for less than 2 minutes; otherwise, check for faults at remote digital terminal (RDT) then at SMA.
PM110	Bipolar violations (BpV), frame loss, or frame slip thresholds exceeded. Also generated when these levels fall below threshold limits.	No action required if levels return to normal; otherwise, check for faults at RDT then at SMA.

Table 8-1 SMA MVI-20 related logs (Sheet 2 of 6)

Log name	Causes	What to do
PM114	Trouble encountered during maintenance actions such as load, test, initialization, or return to service.	Determine reason, replace faulty cards, and return SMA to service.
PM128	SMA or SMA unit encountered trouble during normal operation. Specific examples follow:	No action required if system recovers. If system cannot recover, PM102 is generated.
	CLASS modem resource (CMR) card faulty or CMR load mismatch.	Busy unit, replace CMR card if faulty, reload, and return unit to service.
	Hard parity fault.	Busy unit, replace card in list, reload and return to service.
	State of the two units changed because of a REX test failure.	Investigate the PM600 log for reasons for the REX failure.
	REX test passed.	Information only.
	Diagnostic TESTALL fails.	Information only.
	REX warm SWACT has occurred.	Information only.
	SWACT controller override occurred, failed, failed with a SWACT back to the originally active unit, or was aborted.	Information only.
PM180	Encountered SMA software exception (improper execution of software).	Used by software experts to troubleshoot software defects if they exist. Retain log report for trend analysis.
PM181	Hard parity fault	Busy unit, replace card in list, reload, and return to service.
	Soft, intermittent parity faults.	No action required if both units are in-service (central control (CC) brings in-service trouble (ISTb) unit back to service); otherwise, busy unit, reload, and return to service.
PM181 (cont)	CMR card fault.	Busy unit, replace card in list, reload if necessary, and return unit to service.
	Faulty common controller cards in SMA.	Busy unit, replace CMR card if faulty, reload, and return unit to service.
PM183	PM P-side link changed to SysB.	Verify SMA DS-1 interface cards are functioning properly. Test link with SMA posted at PM level or with links posted at carrier level.

Table 8-1 SMA MVI-20 related logs (Sheet 3 of 6)

Log name	Causes	What to do
PM185	Error condition detected by firmware, hardware, or software causing trap interrupt.	Used by software experts to troubleshoot software defects if they exist. Retain this report and accompanying reports for trend analysis.
PM186	Maintenance limit or out-of-service limit exceeded on DS-1 links.	No action required if levels return to normal; otherwise, check for faults at RDT then at SMA.
PM189	Parity audit failure due to a hardware fault.	If accompanied by PM181, replace card listed, reload unit, and return to service. If log indicates software program fault, reload unit, and return to service.
PM190	Enhanced D-channel handler (EDCH) changes state to SysB due to fault detected in the EDCH.	Services defined by the ISG are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it and if necessary, subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.
PM191	EDCH changes state to ManB due to manual request.	Information only.
PM192	C-side node of EDCH is removed from service.	None; EDCH should recover without manual intervention once the C-side node is returned to service.
PM193	EDCH is placed in Offl state.	Information only.
PM194	EDCH encounters trouble during normal operation and changes state from InSv to ISTb.	System may recover on its own; otherwise, PM190 is generated. Respond as indicated in PM190 log.
PM195	EDCH is returned to service either manually or by the system.	Information only.
PM196	EDCH is removed from table DCHINV.	Information only.
PM198	EDCH sends unsolicited message containing valid fault condition that is not service-affecting.	Services defined by ISG are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it and, if necessary, subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.

Table 8-1 SMA MVI-20 related logs (Sheet 4 of 6)

Log name	Causes	What to do
PM199	EDCH completes a system diagnostic test.	Nothing if test passes; otherwise, services defined by the ISG are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it and, if necessary, subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.
PM200	Indicates an attempt to load an EDCH.	Nothing if test passes; otherwise, services defined by the ISG are automatically switched to the spare EDCH, if available. If the SMA does not recover, perform diagnostics on the EDCH, replace it and, if necessary, subsequent cards displayed in the card list. If the EDCH cannot be returned to service, contact technical support personnel.
PM235	EDCH takeover has occurred.	The source and destination EDCHs are identified along with the ISG. No response is required if takeover is successful. If takeover fails, destination EDCH is set to SysB and PM190 is generated. Respond as indicated in PM190 log.
PM270	EDCH is congested or EDCH congestion is cleared.	Information only.

Table 8-1 SMA MVI-20 related logs (Sheet 5 of 6)

Log name	Causes	What to do
PM600	REX fail reasons: • warm SWACT • warm SWACT turned off • pre-SWACT audit failure • autonomous SWACT • OOS tests of inactive unit 0 • OOS tests of inactive unit 1 • RTS of inactive unit 0 • RTS of inactive unit 1 • achieving superframe/data sync of unit 0 • achieving superframe/data sync of unit 1 • InSv tests of inactive unit 0 before SWACT • InSv tests of inactive unit 1 before SWACT • InSv tests of active unit 0 after SWACT • InSv tests of active unit 1 after SWACT • InSv tests of inactive unit 0 after SWACT • InSv tests of inactive unit 1 after SWACT • RTS of inactive unit 0 after SWACT	PM600 records the maintenance actions performed on the XPM during the failed REX, from the start of the REX to the step that failed. This information can be used to pinpoint the source of the REX failure.

Table 8-1 SMA MVI-20 related logs (Sheet 6 of 6)

Log name	Causes	What to do
	REX fail reasons (continued): • RTS of inactive unit 1 after SWACT • achieving superframe/data sync of unit 0 after SWACT • achieving superframe/data sync of unit 1 after SWACT • SWACT to unit 0 refused by SWACT controller • SWACT to unit 1 refused by SWACT controller • SWACT back to unit 0 occurred • SWACT back to unit 1 occurred • recovery failed—SWACT	
PM601	Generated when operating company personnel reset long term failure counters to zero for a XPM posted at the MAP terminal. Generated when an XPM is deleted from datafill.	This log is an information log and should be kept in a form that can be passed on for analysis to the Technical Assistance Service (TAS) and field support organizations in the event of a later outage.
PM777	NT6X69 message card failed to reset or failed to acknowledge first handshake	Busy unit, replace card, reload and return to service.
	Intermodule communication (IMC) link fault.	Isolate fault to NT6X69 or NTMX77; then busy unit, replace card, reload, and return to service.
	Invalid card under test.	Ensure all cards in PM are in correct slots.
	Memory parity fault.	Isolate fault to NTMX77; then busy unit, replace card, reload, and return to service.

PCH350 log report

This log is inactive. When activated, the PCH350 log will be output when XPM loadfile patching has failed. The reason for the failure is provided in the log report. Also included are the name of the XPM pmload (from table PMLOADS) associated with the loadfile patch session and the loadfile

initiation reason (manual or system). An example of a PCH350 log report follows.

```
PCH350 OCT31 11:59:59 FAIL Loadfile Patch Failure
Start Time: 1993/10/31 11:13:09 End Time: 1993/10/31 11:14:09
Pmload:  NLG36BD
Reason:  System
Patch file not found for:XAT09X36 SCH66X36 XKN83X36
```

PCH650 log report

This log is inactive. When activated, the PCH650 log will be output when XPM loadfile patching was successful. The log reports the names of the patches applied during the loadfile session, the name of the pmload, the name of the loadfile created during the loadfile patch session, the device used to store the new loadfile, and the loadfile initiation reason (manual or system). The following is an example of a PCH650 log report:

```
PCH650 SEP07 09:58:19 5900 INFO Loadfile Patch Successful
Start Time: 1993/09/06 16:26:45 End Time: 1993/09/06 17:00:03
Pmload:  NLT36BD
Loadfile:  NLT36BD_930906
Reason:  Manual
Patches added to loadfile
 XDF30X36  XLD09X36  XNF34X36 XED47X36
Patches that could not be removed from the loadfile: XV94X36
```

Logs associated with the IDT

A key point to remember is, the integrated digital terminal (IDT) is a logical entity rather than a component. Many of the logs associated with the IDT deal with the inability of the IDT to perform a software process. This is especially true in terms of the processing of maintenance channels.

PM102 - IDT goes SysB

This log is generated by the IDT subsystem when an IDT is removed from service by the system. An example of this log report follows. The messages possible with this log are listed in the table that follows the example.

Figure 8-1 Example PM102 report

```
PM102 JUL05 11:07:14 1990 SYSB IDT 12
FROM:  InSv
REASON:  Fault occurred on CMC/TMC chnls
```

Table 8-2 Overview of PM102 logs for the IDT

Message	Meaning	What to do
Fault occurred on TMC chnls	All time management channels (TMC) to a given IDT are removed from service or a logical link failure has occurred on the last in-service TMC.	Verify the associated facilities (SMA, DS-1s) are in-service. Enter the CONT command at the IDT level to run the internal continuity test.
CC Restart	The IDT or IDTs are SysB because of a S/DMS SuperNode reload or restart.	After the reload or restart, the IDT should return to service.

PM114 - failure of an IDT level command

The PM114 log is the most likely log to appear when there is a failure of an IDT level command. An example of log report follows. The table that follows gives the reasons for the log and what to do.

Figure 8-2 Example PM114 report

```
PM114 JUL05 11:07:14 7156 TBL IDT 6
REASON:  No response from PP
```

Table 8-3 Overview of PM114 logs for the IDT

Message	Meaning	What to do
Failed to mtcopen	Operation requests on the SMA P-side message DS-1s, associated with the corresponding IDT, have failed.	At the MAP terminal check the status of the SMA, the IDT, and the P-side message DS-1s. Check for other logs that may show the P-side message links have failed.
Return lines to service failed	A failure occurred during the lines return-to-service (RTS) phase of the IDT RTS. Despite this failure, the IDT will usually RTS.	There is an internal problem with the RTS process. Check for other logs.
RTS failed	Either the SMA is not responding, or responding incorrectly, to the RTS message for the IDT, the DMS-Core is not succeeding in sending the RTS message, or the RDT is not message capable.	Check the status of the SMA and the IDT P-side message links. There should be other logs, including PM180 software error (SWERR) logs.
No response from PP	The SMA is not responding to messages for the IDT.	Check for PM180 logs associated with the SMA.
Failed to get a route	Physically unable to find a route between the CM and SMA for messaging.	

PM128 - IDT goes ISTb

When the IDT goes in-service trouble (ISTb), alarms may be present at the RDT. Another likely cause is a problem with the message channels. An example of a PM128 log follows. The table that follows lists the messages associated with these channels and the actions to take.

Figure 8-3 Example PM128 report

```
PM128 JUL05 11:07:14 1990 ISTB IDT 12
FROM:  InSv
REASON:  Fault occurred on the channel
```

Table 8-4 Overview of PM128 logs for the IDT

Message	Meaning	What to do
Fault occurred on the channel	This message can have a number of possible causes: • 1 of 2 TMCs has been removed from service. • Any embedded operations channel (EOC) is removed from service. • A logical link failure occurs on the TMC(s). • A logical link failure occurs on the EOC(s).	First, ensure the associated RDT is in service. Check the message links at the SMA level of the MAP terminal. If they are OK, go to the IDT level, and check the status of the message links. If they are not OK, try to return them to service.
Maintenance connection not established	Operation, administration, maintenance, and provisioning messages cannot be sent over the EOC to the associated RDT.	An audit will try to correct the fault. If the EOCs are manually busy, return them to service.
TMC PNM overload	P-side node messaging traffic generated by the TMC is causing congestion within the enhanced ISDN signaling preprocessor (EISP).	Check for channel or logical link failures on the posted IDT and correct. If correction is not possible, manually busy the channel or logical link to prevent further resources from being used to maintain service on the channel or logical link. If no channel or logical link failures are found, the congestion may be caused by an engineering problem with the RDT.
EOC PNM overload	P-side node messaging (PNM) traffic generated by the EOC is causing congestion within the EISP.	Same as TMC PNM overload.
PNM overload on SMA	SMA goes ISTb with the following reason: `P-side Node Messaging system overload`	Check for ISTb reasons of TMC or EOC messaging overload on any of the IDTs supported by the posted SMA. Perform recommended actions.
RDT alarms present	Alarms exist at the RDT.	Clear alarms at the RDT.

PM181

A PM181 log is generated when

- there has been a problem while busying the IDT
- the SMA detects faults in the EOC or TMC channel
- a message channel has been manually busied.

An example of a PM181 log follows. The table that follows lists the messages associated with this log.

Figure 8-4 Example PM181 reports

```
PM181 JUL05 11:07:14 1990 INFO IDT 0
Node Status Mismatch
```

Table 8-5 Overview of PM181 logs for the IDT

Message	Meaning	What to do
No response received to Bsy request	A timeout has occurred while the DMS-Core maintenance task was waiting for the reply from the SMA for the Bsy request.	Check the state of the SMA, the IDT, and the P-side message DS-1s. Check for other logs.
Failure reply received for Bsy request	The SMA has responded, the BSY request has failed. From the DMS switch viewpoint, the BSY request has passed.	Check for logs. When the IDT is returned to service, the problem should be resolved, or other failure messages should occur.
Node Status Mismatch	The DMS switch and SMA do not agree on the status of the IDT.	The system will recover from this fault.
Path ManB EOC2	One of the message channels was manually busied, and the associated IDT was in-service. The SMA is set to ISTb.	Return message channel to service.

Logs associated with the RDT

The following table lists the logs associated with the RDT.

Table 8-6 Logs associated with the RDT (Sheet 1 of 3)

Log	Meaning	Possible causes
RDT301	This log is generated when a facility alarm is received from a RDT. A problem involving data transmission or signaling is detected at the RDT.	The following may be causes: • Call setup failure • Degraded signal • Framing error • Loss of frame • Loss of pointer • Loss of signal • Alarm indication signal
RDT302	This log is generated when an equipment alarm is received from a RDT.	The following may be causes: • equipment failure • replaceable unit missing • replaceable unit type mismatch • power problem • timing problem • receiver failure • transmitter failure • data set problem • external device problem • line card problem • multiplexer problem • processor problem • terminal problem • trunk card problem • back plane failure
Note: For RDTs of varient type generic time management slot (GENTMC), logs RDT301-RDT305, RDT308, and RDT309, do not contain the primary operating controller (OPC) and backup OPC fields. For logs RDT301-RDT305, RDT308, and RDT309, the notification sent from the RDT to the DMS switch corresponds to a single alarm.		

Table 8-6 Logs associated with the RDT (Sheet 2 of 3)

Log	Meaning	Possible causes
RDT303	This log is generated when an environmental alarm is received from a RDT.	The following may be causes: • fuse failure • rectifier failure • battery failure • cooling fan failure • enclosure door open
RDT304	This log is generated when a software alarm is received from a RDT.	The following may be causes: • storage capacity problem • memory mismatch • corrupt data • out-of-central processing unit (CPU) cycles • Software environmental problem • Software download problem ***Note:*** When the DMS SuperNode switch receives a software alarm problem type of “corrupt data" from the generic TR-303 RDT, the switch responds by reprovisioning all DMS SuperNode switch-maintained lines on that RDT.
RDT305	This log is generated when a service alarm is received from a RDT.	None currently defined.
RDT306	This log is generated by the line provisioning process or the line status audit process, when the DMS switch receives an error response indicating the RDT has failed to act on the request message sent from the DMS switch.	Error or faulty condition at the RDT. Provisioning mismatch: a line card has been provisioned with a service(s) it does not support and RTS failed.
Note: For RDTs of varient type generic time management slot (GENTMC), logs RDT301-RDT305, RDT308, and RDT309, do not contain the primary operating controller (OPC) and backup OPC fields. For logs RDT301-RDT305, RDT308, and RDT309, the notification sent from the RDT to the DMS switch corresponds to a single alarm.		

Table 8-6 Logs associated with the RDT (Sheet 3 of 3)

Log	Meaning	Possible causes
RDT308	This log is generated when a threshold alert is received from a RDT.	Performance monitoring threshold, or other triggered threshold.
RDT309	This log is generated when a indeterminate alarm is received from a RDT.	A problem has occurred, but the cause of the problem is not precisely determined.
RDT310	This log indicates a needed operation at the RDT cannot be completed.	For TR303 event report control (ERC), this log is generated if the needed ERC is not supported by the RDT, or if there is an error creating an ERC object.
Note: For RDTs of varient type generic time management slot (GENTMC), logs RDT301-RDT305, RDT308, and RDT309, do not contain the primary operating controller (OPC) and backup OPC fields. For logs RDT301-RDT305, RDT308, and RDT309, the notification sent from the RDT to the DMS switch corresponds to a single alarm.		

The following tables provide descriptions of RDT line provisioning failures. The RDT line provisioning failures format is used when the RDT line provisioning process fails to complete provisioning at the RDT. Once this problem is corrected, the line must be manually reprovisioned by deleting and re-adding the tuple in table LNINV, or by using the RDTPROV tool.

Table 8-7 Line provisioning failures general description

General description	Meaning/Solution
Error response received from remote.	There is some problem at the remote end, which is preventing this operation from succeeding, or a software error has occurred. Refer to the trouble specific data for more details.
Application failed to respond within expected period.	No response was received from the RDT. There may be problems with the maintenance connection to the RDT.
No response from RDT.	The RDT failed to respond after multiple attempts at communication. There may be problems with maintenance connections. Post the IDT, and ensure maintenance connections are established. Check for additional logs in the DMS switch and RDT.
Note: The meaning/solution is defined by, and specific to individual RDTs. The above descriptions represent examples of possible situations.	

Table 8-8 Line provisioning failures specific description

Specific description	Meaning/Solution
invalidAttributeValue	There is an invalid value in the request from the DMS switch. Most often, the attribute name is “supportingHardware". This indicates the supporting hardware is not configured for the line provisioning being attempted. The shelf must be configured at the RDT before provisioning from the DMS switch can be completed.
inconsistentRequestError	This error appears when the line card slot for which an operation has been requested, is already assigned to a line card. The line must be un-assigned before provisioning can be completed.
accessDenied	The line where an operation has been requested is owned by another entity. The line must be un-assigned from the other host, before provisioning from the DMS switch can be completed.
applicationBusyError	The line where an operation has been requested is occupied by another application at the RDT. Monitor the state of the line at the RDT, and re-attempt provisioning once the line is available.
unAvailableFeatureError	The software at the RDT does not support the service being assigned to the line by the line card code in table LNINV. The service assignment must be changed or the software at the RDT must be upgraded.
Note: The meaning/solution is defined by, and specific to individual RDTs. The above descriptions represent examples of possible situations.	

The following figures are examples of RDT logs.

Figure 8-5 RDT301, RDT302, and RDT303 logs

```
**RDT301 FEB25 14:35:10 3302 TBL Facility Alarm
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Facility Alarm
  Action     Refer to Trouble recovery documentation
  Text:      Rx loss of signal
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
  RDT alarm record ID:  12
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        008D (ds1_line_termination)

***RDT302 FEB25 14:35:10 3403 TBL Equipment Alarm
   Location:   RDT1  O3  0
   Status:    Alarm raised
   Trouble:   Equipment Alarm
   Action     Refer to Trouble recovery documentation
   Text:      DS3 MPR Cctpk mismatch
   Procedure:  Clear the alarm condition at the RDT
   Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
   RDT alarm record ID:  13
   Correlated record ID: None
   Service condition:   Service affecting
   Object class:        00A0 (loopStRes_line_termination)

 *RDT303 FEB25 14:35:10 3504 TBL Environmental Alarm
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Environmental Alarm
  Action     Refer to Trouble recovery documentation
  Text:      Fan 2 Fail
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
  RDT alarm record ID:  15
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        0098 (frame)
```

Note: Severity of condition is indicated by number of asterisks as follows:

*	minor alarm
**	major alarm
***	critical alarm

Figure 8-6 RDT304 and RDT305 logs

```
***RDT304 FEB25 14:35:10 3605 TBL Software Alarm
   Location:   RDT1  O3  0
   Status:    Alarm raised
   Trouble:   Software Alarm
   Action     Refer to Trouble recovery documentation
   Text:      Storage capacity exceeded
   Procedure:  Clear the alarm condition at the RDT
   Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
   RDT alarm record ID:  16
   Correlated record ID: None
   Service condition:   Service affecting
   Object class:        0093 (network_element)

**RDT305 FEB25 14:35:10 3706 TBL Service Alarm
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Service Alarm
  Action     Refer to Trouble recovery documentation
  Text:      None
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
  RDT alarm record ID:  17
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        0093 (network_element)
```

Note: Severity of condition is indicated by number of asterisks as follows:

*	minor alarm
**	major alarm
***	critical alarm

Figure 8-7 RDT306 logs

```
RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Error response received from remote
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (analogLineTermination)
   Operation    creat_e
   Problem type accessDenied
  Correction procedure: Correct problem at RDT then retry

RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Application failed to respond within
              expected period
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (analogLineTermination)
   Operation:  create_e
   Problem type: No response from RDT – multiple timeouts
  Correction procedure: Correct problem at RDT then retry
```

For the RDT306 log, other problem types generally indicate a software compatibility problem between the DMS switch and the RDT, or a software error at the DMS switch or RDT.

Figure 8-8 RDT308 log

```
**RDT308 FEB25 14:35:10 3706 TBL Threshold Alert
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Threshold alert
  Action     Refer to Trouble recovery documentation
  Text:      None
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3     Network element: 3 RALEIGH_AMEX_B1
  RDT alarm record ID:  17
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        008D (ds1_line_termination)
```

Figure 8-9 RDT310 log

```
RDT310  FEB25  14:35:10  3706  TBL  Resource Unavailable
Location: RDT  O5  0
Status:   Trouble alert
Trouble:  Error response received from remote
Action    Refer to Trouble recovery documentation
Problem:  Rose U-Reject Invoke Provlem
Resource: Mistyped arguments
Associated IDT:  3     Network element:  3 RALEIGH_AMEX_B1
```

Logs associated with ISDN line performance

The following table lists the logs associated with ISDN line performance.

Table 8-9 Logs associated with ISDN line performance

Log	Meaning	Possible causes
LINE 145	This log is generated when frame synchronization has been lost or restored on ISDN U loops.	ISDN U loop frame synchronization has been lost or restored.
LINE 147	This log is generated when changes occur in the Network Termination 1 (NT1) test mode status.	NT1 is placed in the test mode, NT1 is restored to its normal condition.
LINE 200	This log is generated daily to display the total number of frames received and transmitted, and the number of received and re-transmitted frames where errors exceed the threshold value.	ES or SES performance thresholds have been exceeded.
LINE 201	This log is generated daily to show the percentage of errored and re-transmitted frames on the ISDN switch.	High percentage of transmission error rate on the ISDN lines.
LINE 202	This log is generated to record the manual reset of layer 2 performance data.	ISDN U loop frame synchronization has been lost or restored.
LINE 203	This log is generated daily to show the percentage of eroded and re-transmitted frames on the ISDN switch.	Babbling RDT line, system busy line at DMS switch.
LINE 205	This log is generated when the number of function keyhits reaches or exceeds four keyhits in two seconds.	Babbling RDT line, system busy line at DMS switch.

An example of a LINE147 log follows:

Figure 8-10 LINE147 log

```
LINE147 APR01 12:34:58 6973 INFO NT1 Test Mode Indication Alarm
   LEN RDT1 8 0 1 96 DN 2341406
   NT1 Test Mode Initiated
```

Use the SUSTATE command located at the LTPDATA level of the MAP to determine why the LINE147 log was output. The display in response to this command shows the state of the NT1. Operating company personnel must then determine why the NT1 is undergoing maintenance and restore the NT1 to normal operation.

9 SMA2 MVI-28 related logs

Expanded Subscriber Carrier Module-100 Access MVI-28 related logs

The Expanded Subscriber Carrier Module-100 Access (ESMA), or SMA2, is a peripheral module (PM) based on the integrated services digital network (ISDN) line trunk controller (LTCI) architecture. The SMA2 provides multi-vendor interface (MVI) to a DMS-100 SuperNode. The SMA2 supports a maximum of 28 DS-1 links for an RDT.

The output reporting system generates many log reports. A printer assigned for each log type is expensive. The system generates log reports in real time. For these reasons, all log reports mix on the log device.

Monitoring the printer for background information that occurs hours before an event is important. Use each subsystem buffer to view log reports of the same log type is important.

For example, when a problem occurs in SMA2 0, maintenance personnel must dump the contents of the peripheral module (PM) subsystem logs. Maintenance personnel must scan the logs for information that relates to SMA2 0. This action provides the background information to help isolate the problem.

Logs that associate with the SMA2

The following table lists the log reports that help in the maintenance of the SMA2. This table contains possible causes and an appropriate action for operating company personnel for each log report.

Table 9-1 SMA2 related logs (Sheet 1 of 6)

Log name	Causes	What to do
NAG400	This log appears every hour, under the control of the NAG command. This log lists information that includes REX results, on all nodes not in-service (InSv).	After a review of the log report, operating company personnel must return the node to service or have the node REX enabled. The log report determines the appropriate action.
PCH350	This log is not active. When this log is activated, the log indicates loadfile patching fails.	This information log provides the information to analyze and correct the problem. To correct the problem, download or locate missing patch files needed to build the patched loadfile. Enough disk space for the loadfile must be present.
PCH650	This log is not active. When this log is activated, the log indicates loadfile patching is successful.	This log is for information only.
PM102	The SMA2 set to system busy (SysB).	Determine reason, perform test, replace defective cards and return SMA2 to service.
PM103	System generates this log when a new IDT is added and indicates the IDT went from UNEQUIP to OFFL.	This log is for information only.
PM104	System generates this log when an IDT is deleted.	This log is for information only.
PM107	System or manual request changes SMA2 to C-side busy (CBsy) state.	If system requests, determine reason, perform test, replace defective cards and return PM to service.
PM108	Firmware or hardware error in peripheral processor (PP)	There is no action required if the system generates this log for less than 2 min. If the system generates this log for more than 2 min, perform test, replace defective cards and return PM to service. Perform these actions if diagnostics fail.
PM109	The DS-1 link set to SysB because of frame loss or excessive bipolar violations. Carrier group alarms appear with this log.	There is no action required if the system generates this log for less than 2 min. Under any other conditions, check for defects at remote digital terminal (RDT) and at SMA2.

Table 9-1 SMA2 related logs (Sheet 2 of 6)

Log name	Causes	What to do
PM110	Bipolar violations (BpV), frame loss, or frame slip thresholds exceeded. System also generates this log when these levels fall below threshold limits.	There is no action required if levels return to normal. If levels do not return to normal, check for defects at RDT and at SMA2.
PM114	Trouble occurred during maintenance actions like load, test, initialization or return to service.	Determine reason, replace defective cards and return SMA2 to service.
PM128	The SMA2 or SMA2 unit trouble during normal operation. Exact examples follow:	There is no action required if system recovers. If system does not recover, the system generates PM102.
	The CLASS modem resource (CMR) card defective or CMR load mismatch.	Busy unit, replace CMR card if defective, reload and return unit to service.
	Hard parity error	Busy unit, replace card in list, reload and return to service.
	State of the two units changes because of a REX test failure.	Investigate the PM600 log for reasons for the REX failure.
	The REX test passed.	This log is for information only.
	Diagnostic TESTALL fails.	This log is for information only.
	The REX warm SWACT occurs.	This log is for information only.
	The SWACT controller override occurs, failed, failed with a SWACT back to the originally active unit, or the system aborts.	This log is for information only.
	A link to an ICB failed or was returned to service.	Determine which ICB, link, and if the link failed or was returned to service. If the link failed, perform appropriate actions to restore the C-side link to InSv.
PM180	The SMA2 software exception occurred (defective execution of software).	Software experts use this log to troubleshoot software defects. Retain log report for trend analysis.
PM181	Hard parity fault	Busy unit, replace card in list, reload and return to service.

Table 9-1 SMA2 related logs (Sheet 3 of 6)

Log name	Causes	What to do
	Soft, intermittent parity errors	There is no action required if both units are in-service when central control (CC) brings in-service trouble (ISTb) unit back to service. In any other condition, busy unit, reload and return to service.
PM181 (cont)	The CMR card error	Busy unit, replace card in list, reload if necessary and return unit to service.
	Defective common controller cards in SMA2	Busy unit, replace CMR card if defective, reload and return unit to service.
PM183	The PM P-side link changes to SysB.	Verify SMA2 DS-1 interface cards function correctly. Test link with SMA2 posted at PM level or with links posted at carrier level.
PM185	Firmware, hardware, or software that causes trap interrupt detect error condition.	Software experts use this log to troubleshoot software defects. Retain this report, and reports that accompany, for direction analysis.
PM186	Maintenance limit or out-of-service limit exceeded on DS-1 links.	There is no action required if levels return to normal. If levels do not return to normal, check for errors at the RDT and at the SMA2.
PM189	Parity audit failure because of a hardware error.	If PM181 accompanies the log, replace card listed, reload unit and return to service. If log indicates software program defective, reload unit, and return to service.
PM190	Enhanced D-channel handler (EDCH) changes state to SysB because of defect in the EDCH.	Services the ISG defines automatically switch to the spare EDCH, if the spare EDCH is available. If the SMA2 does not recover, perform diagnostics on the EDCH. Replace the EDCH and the next cards that display in the card list. If the EDCH cannot return to service, contact technical support personnel.
PM191	The EDCH changes state to ManB because of manual request.	This log is for information only.
PM192	The C-side node of EDCH is removed from service.	There is no action required. The EDCH recovers without manual help when the C-side node returns to service.
PM193	The EDCH is placed in Offl state	This log is for information only.

Table 9-1 SMA2 related logs (Sheet 4 of 6)

Log name	Causes	What to do
PM194	The EDCH encounters trouble during normal operation and changes state from InSv to ISTb.	System can recover automatically. If system does not recover, system generates PM190. Respond as PM190 log indicates.
PM195	The EDCH returns to service manually or by the system.	This log is for information only.
PM196	The EDCH is removed from table DCHINV.	This log is for information only.
PM198	The EDCH sends message with valid error condition that does not affect service.	Services ISG defines automatically switch to the spare EDCH, if the spare EDCH is available. If the SMA2 does not recover, perform diagnostics on the EDCH. Replace the EDCH and the cards that appear in the card list. If the EDCH does not return to service, contact technical support personnel.
PM199	The EDCH completes a system diagnostic test.	If test passes, there is no action required. If test fails, services the ISG defines automatically switch to the spare EDCH, if the spare EDCH is available. If the SMA2 does not recover, perform diagnostics on the EDCH. Replace the EDCH and the cards that appear in the card list. If the EDCH does not return to service, contact technical support personnel.
PM200	Indicates an attempt to load an EDCH.	If test passes there is no action required. If test does not pass, services the ISG defines automatically switch to the spare EDCH if the spare EDCH is available. If the SMA2 does not recover, perform diagnostics on the EDCH. Replace the EDCH and the next cards that display in the card list. If the EDCH does not return to service, contact technical support personnel.
PM235	The EDCH takeover occurs.	The source and destination EDCHs identify with the ISG. A response is not required if takeover is successful. If takeover fails, destination EDCH is set to SysB and the system generates log report PM190. Respond as log report PM190 indicates.
PM270	The EDCH is congested or EDCH congestion clears.	This log is for information only.

Table 9-1 SMA2 related logs (Sheet 5 of 6)

Log name	Causes	What to do
PM600	REX fail reasons	Log report PM600 records the maintenance actions performed on the XPM during the failed REX. Log report PM600 records these actions from the start of the REX to the step that failed. Use this information to pinpoint the source of the REX failure.
	warm SWACT	
	warm SWACT turned off	
	preSWACT audit failure	
	autonomous SWACT	
	OOS tests of inactive unit 0	
	OOS tests of inactive unit 1	
	RTS of inactive unit 0	
	RTS of inactive unit 1	
	System achieves superframe/data sync of unit 0	
	System achieves superframe/data sync of unit 1	
	InSv tests of inactive unit 0 before SWACT	
	InSv tests of inactive unit 1 before SWACT	
	InSv tests of active unit 0 after SWACT	
	InSv tests of active unit 1 after SWACT	
	InSv tests of inactive unit 0 after SWACT	
	InSv tests of inactive unit 1 after SWACT	
	RTS of inactive unit 0 after SWACT	
	RTS of inactive unit 1 after SWACT	

Table 9-1 SMA2 related logs (Sheet 6 of 6)

Log name	Causes	What to do
	System achieves superframe/data sync of unit 0 after SWACT.	
	System achieves superframe/data sync of unit 1 after SWACT.	
	SWACT to unit 0 refused by SWACT controller.	
	SWACT controller refuses SWACT to unit 1.	
	SWACT back to unit 0 occurs.	
	SWACT back to unit 1 occurs.	
	recovery failed—SWACT	
PM601	System generates this log when operating company personnel reset long term failure counters to zero for an XPM posted at the MAP terminal.	This log is an information log. Keep this log in a form you can pass on for analysis to the Technical Assistance Service (TAS) and field support groups. This information is for help when a later outage occurs.
	System generates this log when an XPM is deleted from datafill.	
PM777	The NT6X69 message card fails to reset or fails to acknowledge first handshake.	Busy unit, replace card, reload and return to service.
	Intermodule communication (IMC) link error	Isolate error to NTMX76 or NTMX77. Busy unit, replace card, reload and return to service.
	Invalid card under test	Make sure all cards in PM are in correct slots.
	Memory parity error	Isolate error to NTMX77, busy unit, replace card, reload and return to service.

Log report PCH350

The log report is not active. When activated, the system outputs log report PCH350 when XPM loadfile patching fails. The log report provides the reason for the failure. Log report PCH350 includes the name of the XPM PMLOAD from table PMLOADS that associates with the loadfile patch session. Log report PCH350 also includes the loadfile initiation reason (manual or system). An example of log report PCH350 follows.

```
PCH350 OCT31 11:59:59 FAIL Loadfile Patch Failure
Start Time: 1993/10/31 11:13:09 End Time: 1993/10/31 11:14:09
Pmload:  NLG36BD
Reason:  System
Patch file not found for:XAT09X36 SCH66X36 XKN83X36
```

Log report PCH650

This log is not active. When activated, the system outputs log report PCH650 when XPM loadfile patching is successful. The log reports the names of the patches applied during the loadfile session and the name of the PMLOAD. Log report PCH650 also names the loadfile the system created during the loadfile patch session and the device that stores the new loadfile. Log report PCH650 also reports the loadfile initiation reason (manual or system). An example of log report PCH650 follows:

```
PCH650 SEP07 09:58:19 5900 INFO Loadfile Patch Successful
Start Time: 1993/09/06 16:26:45 End Time: 1993/09/06 17:00:03
Pmload:  NLT36BD
Loadfile:  NLT36BD_930906
Reason:  Manual
Patches added to loadfile
 XDF30X36  XLD09X36  XNF34X36 XED47X36
Patches that could not be removed from the loadfile: XV94X36
```

Logs that associate with the IDT

The integrated digital terminal (IDT) is a logical entity, not a component. Logs associated with the IDT recognize that IDT cannot perform a software process, like the processing of maintenance channels.

PM102 - IDT goes SysB

The IDT subsystem generates this log when the system removes an IDT from service. An example of log report PM102 follows. The table that follows the example lists the messages that can accompany this log.

```
PM102 JUL05 11:07:14 1990 SYSB IDT 12
FROM:  InSv
REASON:  Fault occurred on CMC/TMC
chnls
```

Table 9-2 Overview of PM102 logs for the IDT

Message	Meaning	What to do
Fault occurred on TMC chnls	System removes all time management channels (TMC) to a given IDT from service. A logical link failure on the last in-service TMC also can cause the error.	Verify that facilities are in service. These facilities are SMA2 and DS-1. Enter the CONT command at the IDT level to run the internal continuity test.
CC Restart	The IDT or IDTs are SysB because of an S/DMS SuperNode reload or restart.	After the reload or restart, the IDT returns to service.

PM114 - failure of an IDT level command

Log report PM114 is the log the system generates when a failure of an IDT level command occurs. An example of log report PM114 follows. The table that follows the log report gives the reasons for the log and actions to take.

```
PM114 JUL05 11:07:14 7156 TBL IDT 6
REASON:  No response from PP
```

Table 9-3 Overview of Log report PM114 for the IDT (Sheet 1 of 2)

Message	Meaning	What to do
Failed to mtcopen	Operation requests on the SMA2 P-side message DS-1s, associated with the corresponding IDT, fail.	At the MAP terminal check the state of the SMA2, the IDT and the P-side message DS-1s. Check for other logs that can show a P-side message links failure.
Return lines to service failed	A failure occurs during the lines return-to-service (RTS) phase of the IDT RTS. The IDT returns to service.	An internal problem with the RTS process is present. Check for other logs.
RTS failed	The SMA2 does not respond or does not respond correctly to the RTS message for the IDT. The DMS-Core attempt to send the RTS message is not successful, or the RDT is not message qualified.	Check the status of the SMA2 and the IDT P-side message links. There are other logs present, like PM180 software error (SWERR) logs.

Table 9-3 Overview of Log report PM114 for the IDT (Sheet 2 of 2)

Message	Meaning	What to do
No response from PP	The SMA2 does not respond to messages for the IDT.	Check for PM180 logs that associate with the SMA2.
Failed to get a route	Cannot find a route between the CM and SMA2 for messaging.	Check for PM180 logs that associate with the SMA2.

Log report PM128 - IDT goes ISTb

When the IDT goes in-service trouble (ISTb), alarms can be present at the RDT. Another possible cause is a problem with the message channels. An example of log report PM128 log follows. The table that follows log report PM128 lists the messages that associate with the channels and the actions to take.

```
PM128 JUL05 11:07:14 1990 ISTB IDT 12
FROM:  InSv
REASON:  Fault occurred on the channel
```

For an ICB with more than one DS-1 link, the following PM128 log occurs.

```
PM128 FEB08 13:08:30 4001 TBL ISTB IDT 200
FROM:  ISTB major: LINK: 3
remote alarm received
```

Table 9-4 Overview of Log report PM128 for the IDT (Sheet 1 of 2)

Message	Meaning	What to do
Fault occurred on the channel.	This message has a number of possible causes: • One of two TMCs is removed from service. • An embedded operations channel (EOC) is removed from service. • A logical link failure occurs on the TMCs. • A logical link failure occurs on the EOCs.	Make sure the associated RDT is in service. Check the message links at the SMA2 level of the MAP terminal. If the messages are OK, go to the IDT level and check the state of the message links. If the messages are not OK, attempt to return the messages to service.
Maintenance connection not established.	The system cannot send operation, administration, maintenance and provisioning messages over the EOC to the RDT that associates.	An audit attempts to correct the error. If the EOCs are manually busy, return the EOC to service.
TMC PNM overload	The P-side node messaging (PNM) traffic that the TMC generated, causes congestion in the enhanced ISDN signaling preprocessor (EISP).	Check for channel or logical link failures on the posted IDT and correct the problem. If correction is not possible, manually busy the channel or logical link. This action prevents the use of additional resources to maintain service on the channel or logical link. If channel or logical link failures are not found, an engineering problem with the RDT can be the cause of the congestion.
EOC PNM overload	The PNM traffic that the EOC generated, causes congestion in the EISP.	Same as TMC PNM overload
PNM overload on SMA2	SMA2 goes ISTb with the following reason: `P-side Node Messaging system overload`	Check for ISTb reasons of TMC or EOC messaging overload on IDTs the posted SMA2 supports. Perform recommended actions.
RDT alarms present	Alarms are present at the RDT.	Clear alarms at the RDT.
LINK: <link_no>	A link to an ICB failed or was returned to service.	Determine which ICB and link. Determine if the link failed or returned to service.

Table 9-4 Overview of Log report PM128 for the IDT (Sheet 2 of 2)

Message	Meaning	What to do
remote alarm received	The link to the ICB is out of service.	Perform appropriate action to restore the C-side link.
remote alarm cleared	Operating company personnel restored the link to the ICB.	This log is for information only.

Log report PM181

The system generates a PM181 log when

- a problem occurs when the user busies the IDT
- the SMA2 detects defects in the EOC or TMC channel
- a message channel is manually busied

An example of log report PM181 follows. The table that follows PM 181 lists the messages associated with the log.

```
PM181 JUL05 11:07:14 1990 INFO IDT 0
Node Status Mismatch
```

Table 9-5 Overview of Log report PM181 for the IDT (Sheet 1 of 2)

Message	Meaning	What to do
No response received to Bsy request	A timeout occurred when the DMS-Core maintenance task waits for the reply from the SMA2 for the Bsy request.	Check the state of the SMA2, the IDT, and the P-side message DS-1s. Check for other logs.
Failure reply received for Bsy request	The SMA2 responds and the BSY request fails. From the DMS switch view, the BSY request passes.	Check for logs. When the IDT returns to service, the problem is resolved. If the problem is not resolved, other failure messages occur.

Table 9-5 Overview of Log report PM181 for the IDT (Sheet 2 of 2)

Message	Meaning	What to do
Node status mismatch	The DMS switch and SMA2 do not agree on the state of the IDT.	The system recovers from this fault.
Path ManB - EOC2	A message channels is manually busied, and the associated IDT is in-service. The SMA2 is set to ISTb.	Return message channel to service.

Logs that associate with the RDT

The following table lists the logs associated with the RDT.

Table 9-6 Logs that associate with the RDT (Sheet 1 of 4)

Log	Meaning	Possible causes
ALT107	Connection failure for the ALT SDIAG command on AccessNode lines.	The metal connection at the AccessNode is not available.
RDT301	The system generates this log when the system receives a facility alarm from an EDT. The RDT detects a problem that involves data transmission or signaling.	The following conditions are possible causes: • call setup failure • degraded signal • framing error • loss of frame • loss of pointer • loss of signal • alarm indication signal
Note: For generic time management slot (GENTMC) RDTs, logs RDT301-RDT305, RDT308, and RDT309, do not contain the primary operating controller (OPC) and backup OPC fields. For logs RDT301-RDT305, RDT308 and RDT309, that the notification the RDT sends to the DMS switch corresponds to a single alarm.		

Table 9-6 Logs that associate with the RDT (Sheet 2 of 4)

Log	Meaning	Possible causes
RDT302	The system generates this log when the system receives an equipment alarm from an RDT.	The following conditions are possible causes: • equipment failure • replaceable unit missing • replaceable unit type mismatch • power problem • timing problem • receiver failure • transmitter failure • data set problem • external device problem • line card problem • multiplexer problem • processor problem • terminal problem • trunk card problem • back plane failure
RDT303	The system generates this log when the system receives an environmental alarm from an RDT.	The following conditions are possible causes: • fuse failure • rectifier failure • battery failure • cooling fan failure • enclosure door open
Note: For generic time management slot (GENTMC) RDTs, logs RDT301-RDT305, RDT308, and RDT309, do not contain the primary operating controller (OPC) and backup OPC fields. For logs RDT301-RDT305, RDT308 and RDT309, that the notification the RDT sends to the DMS switch corresponds to a single alarm.		

Table 9-6 Logs that associate with the RDT (Sheet 3 of 4)

Log	Meaning	Possible causes
RDT304	The system generates this log when the system receives a software alarm from an RDT.	The following conditions are possible causes: • storage capacity problem • memory mismatch • corrupt data • out of central processing unit (CPU) cycles • software environmental problem • software download problem ***Note:*** When the DMS SuperNode switch receives a software alarm problem type of corrupt data from the generic TR-303 RDT, the switch responds. To respond, the switch reprovisions all DMS SuperNode switch-maintained lines on that RDT.

RDT305	The system generates this log when the system receives a service alarm from an RDT. The call reference value (CRV) for the affected line also appears.	The following conditions are possible causes, with the RDT305 log text information that accompanies:
		• an alarm clears and the IDT is ManB
		
		`No Line State Change performed`
		• an RDT service alarm clears for a line
		
		`IDT Requested DMS Return Line to Service`
		• a service alarm raises against an RDT line
		
		`IDT Requested DMS Change Line state to LMB`

RDT306	The line provisioning process or the line state audit process generates this log. When the DMS switch receives an error response. The error response indicates the RDT fails to act on the request message the DMS switch sends.	Error or defective condition at the RDT. Provisioning mismatch: a line card is provisioned with a service the card does not support and RTS fails.

Note: For generic time management slot (GENTMC) RDTs, logs RDT301-RDT305, RDT308, and RDT309, do not contain the primary operating controller (OPC) and backup OPC fields. For logs RDT301-RDT305, RDT308 and RDT309, that the notification the RDT sends to the DMS switch corresponds to a single alarm.

Table 9-6 Logs that associate with the RDT (Sheet 4 of 4)

Log	Meaning	Possible causes
RDT308	The system generates this log when the system receives a threshold alert from an RDT.	Performance monitoring threshold or other triggered threshold.
RDT309	The system generates this log when the system receives an indeterminate alarm from an RDT.	A problem occurred, but the cause of the problem is not determined.
RDT310	This log indicates a needed operation at the RDT cannot complete.	For TR303 event report control (ERC), the system generates this log if the RDT does not support the needed ERC, or if an error creates an ERC object.
	This log also tracks the reception of Remote Operation Reject (RORJ) application protocol data units (APDU) from an RDT.	The system records a record of the reception with any important data in the APDU. This record provides a means to diagnose rejection problems with RDTs.
RDT601	The system generates this log when the lines that provision audit process finds a mismatch between the line data in the MVI RDT and the CM.	This log is for information only. The system initiates a procedure to correct the problem. Operating company personnel interruption is not required. The mismatch can indicate other problems. Operating company personnel must note this log and be alert for other conditions.
Note: For generic time management slot (GENTMC) RDTs, logs RDT301-RDT305, RDT308, and RDT309, do not contain the primary operating controller (OPC) and backup OPC fields. For logs RDT301-RDT305, RDT308 and RDT309, that the notification the RDT sends to the DMS switch corresponds to a single alarm.		

An example of log report RDT601 follows:

```
*RDT601 FEB25 14:35:10 0123 INFO Audit Action
   Location: RDT1 00 0
   Acting on trouble:   Data not synchronized
   Object class: 4e8 (loopGndBus_line_termination)
   Description:  Object data mismatch between RDT and CM
```

The following two tables describe RDT line provisioning failures. The RDT line provisioning failures format is used when the RDT line provisioning process fails to complete provisioning at the RDT. When this problem is

corrected, manually reprovision the line. To manually reprovision the line, delete and add the tuple in table LNINV again, or use the RDTPROV tool.

Table 9-7 Line provisioning failures general description

General description	Meaning/Solution
Remote receives error response.	A problem is present at the remote end. The problem prevents the successful completion of this operation or a software error occurs. Refer to the trouble exact data for more details.
Application fails to respond in expected period.	The system does not receive a response from the RDT. This conditions suggest possible problems with the maintenance connection to the RDT.
RDT does not respond.	The RDT fails to respond after multiple communication attempts. This action suggests possible problems with maintenance connections. Post the IDT and make sure maintenance connections are established. Check for additional logs in the DMS switch and RDT.
Note: Each RDT defines the meaning/solution. The meaning/solution corresponds to each RDT. These descriptions represent examples of possible conditions.	

Table 9-8 Line provisioning failures specific description (Sheet 1 of 2)

Specific description	Meaning/Solution
invalidAttributeValue	An invalid value is present in the request from the DMS switch. Most often, the attribute name is support hardware. This condition indicates the hardware that supports is not configured for the attempted line provisioning. The shelf must be configured at the RDT before provisioning from the DMS switch can complete.
inconsistentRequestError	This error appears when the line card slot where an operation is requested is assigned to a line card. Do not assign the line to allow provisioning to complete.
accessDenied	Another entity owns the line where an operation is requested. Unassign the line from the other host, before you provision from the DMS switch can complete.
Note: Each RDT defines the meaning/solution. Each meaning/solution corresponds to an RDT. The above descriptions represent examples of possible conditions.	

Table 9-8 Line provisioning failures specific description (Sheet 2 of 2)

Specific description	Meaning/Solution
applicationBusyError	Another application at the RDT occupies the line for which an operation is requested. Monitor the state of the line at the RDT, and attempt to provision again when the line is available.
unAvailableFeatureError	The software at the RDT does not support the service the line card code in table LNINV assigns to the line. Change the service assignment or upgrade the software at the RDT.
Note: Each RDT defines the meaning/solution. Each meaning/solution corresponds to an RDT. The above descriptions represent examples of possible conditions.	

Examples of RDT logs follow.

Figure 9-1 ALT107 log

```
RTPD04BC   ALT107 APR26 14:43:55 8607 TBL ALT
   TESTID:  MANUAL 25  Stream:  0  Test type:  SDIAG
   REASON = Test equipment unavailable.
   INFO = RDT/RFT MTAPT
```

Figure 9-2 RDT301 and RDT302 logs

```
RDT301 FEB25 14:35:10 3302 TBL Facility Alarm
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Facility Alarm
  Action     Refer to Trouble recovery documentation
  Text:      Rx loss of signal
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
  RDT alarm record ID:  12
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        008D (ds1_line_termination)

 RDT302 FEB25 14:35:10 3403 TBL Equipment Alarm
   Location:   RDT1  O3  0
   Status:    Alarm raised
   Trouble:   Equipment Alarm
   Action     Refer to Trouble recovery documentation
   Text:      DS3 MPR Cctpk mismatch
   Procedure:  Clear the alarm condition at the RDT
   Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
   RDT alarm record ID:  13
   Correlated record ID: None
   Service condition:   Service affecting
   Object class:        00A0 (loopStRes_line_termination)
```

Figure 9-3 RDT303, RDT304, and RDT305 logs

```
RDT303 FEB25 14:35:10 3504 TBL Environmental Alarm
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Environmental Alarm
  Action     Refer to Trouble recovery documentation
  Text:      Fan 2 Fail
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
  RDT alarm record ID:  15
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        0098 (frame)

RDT304 FEB25 14:35:10 3605 TBL Software Alarm
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Software Alarm
  Action     Refer to Trouble recovery documentation
  Text:      Storage capacity exceeded
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
  RDT alarm record ID:  16
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        0093 (network_element)

RDT305 FEB25 14:35:10 3706 TBL Service Alarm
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Service Alarm
  Action     Refer to Trouble recovery documentation
  Text:      None
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3    Network element: 3 RALEIGH_AMEX_B13
  RDT alarm record ID:  17
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        0093 (network_element)
  Call reference value: 30
```

Figure 9-4 RDT306 logs

```
RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Application failed to respond within
              expected period
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (analogLineTermination)
   Operation:  create_e
   Problem type: No response from RDT – multiple timeouts
  Correction procedure: Correct problem at RDT then retry

RDT306 JUN25 14:35:10 3302 TBL  Line Provisioning Failure
   Location:  RDT1 00 0 1 2
   Status:    Trouble alert
   Trouble:   Error response received from remote
   Action:    Refer to trouble recovery documentation
   Associated IDT:  4
  Object class: 00A0 (analogLineTermination)
   Operation   creat_e
   Problem type accessDenied
  Correction procedure: Correct problem at RDT then retry
```

For log report RDT306, other problem types indicate a software compatibility problem between the DMS switch and the RDT. The log also can indicate software error at the DMS switch or RDT.

Figure 9-5 RDT308 and RDT310 logs

```
RDT308 FEB25 14:35:10 3706 TBL Threshold Alert
  Location:   RDT1  O3  0
  Status:    Alarm raised
  Trouble:   Threshold alert
  Action     Refer to Trouble recovery documentation
  Text:      None
  Procedure:  Clear the alarm condition at the RDT
  Associated IDT:   3     Network element: 3 RALEIGH_AMEX_B1
  RDT alarm record ID:  17
  Correlated record ID: None
  Service condition:   Service affecting
  Object class:        008D (ds1_line_termination)

RDT310  FEB25  14:35:10  3706  TBL  Resource Unavailable
  Location: RDT  O5  0
  Status:   Trouble alert
  Trouble:  Error response received from remote
  Action    Refer to Trouble recovery documentation
  Problem:  Alarm count list object create failed
  Resource: Alarm count list object not supported by the RDT
  Associated IDT:  3     Network element:  3 RALEIGH_AMEX_B1
```

Logs that associate with ISDN line performance

The following table lists the logs that associate with ISDN line performance.

Table 9-9 Logs that associate with ISDN line performance (Sheet 1 of 2)

Log	Meaning	Possible causes
LINE145	The system generates this log when frame synchronization is lost or restored on ISDN U loops.	The ISDN U loop frame synchronization is lost or restored.
LINE147	The system generates this log when changes occur in the Network Termination 1 (NT1) test mode status.	The NT1 is placed in the test mode. The NT1 is restored to its normal condition. This log informs of possible service disruption because of maintenance actions performed on the NT1 located on the customer premises.
LINE205	The system generates this log when a minimum of four function keyhits occurs in two s.	Babbling RDT line, system busy line at DMS switch.

Table 9-9 Logs that associate with ISDN line performance (Sheet 2 of 2)

Log	Meaning	Possible causes
LINE200	The system generates log LINE200 one time each day. The log displays the total number of frames the system received and transmitted. The log also displays the number of received and retransmitted frames with errors that exceed the threshold value.	ES or SES performance thresholds exceeded.
LINE201	The system generates log LINE201 one time each day. The log shows the percentage of error and retransmitted frames on the ISDN switch.	High percentage of transmission error rate on the ISDN lines.
LINE202	The system generates this log to record the manual reset of layer 2 performance data.	The ISDN U loop frame synchronization is lost or restored.
LINE203	The system generates log LINE203 one time each day. The log shows the percentage of eroded and retransmitted frames on the ISDN switch.	Babbling RDT line, system busy line at DMS switch.

An example of log report LINE147 follows:

Figure 9-6 LINE147 log

```
LINE147 APR01 12:34:58 6973 INFO NT1 Test Mode Indication Alarm
   LEN RDT1 8 0 1 96 DN 2341406
   NT1 Test Mode Initiated
```

Use the SUSTATE command at the LTPDATA level of the MAP to determine the cause of log report LINE147. The display in response to this command shows the state of the NT1. Operating company personnel must determine why the NT1 goes through maintenance, and restore the NT1 to normal operation.

10 RSC-S related logs

Remote Switching Center-SONET related logs

Gather and analyze logs to monitor Remote Switching Center-SONET (RSC-S) components. Use logs to isolate a problem to a single component and to locate link problems.

Peripheral module logs

To perform RSC-S maintenance, monitor the peripheral module (PM) logs described in this section.

Note that the system updates current PM logs to reflect the RSC-S. Basic Remote Switching Center (RSC) operational measurements (OM) apply to the RSC-S. For information on how to use these logs for administrative purposes, refer to the *Log Report Reference Manual.*

The logs in this section appear in the following groups:

- remote cluster controller 2 (RCC2)
- emergency stand-alone (ESA)
- other RSC-S
- dual RCC2 (DRCC2)
- RSC-S with integrated services digital network (ISDN)

Remote cluster controller 2 logs

The following table lists primary PM log reports that associate with the RCC2 without ESA. A separate section on page 10-23 describes PM181 logs for

ESA. This description includes example messages, additional message reasons, and log meaning.

Table 10-1 RSC-S related logs (Sheet 1 of 14)

Log name	Causes	Examples
IOAU112	The SREX controller generates this log if REX test: • performs longer than specified • does not run at scheduled time • cannot start after *n* attempts • scheduler is set to OFF or changed	IOAU112 AUG09 16:35:26 1900 INFO REX Scheduler Notice LCM 0 was not REXed for 7 days
ISDN LINE 131	The system generates this log for 2B1Q loops when performance thresholds on line cards are exceeded.	LINE131 APR01 16:53:10 6100 INFO Performance Monitoring (PM) Alert LEN HOST 10 0 08 14DN 7225227 Report Type PERFORMANCE ALERT Source QISLC - FE ES CURRDay Threshold Of 100 Exceeded ES=101 SES=101
LINE 145	Triggered when loss or gain of signaling occurs between the ISDN line card and a multipoint node or network termination 1 (NT1). Specifies the multipoint node number where signaling loss occurs. Reports the following layer 1 events: • loss of synchronization • loss of signal with dying gasp • loss of signal without dying gasp • recovery of signal	LINE145 ATPR 01 11:19:15 8200 INFO ISLC Signal Alarm LEN HOST 10 0 08 15 DN 7225228 Loss of signal with “dying gasp" at NT1: Loop state remains DMB
LINE 147	Reports changes in the NT1 test mode of the subscriber.	LINE147 APR10 21:25:51 3402 INFO NT1 test mode indication alarm LEN HOST 10 0 08 16 DN 7225229 NT1 test mode initiated

Table 10-1 RSC-S related logs (Sheet 2 of 14)

Log name	Causes	Examples

LINE 148	Reports the correction of mismatches in layer 1 thresholds or time-of-day values of 2B1Q line cards.	`LINE148 APR10 00:01:31`
		`4200 Layer 1 BLM`
		`Parameters Refreshed`
		`LEN HOST 10 0 08 17`
		`NO DIRN`
		`Thresholds updated byindex`
		`index = 7`
		`ES/Hr=234`
		`SES/Hr=186`
		`ES/Day=2567`

LINE 149	Reports multipoint embedded operations channel (EOC) configuration changes. A message from the LCME that occurs without warning triggers log LINE 149. The message triggers the log when the multipoint audit detects a problem in multipoint data.	`LINE149 OCT07 17:56:52 4407`
		`INFO mp-eoc`
		`configuration change`
		`LEN HOST 10 0 07 18`
		`DN 7225226mp-eoc configuration`
		`changed: 2 to 4 line units`

NAG400	The system generates NAG400 each hour. The NAG command causes log generation. This log lists information, which includes REX results. This log also lists information about all nodes not in-service (InSv).	Return the node to service or activate the node REX. These actions depend on the log report. ***Note:*** LCMs display LCM_REX and LCM ring continuity and converter voltages (LCMCOV_REX) test results. A colon separates the test results. A status of N/A indicates the LCMCOV_REX test does not run on that LCM variant. The system performs LCMCOV_REX tests on LCMs, XLCMs, OPMs, and RLCMs.

PM102	The DMS switch sets the RCC2 system busy (SysB) from another state. The normal state is in-service trouble (ISTb). The link audit with the central-side (C-side) PM fails. Features AF5329 and AF5672 enhance this log report, and provide additional outage information for XLCMs.	`PM102 MAY21 22:15:21 2453`
		`SysB RCC2 0`
		`Node :SysB From ISTb`
		`Unit0 Inact:SysB(Link Audit)`
		`Unit1 Act:SysB:Link Audit`
		`from CBsy`

PM105	The user enters the BSY command from the MAP terminal. The user can test the RCC2 or place the RCC2 offline. If the RCC2 is busy, consult operating company personnel to determine the reason the RCC2 is busy.	`PM105 MAY21 22:15:21 2453`
		`MANB RCC2 0`
		`Node :ManB From ISTb`
		`Unit0 Inact::ManB`
		`Unit1 Act::ManB`

Table 10-1 RSC-S related logs (Sheet 3 of 14)

Log name	Causes	Examples
PM106	The DMS switch returns the RCC2 to service. The normal state is the ISTb state.	PM106 MAY21 22:15:21 2453 RTS RCC2 0 Node :InSv From ISTb Unit0 Inact::InSv Unit1 Act::InSv
PM107	The DMS switch sets the RCC2 C-side busy (CBsy). Both messaging links are busy or the C-side PM is SysB.	PM107 MAY21 22:15:21 2453 CBSY RCC2 0 Node :CBsy Unit0 Inact::SysB (Link Audit) from CBsy Unit1 Act::CBsy
PM109	The level set in Table CARRMTC exceeds the out-of-service (OOS) limit. The user removed the digital signal 1 (DS-1) card that associates with the link from the RCC2 to the C-side PM. The RCC2 is set ISTb.	PM109 MAY21 22:15:21 2451 PBSY CARRIER LGC0CARRIER-NO: 3 REASON:CARRIER LOCALALARM SET CARRIER CARD REMOVED
PM110	Note the following causes:	PM110 MAY21 22:15:21 2451 INFO CARRIER LGC0 CARRIER-NO: 3 REASON:CARRIER
	The level set in Table CARRMTC exceeds the bipolar violation (BpV) maintenance limit.	BPV MTC LIMIT SET
	The BpV limit drops below the threshold and clears.	BPV MTC LIMIT CLEARED
	The C-side PM detects loss of frame, set in table CARRMTC.	LOF MTCE LIMIT SET
	The loss of frame clears.	LOF MTCE LIMIT CLEARED
	The slip level set in Table CARRMTC is exceeded.	SLIP MTCE LIMIT SET
	The slip level drops below the threshold.	SLIP MTCE LIMIT CLEARED
PM111	A local carrier group alarm (LCGA) clears, and the DS-1 links RTS.	PTM111 MAY21 22:15:21 2451 RTS CARRIER LGC0 CARRIER-NO: 3 REASON:CARRIER LOCAL ALARM CLEARED

Table 10-1 RSC-S related logs (Sheet 4 of 14)

Log name	Causes	Examples

PM117	The RCC2 fails to return a *who-am-I* message to the CC after the CC requests the RCC2 to reset.	`PM117 MAY21 22:15:21 2451 LGC 0`
		`Unit 1:Act`
		`VALUE: 1 NO WAI RECEIVED AFTER RESET`

PM128	The DMS switch sets the RCC2 to ISTb. While the system corrects the problem, the RCC2 can continue to process calls. Features AF5329 and AF5672 enhance this log report, and provide additional power failure information for XLCMs.
	
	The state of the two units changes because of a routine exercise (REX) test failure.
	
	REX test passes.
	
	Diagnostic TESTALL fails.
	
	REX warm switch of activity (SWACT) occurs.
		`PM128 MAY21 22:15:21 2451`
		`TBL ISTb RCC2 0`
		`Node :ISTb (Inact OOS)`
		`From InSv`
		`Unit0 Inact::SysB From InSv`
		`Unit1 Act::InSv`

	NT7X05 not present	The correct inventory table contains the NT7X05 card. During maintenance that involves the NT7X05, the NT7X05 is not present in the correct slot. Follow NT7X05 card replacement procedures to BSY the unit. Install the NT7X05 card, and RTS the unit.
	NT7X05 fault detected	The card can work. The user detects a problem. The user must replace the card. Follow NT7X05 card replacement procedures to BSY the unit. Install the NT7X05 card, and RTS the unit.

Table 10-1 RSC-S related logs (Sheet 5 of 14)

Log name	Causes	Examples
	Image file on the NT7X05 is not available, or the user cannot use the file.	Set when the XPM unit does not have a functional image file on the NT7X05 card. One of the following factors causes this condition: • the file is corrupt. A failed checksum indicates a corrupt file • a load attempt that used the file fails. Load attempts from other files pass • the file is not available • The available files are not correct. The inventory table does not contain these files. BSY and RTS the unit to perform a manual image dump.
	Load file on the NT7X05 that is not available or the user cannot use.	Set when the user cannot use at least one load file on the NT7X05 card in the XPM unit. Problems can occur in the XPM loadfile and/or CMR loadfile. One of the following factors causes the problems: • the file(s) are corrupt. A failed checksum indicates the corrupt files. • a load attempt that uses the file(s) fails. Load attempts from other files pass. • the file(s) is not available • The available files are not correct. These files are not the correct files that appear in Table PMLOADS. To load the NT7X05 card, type **>LOADPM INACTIVE CC NT7X05**
	Image in progress	Set when the XPM unit dumps an image to the NT7X05 card.

Table 10-1 RSC-S related logs (Sheet 6 of 14)

Log name	Causes	Examples
PM179	Indicates a software condition occurs that affects normal RCC2 operation. The PM179 supplies information that associates with a PM hardware exception report. Features AF5329 and AF5672 add the contents of the processor board configuration register to the log report.	Refer to the description of PM124 in *Log Report Reference Manual,* to determine specified problems and responses that this report indicates.
	Features AF5911 and AF5912 add the talk battery failure detected and cannot test talk battery modifications to this log report.	Refer to description of PM179 in *Log Report Reference Manual* to determine specified problems and responses that this report indicates.

	Example log report LCM talk battery failure detected.	`*** PM179 JUN22 15:47:20 3114 TBL PM`
		`HW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`Talk Battery Failure detected on shelf 54 by RSC0 00 1 12 30.`

	Example log report cannot test talk battery.	`* PM179 JUN22 20:17:06 5214 TBL PM`
		`HW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`Cannot test Talk Battery on shelf 54 since no WLC provisioned.`

PM180	Indicates performance of software is not correct. Feature AF5890 adds the XLCM real-time overload field to this log report.	Collect all PM180 reports and copy next level of support.

	Example log report LCM enters overload	`* PM180 MAY14 12:37:10 6702 TBL PM`
		`SW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`LCM enters overload: DMSX: 5 IUC: 0 SEQ: 0 RT OVLD:medium (4/9,A8)`

	Example log report LCM overloaded	`* PM180 MAY14 12:37:10 6702 TBL PM`
		`SW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`LCM overloaded: DMSX: 45 IUC: 4 SEQ: 3 RT OVLD:medium (2/9,58)`

Table 10-1 RSC-S related logs (Sheet 7 of 14)

Log name	Causes	Examples

	Example log report LCM out of overload. The current information includes DMSX and Inter-unit communications (IUC) message lost totals to a maximum 65 535. The peak real-time distress during the overload period and the duration of the overload period is a maximum of 255 min.	`* PM180 MAY14 12:37:10 6702 TBL PM`
		`SW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`LCM out of overload:`
		`Total DMSX:1234`
		`Total IUC:1230`
		`SEQ: 3 RT`
		`OVLD peak: High (2/9,58)`
		`Duration: 25 mins`

	Example log report incorrect real-time control variables. After the overload period, the XLCM detects at least one real-time control variable that does not return to a normal state. Absence of this log indicates the XLCM deactivates all real-time overload protection mechanisms. Capacity is not limited. The XLCM does not limit capacity when the XLCM deactivates all real-time overload protection mechanisms.	`** PM180 MAY14 12:37:10 6702 TBL PM`
		`SW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`TASKID: 000B`
		`TIME: 8081`
		`TEXT: INV RT CTL`
		`5267 0000 4C14 0001 0064`
		`424A2555 7676 839F 5311 52AE`
		`839F 00F6 8399 99D2`

PM181	Indicates when an attempt to download of multipoint EOC data to the LCME fails.	`PM181 FEB15 20:13:12 2300 INFO`
		`LCME HOST 10 0 Unit 1`
		`Node:InSv, Unit 0: InSv,`
		`Unit 1: InSv`
		`Loading of mp-eoc datafails`

	The RCC2 encounters a problem when the RCC2 runs a test. The PM181 has many messages. To maintain the RCC2, monitor the PM 181 report.	`PM181 MAY21 22:15:21 2451`
		`ISTb SysB RCC2 0`
		`Node :SysB From ISTb`
		`Unit0 Inact:: Static Data Clears`
		`Unit1 Act: Static Data Clears`

	Test the peripheral-side (P-side) PM.	`Diagnose C-side links.`
	Run the TEST command later.	`Diagnostic system in overload.`
	The TEST command succeeds.	`Diagnostic TESTALL passes.`
	The TEST command is not successful, and produces a card list. The system generates this log during troubleshooting procedures.	`Diagnostic TESTALL fails,` `Cardlist:`
	Run the TEST command later.	`Diagnostic resource is not available.`

Table 10-1 RSC-S related logs (Sheet 8 of 14)

Log name	Causes	Examples
	Static data is not available. Busy the RCC2 unit. Load the unit with CC static data.	`Diagnostic TESTALL fails,incorrect static data.`
	Check the C-side PM.	`Fails to open C-side link.`
	The DS-1 link throttles messages. Refer to the section that follows.	`Operational fault: C_Side Message`
	The load is corrupt, or a CHECKSUM fails.	`Software error (SWERR) in diagnostic TESTALL`
	The RCC2 loads static data again.	`Static data update`
	The LCME REX test passes	
	An HDLC link gains synchronization. DMS-X protocol can change to HDLC protocol when the RCC2 is InSv. The PM state changes to ISTb until all HDLC links are synchronized to the host. The CC receives a message without a warning for each HDLC link synchronized. The system generates a PM 181 log. When all HDLC links between an RCC2 and an LTC+ are synchronized, the system clears the ISTb state.	`PM181 MAY09 14:09:11 6400 INFO RCC2 REM1 0 Unit 0 Node: InSv, Unit0 Act: Insv, Unit1 Inact: Istb HDLC Cside msg link GAINED sync - link 0`
	An HDLC link loses synchronization. When the synchronization of an HDLC link fails during a dynamic DMS-X to HDLC protocol upgrade, the CC receives a message without warning. The system generates a PM181 log. If all HDLC message links between an RCC2 and an LTC+ are not synchronized after the dynamic upgrade, the RCC2 performs in the DMS-X mode. If the remote is in the ISTb state because of HDLC links synchronization, the system clears the ISTb.	`PM181 MAY09 14:09:11 6400 INFO RCC2 REM1 0Node: Istb, Unit0 Act: Insv, Unit1 Inact: Istb HDLC Cside msg link LOST sync - link 2`

Table 10-1 RSC-S related logs (Sheet 9 of 14)

Log name	Causes	Examples
PM181	In this log output, an x digital subscriber line (xDSL) line card (xLC) was added to table LNINV. The drawer for the table does not support the high speed data traffic of the 1-Meg Modem Service (1MMS). The line installed functions as a standard voice line only.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 PHYSICAL DRWR 0 DOES NOT SUPPORT xDSL DATA TRAFFIC` No action required.
	In this log output, an xLC was added to table LNINV. The drawer for the table supports the high speed data traffic of the 1MMS. The line drawer contains more xLCs than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 MAXIMUM NO (30) OF xDSL LINES PER PHYSICAL DRWR EXCEEDED MEMBERS PER PHYSICAL DRWR EXCEEDED` The whole line drawer is at risk of failure because the drawer is operating beyond its thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL and has room for expansion • upgrade another LCM line drawer with a data-enhanced bus interface card (DBIC) and move this xDSL line card to that drawer • enter the CI level QXNET VERIFY command to verify the xDSL line card assignments

Table 10-1 RSC-S related logs (Sheet 10 of 14)

Log name	Causes	Examples
PM181 (contd)	In this log output, an xLC was added to table LNINV. The drawer contains more xLCs in a vertical row than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 MAXIMUM NO OF xDSL LINES PER VERT ROW EXCEEDED MAX MEMBERS (2) of xDSL LINES PER VERT ROW EXCEEDED` The whole line drawer can fail because the drawer is operating beyond the thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPAND command to locate another row in the same drawer for the xDSL line card • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL
PM185	Error condition that firmware, hardware, or software detects, causes a trap interrupt.	Refer to Parity error log reports to determine an example of a PM185 log report.
PM189	Parity audit failure.	`PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT RCC2 0 Unit 0:Act TASKID:00370037 PARAUDT,TIME : 22:29:16.68 COMID: FFNILCID TEXT:softdat 00 00 57 F6 0000 not in code`

Table 10-1 RSC-S related logs (Sheet 11 of 14)

Log name	Causes	Examples
PM600	The system generates PM600 log when an XMS-based peripheral module (XPM) REX test fails. The following are REX test failure reasons: • warm SWACT • warm SWACT turned off • preSWACT audit failure • autonomous SWACT • OOS tests of inactive unit 0 • Return to service (RTS) of inactive unit 0 • RTS of inactive unit 1 • Achieving superframe and data sync of unit 0 • Achieving superframe and data sync of unit 1 • In-service (InSv) tests of inactive unit 0 before SWACT • InSv tests of inactive unit 1 before SWACT • InSv tests of active unit 0 after SWACT • InSv tests of active unit 1 after SWACT • InSv tests of inactive unit 0 after SWACT • InSv tests of inactive unit 1 after SWACT • RTS of inactive unit 0 after SWACT • RTS of inactive unit 1 after SWACT • Achieve superframe and data sync of unit 0 after SWACT	``` ** PM600 JUN08 01:28 8600 TBL REX FAILED XPM 0 Node:ISTb, Unit 0 Act:InSv, Unit 1 Inact:SysB (Diag Failed) REX Step Unit Start Time Failure Reason Tst Inact 0 09:17:33 Bsy Inact 0 09:17:47 RTS Inact 0 09:18:15 Sync Inact 0 09:21:43 Pre-SwAct 0 09:21:51 Warm SwAct - 09:22:37 Bsy Inact 1 09:22:40 RTS Inact 1 09:23:08 Sync Inact 1 09:25:27 Tst Act 0 09:22:50 REX test failed—InSv tests of active Unit 0 after Swact Warm SwAct - 09:25:28 Bsy Inact 0 09:25:29 Finished - 01:28:25 Supplemental Data Diagnostic Failures: UTRDIAG Site Flr RPos Bay_id Shf Description Slot EqPEC HOST 01 L15 LTE 00 65 LTC : 000 15 6X92 ```

Table 10-1 RSC-S related logs (Sheet 12 of 14)

Log name	Causes	Examples
PM600 (contd)	REX test fail reasons (contd): • Achieving superframe and data sync of unit 1 after SWACT • SWACT controller refuses SWACT to unit 0 • SWACT controller refuses SWACT to unti 1. • SWACT back to unit 0 occurs • SWACT back to unit 1 occurs • Recovery fails—SWACT	
	(for a line concentrating module [LCM]) Unit 1 fails the REX test	`PM181 JAN02 00:02:12 4832 INFO LCM HOST 00 0  Unit 1 Node : ISTb, Unit0 :Insv, Unit1 :ISTb Routine Exercise FAILED` ***Note:*** The example text is as appears because of space limits.

PM601	The system generates log PM601 when operating company personnel reset long-term failure counters to zero. Operating company personnel reset long-term failure counters to zero for an XPM posted at the MAP terminal. The system generates log PM601 when the user deletes an XPM from the entry.	`PM601 AUG20 09:44:15 2741 INFO XPM Diagnostic History RCC 1 Reset Long Term Failure (LTF) counts LTF last reset: 92/07/01 06:22:10 Summary of LTF counts prior to reset:`
		`UNIT 0 UNIT 1`
		`DIAGLIST`
		`TONES DG 1 1`
		`----------`
		`CARDLIST`
		`NTMX75 1 2`

Table 10-1 RSC-S related logs (Sheet 13 of 14)

Log name	Causes	Examples
PM620	The system changes log PM620 that reports the following sync events: • reference link switching • reference links pair switching from P-side reference pair links to C-side reference pair links. Reference links pair switching from C-side reference pair links to P-side reference pair links. • mode transitions • active reference link condition change	PM620 JUL09 12:12:12 2800 INFO PM Sync Information ReportRCC2 REM1 0 Unit 0:Act PRIM:Act,Ok From Stby,Vldng SCND:Stby,Dsbld FromStby,Dsbld PM620 JUL09 12:12:12 2800 INFO PM Sync Information ReportRCC2 REM1 0 Unit 0:Act Sync-Status:Ntwk,Acquisition From BITS,Holdover PM620 JUL09 12:12:12 2800INFO PM Sync Information Report RCC2 REM1 0 Unit 0:ActSync-Status: Ntwk,Holdover From BITS,Acquisition PRIM: Act,Dsbld From Stby,Dsbld SCND:Stby,Dsbld From Stby,Dsbld
PM777	The message and tone card is defective. Impaired or interrupted messaging occur between the RCC2 and CC.	PM777 JAN04 17:44:56 2709 INFO H/W FAULT RCC 2 UNIT NO: 00 Error State: 6X69 Insane Suspected card(s): Site Flr RPos Bay_id Shf HOST 00 A00 RCE 00 65 Description Slot EqPEC RCC : 00 18 6X69 Data: 00 02 42 FA 00 1A

Table 10-1 RSC-S related logs (Sheet 14 of 14)

Log name	Causes	Examples
PRFM200	The performance subsystem generates this log to report activity data for the RCC2 peripheral.	An example of the PRFM200 log follows. For the NTMX73AA and NTMX76AA cards, the summary line contains the average time for the last 15 min. If the perform tool runs for less than 15 min, the time provided is the requested time. In this example, the summary fields do not contain any values.

```
PRFM 200 JAN10 04:39:50 2044 INFO PMACT_DATA
RCC2 0 UNIT 1
Load name: CRI02BY
  UPHP  UPCP  UPLP  ISPHP  ISPCP  ISPLP  SIGP  MX76  ORIG  TERM  UTR CHNL
1. 19%   38%    9%    0%     16%    0%     9%    22%   105  110   1    82
2. 19%   38%    8%    0%     15%    0%     9%    22%   102  98    1    81
..
..
..
Summary  Summary   UTRAVAIL XX   UTRHIGH  XX   PSIDEAVAIL  XXX   PSIDEHIGH  XX
```

PM181 logs (firmware download events)

The system adds text reasons to the current PM181 log format to record firmware download events and failures.

PM181 (activity dropped)

The system adds messages to handle the XPM parity audit. For some messages, the unit becomes SysB. For other messages, the unit becomes ISTb.

The following logs indicate the active unit drops activity. The CC immediately performs a warm SWACT so that call processing is not affected.

- `PARITY AUDIT DETECTS HARD PARITY FAULT`

  If the defective unit is inactive, the RCC2 sets the unit to SysB. If the defective unit is active, a warm SWACT occurs. The RCC2 sets the inactive unit to SysB. If the defective unit is active and warm SWACT is not available, the CC sets the unit ISTb. A card list appears with this log.

- `PARITY AUDIT DETECTS SOFT PARITY FAULT IN PROGRAM STORE (OR DATA STORE)`

  If the defective unit is inactive, the system sets the unit to SysB. If the defective unit is active, a warm SWACT occurs. The system sets the inactive unit to SysB. If warm SWACT is not available, the system sets the unit to ISTb. If the unit is already busy, the system loads the unit again. For data store (DS), if the defective unit is already busy, the CC returns the

unit to service. The CC returns the unit to service with new static data and full diagnostics.

- PARITY AUDIT DETECTS INTERMITTENT PARITY FAULT

  If the defective unit is inactive, the CC busies the unit and returns the unit to service with full diagnostics. If the defective unit is active and the inactive unit is InSv, a warm SWACT occurs. The system returns the inactive unit to service with full diagnostics. If the defective unit is active and the inactive unit is not InSv, the system sets the active unit to ISTb. If the parity audit does not detect an intermittent problem in 2 min after the user reports the problem, the inactive unit returns to service.

- ACTIVITY TIMEOUT
- SANITY TIMEOUT
- TRAP
- REQUEST
- DUPLICATE FAULT
- JAMMED
- DATA CORRUPTION
- STATIC DATA CORRUPTION
- PRE-SWACT AUDIT FAILURE
- UNDEFINED DROP REASON
- DROPPED ACTIVITY CAUSED BY POWER FAIL
- DROPPED ACTIVITY CAUSED BY SIGNALING PROCESSOR CLOCK FAIL

PM181 (throttling faults on the messaging DS-1 links)

The system throttles operational faults reported on the DS-1 messaging links. The DS-1 messaging links connect the RCC2 to the host line trunk controller (LTC), or line group controller (LGC). The system creates a PM181 log that indicates an operational fault that occurs on an RCC2 messaging link.

Throttling operational faults make sure a fault on a DS-1 messaging link cannot take the RCC2 OOS. When an operational fault on an RCC2 messaging link occurs, the RCC2 increases the correct message error counter. The RCC2 sends a message that contains all message error counts to CC. The CC receives and formats the information into a PM181 log. The system opens the link again, unless additional faults occur in a short period of time.

This log includes information like if the current fault occurs at the LTC P-side or the RCC2 C-side. This log provides the current message error counts. If the fault is on the C-side, the C-side message error counters appear. If the fault

is on the P-side, the P-side message error counters appear. The counters are not stored on separate links. The counts are the total for all the links on the specified side. The system does not clear message counts until the peripheral returns to service. The system must compare two logs to determine the current message error.

Throttling affects operational faults on RCC2 DS-1 message links. Throttling does not affect any other type of peripheral.

The following chart is an example of the PM181 log. A table that contains the fields and the meanings of the fields follow the example log.

```
PM181 MAY15 14:15:42 2530 INFO RCC2 60
Node: ISTb, Unit0 Inact: ISTb, Unit1 Act: InSv
LINK NO:    2, OPERATIONAL FAULT: C_SIDE_MSG
MISTO:    0 WAMTO:     3 WASTO:    0 WACKTO:   0 WANRTO:   3
WANXTO:   0 MSGLEN:    0 BADCRC:   0
NACK2:    0 NACK1:     0 NACKX:    3 RBNDMG:   3 FLSMIS:   0
BCKDWN:  16 BACKPR:    0 BUFOVF:    0
```

Table 10-2 Fields of the PM181 log message throttling (Sheet 1 of 2)

Field	Meaning
BACKPR	Back pressure timeout. Free receiver buffers are not available.
BADCRC	Cyclic redundancy code is incorrect.
BCKDWN	A slave process waits for a SEND to transmit a message. The slave process receives a may-I-send (MIS) message from the master processor.
BUFOVF	Buffer overflow. Buffers are not available.
FLSMIS	MIS is not correct. The user can detect one MIS on the link. A minimum of two MISs on the link must be available.
MISTO	MIS timeout message.
MSGLEN	Message length error occurs when this field receives a message length that is not correct.
NACK1	This field receives the first negative acknowledgment (NACK) after this field transmits a message.
NACK2	This field receives the second NACK after this field transmits a message.

Table 10-2 Fields of the PM181 log message throttling (Sheet 2 of 2)

Field	Meaning
NACKX	This field transmits a NACK after this field receives a corrupted message.
RBNDMSG	A message rebounds. This event indicates an error.
WACKTO	The user must wait for acknowledgment timeout error. This field does not receive positive acknowledgment (PACK) or NACK after this field transmits a message.
WANRTO	The user must wait for idle after the user acknowledges a message timeout error. The user does not receive idle after the user acknowledges a message with a PACK or NACK.
WANXTO	The user must wait for idle after the user packs a NACK timeout error. The user does not receive PACK or NACK after the user acknowledges the reception of a NACK.
WASTO	The user must wait for send timeout error. The user does not receive filtered SEND after the user transmits an MIS.

PM128 (remote cluster controller 2 overload logs)

When the RCC2 enters overload, a PM128 (RCC2 is ISTb) appears with the `PM Overloaded` message.

A the PM level of the MAP display, the user posts the RCC2 and enters the QUERYPM FLT command. The same message, `PM Overloaded`, appears.

Operating company personnel must collect all important OMs that track the amount and types of traffic. The reason that the RCC2 enters overload relates to a maintenance area, like network faults. In other conditions, the reasons can relate to not enough engineering of the RCC2. Both maintenance and engineering personnel must receive the OM reports for analysis.

PM128 (static data mismatch)

The different sets of static data that RCC2 and CC have can affect call processing. When a static data mismatch is present, the `Static Data mismatch with CC log` message appears.

Use the NODATASYNC option to RTS the inactive unit. This action clears the alarm. Perform a SWACT.

PM181, PM128 (parity error logs)

The following pages contain maintenance examples on the logs that the parity audit produces. The following pages contain an example of a response to the

QUERYPM FLT command. The following pages contain a summary on how to locate and clear faults.

PM181 (hard parity fault and both units in-service)

The following charts are example reports:

```
PM181 JUL23 23:29:16 5561 INFO RCC2 0 Unit 0
Node: ISTb, Unit 0 Act: InSv, Unit 1, Inact:  InSv
Parity audit detected hard parity fault
Site Flr  RPos  Bay_id  Shf Description Slot  EqPEC
RALL 00   C05   RCC2 00  18  RCC2 : 000    10    MX77
```

Other trouble indicators

The PM128—The RCC2 is set ISTb, with the inactive unit OOS.

```
PM128 JUL23 23:29:16 5561 TBL  ISTb RCC2 0
Node: ISTb, (Inact OOS) From InSv
Unit 0 Inact: SysB (Parity errors detected) from InSv
Unit 1   Act: InSv
```

The PM189—The inactive unit of the RCC2 has a hard fault.

```
PM189 JUL23 23:29:17 5561 INFO PM SW INFORMATION REPORT
RCC2 0 Unit 0 : Inact
TASKID : 00370037 PARAUDT, TIME : 22:29:16.68 COMID: FF
NIL CID
TEXT : hard_flt 00 00 57 F6 00 00
```

>QUERYPM FLT

```
SysB reason: hard parity fault is detected
```

The SysB section of the message indicates the system removes the inactive unit from service and cannot process calls. Both units are InSv. The OOS takes the inactive unit, or a warm SWACT occurs on the active unit. The OOS takes the inactive unit.

PM181 (hard parity fault inactive unit already SysB)

The inactive unit is not InSv or warm SWACT is not available. The CC cannot take the defective unit OOS because the whole RCC2 is busy and does not process calls. The CC sets the active unit as ISTb.

PM181 (soft parity fault in program store both units in-service)

The following is an example of system output.

```
SysB reason: soft parity fault was detected
in PS of XX memory
```

The SysB section of the message indicates that the CC takes the inactive unit OOS. The SysB section of the message indicates that the CC performs a warm SWACT on the RCC2. The CC takes the new inactive unit OOS.

The CC sets the inactive unit to SysB. If the defective unit is the active unit, the CC performs a warm SWACT. The CC busies the new inactive unit. At this point, the CC tries to recover the busy unit without operating company personnel intervention. The CC starts autoloading. The CC assumes that Tables PMLOADS and LTCINV contain the correct loads. The CC loads the full load, and returns the unit to service.

The CC brings the unit back to service. Operating company personnel do not intervene. Operating company personnel must intervene only if the RCC2 does not RTS. Operating company personnel must check the load tables. Operating company personnel must check for other trouble indicators that indicate the defective unit cannot RTS.

PM181 (soft parity fault in program store inactive unit is already out-of-service)

The following is an example of system output.

```
The following InSv troubles exist:
Soft parity fault was detected in PS of XX memory
```

In this condition, the inactive unit is not InSv or warm SWACT is not available. The CC cannot take the defective unit OOS, or the whole RCC2 is busy and does not process calls. The CC sets the active unit as ISTb.

When the inactive unit is OOS or the inactive unit cannot take over call processing, the system drops all call processing. The system drops all call processing when the system busies the unit. To make sure that this process does not occur, operating company personnel must activate the unit and process calls. Operating company personnel must return the unit to service or have warm SWACT available if the inactive unit is InSv. Operating company personnel must busy the active unit, load the unit with the complete load, and return the unit to service.

PM181 (soft parity fault in data store both units in-service)

The following is an example of system output.

```
SysB reason: soft parity fault was detected
in DS of XX memory
```

The SysB section of the message indicates the CC takes the inactive unit OOS. The SysB section of the message indicates that the CC performs a warm SWACT on the RCC2. The CC takes the new inactive unit OOS.

The CC sets the inactive unit as SysB. If the defective unit is the active unit, the CC performs a warm SWACT. The CC busies the new inactive unit. At this point, the CC attempts to recover the busy unit without operating company personnel interruption. The CC returns the unit to service. The CC makes sure that the system downloads new static data and performs full diagnostics.

The CC brings the unit back to service. Operating company personnel must intervene only if the RCC2 does not RTS. The user must check for other trouble indicators that indicate that the defective unit cannot return to service.

PM181 (soft parity fault in data service inactive unit already out-of-service)

The following is an example of system output.

```
> QUERYPM FLT

The following InSv troubles exist:
Soft parity fault is detected in DS of XX memory
```

In this condition, either the inactive unit is not InSv or warm SWACT is not available. The CC cannot take the defective unit OOS. If the CC takes the defective unit OOS, the whole RCC2 is busy and does not process calls. The CC sets the active unit as ISTb.

The system drops all processing when the following events occur:

- the inactive unit is OOS
- the inactive unit cannot take over call processing
- the system busies the unit

To make sure this process does not occur, operating company personnel must activate the unit and process calls. Operating company personnel must return the inactive unit to service or perform a warm SWACT if the inactive unit is InSv. Operating company personnel must busy the active unit and return the defective unit to service. The system sends the static data as part of the RTS.

PM181 (intermittent parity fault both units in-service)

The following is an example of system output.

```
PM181 JUL23 23:29:16 5561 INFO RCC2 0 Unit 0
Node : ISTb, Unit 0 Act : InSv, Unit 1, Inact :  SysB
Parity audit detected intermittent parity fault

SysB reason: Intermittent parity fault was
detected in PS (or DS) of XX memory
```

The SysB section of the message indicates the CC takes the inactive unit OOS. The SysB section of the message means that the CC performs a warm SWACT on the RCC2 and takes the new inactive unit OOS.

The CC sets the inactive unit as SysB. If the defective unit is the active unit, the CC performs a warm SWACT. The CC busies the new inactive unit. At this point, the CC tries to recover the busy unit without operating company personnel interruption. The CC returns the unit to service and makes sure that the system performs full diagnostics.

The CC brings the unit back to service. Operating company personnel must intervene only if the RCC2 does not RTS. The user must check for other trouble indicators that indicate the defective unit cannot RTS.

PM181 (intermittent parity fault inactive already out-of-service)

The following is an example of system output.

```
The following InSv troubles exist:
Intermittent parity was fault is detected in XX memory
```

The InSv allocation of the message indicates the CC sets the active unit as ISTb. The CC sets the active unit as ISTb because the inactive unit is OOS. The CC sets the active unit as ISTb because a warm SWACT is not available.

The CC sets the active unit ISTb. The CC cannot perform any recovery action at this point. If the audit runs twice and does not find a parity audit, the CC returns the active unit to InSv. When the audit runs twice, the audit runs for approximately 2 min.

When the inactive unit is OOS or the inactive unit cannot take over call processing, the system drops all call processing. The system drops all call processing when the system busies the unit. To make sure that this process does not occur, operating company personnel must activate the unit and process calls. Operating company personnel must return the inactive unit to service. Operating company personnel must have warm SWACT available if

the inactive unit is InSv. Operating company personnel must busy the active unit and return the defective unit to service. The system sends the static data as part of the RTS.

Expanded use of PM180 (PM777)

Before batch change supplement (BCS) 33, PM180 logs included information on SWERR states that hardware errors caused. In BCS33, log PM777 handled hardware error information included in PM180 logs. Log PM777 provides this information in simple text. Operating company personnel can locate and correct hardware errors. Log PM777 identifies any suspected card or cards that can cause a hardware error.

Log PM777, along with feature *Log Retrieve Facility for E1 Incidents,* allows journaling of all logs to a storage device. This system stores logs for later retrieval and analysis.

Restrictions

Restrictions for PM777 are as follows:

- The user analyzes only the most critical software modules for output of the new log.
- The user does not analyze software-related PM180 logs for states that affect service.

Emergency stand-alone logs

The ESA logs described in this section include the following:

- ESA101 to ESA109
- PM181
- PM171

ESA101 to ESA109

The system generates ESA logs when the ESA download from the CC exceeds the RCC2 allocation for ESA static data. The following table shows these logs and the entries that are exceeded.

Table 10-3 ESA logs produced for download warnings (Sheet 1 of 2)

Log	Table	Type entry	Max entry
ESA101	Terminal data	1 for each terminal	5760
	Automatic line	1 for each automatic line (AUL)	256
ESA102	Customer group	1 for each group	288

Table 10-3 ESA logs produced for download warnings (Sheet 2 of 2)

Log	Table	Type entry	Max entry
	Prefix header	1 for each customer group	288
ESA103	Prefix table	1 for each ESA prefix translator plain old telephone service (POTS) customer group	16 8
ESA110	Table ESAHNPA	1 for each customer group POTS customer group	32 16
ESA104	Extension header	1 for each customer group	288
	EFG		2304
ESA105	ABCD	1 for each directory number (DN)	5760
ESA106	Hunt header	1 for each hunt group	200
ESA107	Hunt member	1 for each hunt group	4000
	Office parameter		1
	Table ESARTE		256
ESA109	Trunk group table	Subset of Tables TRKGRP and TRKSGRP	

PM181 logs

The PM subsystem generates a PM181 log to report information that relates to the PM. The subsystem modifies the PM181 log to print information for ESA. The PM181 information includes the following:

- manual exit warning
- fails to exit ESA
- fails to download ESA static data

- successful ESA static data update
- fails to download ESA static data

Manual exit warning The RCC2 is not manually busy (ManB). The RSC_XPMESAEXIT timeout parameter is zero. The system generates a PM181 log to suggest that the user requires manual EXIT. The system restores the links after the RCC2 enters ESA. The system prints log PM181 one time every minute until the user performs a manual EXIT on the RCC2 unit in ESA.

Failed to download emergency stand-alone static data The log contains the reason for the failure and the Table ID where the load fails.

Failed to download emergency stand-alone static data The log contains the reason for the failure.

Other RSC-S logs

For subscriber lines and DS-1 links, the RSC-S produces the same logs as the logs produced for a host office configuration.

PM171

The RCC2 contains the OMs that the RCC2 provides. The host in the form of a PM171 log receives the forwarded OMs after the RCC2 leaves ESA. This log deals with traffic counts. Refer to *Log Report Reference Manual* for information on the these log fields.

Dual remote cluster controller 2 logs

The logs specified to the RCC2 are logs associated with the interlinks and the entry of dual ESA (DESA):

- PM221 (interlink changes to ManB)
- PM222 (interlink changes to SysB)
- PM223 (interlink changes to InSv)

RSC-S with ISDN logs

When the RSC-S has ISDN capability, the system produces logs specified for ISDN functionality. The following sections describe actions that result in logs and the specified logs produced.

Logical link management audit and logs

One important source of ISDN log reports is the logical link management (LLM) audit. The present LLM audit periodically attempts to establish any logical link. With the RCC2, this audit tries to establish links again if

- the D-channel is InSv
- remaining maintenance action on the link is not available

Autonomous terminal endpoint identifier check and restoration

During the LLM audit cycle, an autonomous terminal endpoint identifier (TEI) check is performed on removed TEIs. If the check passes, TEI restoration automatically follows. A log appears if the restoration action passes.

Autonomous D-channel restoration

The system audits the failure of the autonomous D-channels. The system makes an attempt to return the channel to service. The CC receives a log if the action succeeds. A maintenance action restores the channel.

ISDN logs

The following logs apply to RSC-S with ISDN faults:

Table 10-4 Logs for RSC-S with ISDN faults

Log number	Description
ISDN100	The systems cannot put D-channel handler (DCH) channel that associates with an ISDN line cannot be put into traffic level.
ISDN101	A DCH detects that a terminal (loop) is not available for message traffic.
ISDN102	A DCH detects duplicated TEIs on the same ISDN line and removes the line from service.
ISDN103	Manual action changes the state of a D-channel used for D-channel packet service.
ISDN104	The system loses synchronization on a D-channel used for D-channel packet service. A D-channel used for D-channel packet service removes the channel from service.
ISDN106	Layer one of a D-channel fails. The loop is set ManB, and the *I* fail flag is set.
ISDN107	The system does not restore the TEI.
ISDN108	The system restores the TEI.
ISDN109	The system restores an earlier failed D-channel to service. The loop is set idle (IDL) from DMB, and the *I* flag clears.
ISDN115	The attempted TEI assignments exceeds the maximum links allowed for a specified set of TEI links.
ISDN116	Action identifier is a TEI value not assigned before a terminal on the loop.
ISDN131	The number of BpVs on an ISDN line exceeds a threshold.

Logs created as a result of system action

The following table lists logs produced when automatic system tests or changes in some system state detect a fault.

Table 10-5 System tests or changes generate log reports. (Sheet 1 of 2)

Equipment	Name	Summary
LGCI, LCME	PM102	Source state change to SysB
	PM100	Diagnostic fail
	PM101	Checksum fail
	PM107	Resource state change to C-side busy
	PM113	Message congestion
	PM114	Load or test fail
	PM115	Miscellaneous reports
	PM116	Message error reports
	PM117	Trouble during normal operation
	PM118	Miscellaneous reports
	PM179	PM hardware exception reports
	PM180	PM software exception reports
	PM190	DCH state change to SysB
	PM192	DCH state change to C-side removed from service
	PM193	DCH state change to offline
	PM194	DCH state change from InSv to ISTb
	PM195	DCH state change to InSv
	PM198	DCH fault does not affect service
	PM199	DCH diagnostic results
	PM200	DCH load information
	PM235	DCH takeover occurs to SysB
Links	PM183	P-side link state to SysB
	PM187	Carrier state change to SysB

Table 10-5 System tests or changes generate log reports. (Sheet 2 of 2)

Equipment	Name	Summary
	PM188	Carrier protection switching cannot be put in traffic level
Lines	ISDN100	DCH ISDN line channel is not available for service
	ISDN101	DCH detects a terminal is not available for service
	ISDN102	DCH detects TEIs on same ISDN line
	ISDN103	State of the D-channel changes
	ISDN104	Sync is lost on a D-channel
	ISDN106	D-channel layer one failure
	ISDN107	TEI restore fails
	ISDN115	INFO subscription limits exceeded
	ISDN116	INFO TEI not assigned

Logs created as a result of user input

The system generates log reports that the following table contains. The system generates these log reports when the system detects a fault. The system detects a fault when the system takes action that a command at a MAP display specifies.

Table 10-6 The system generates log reports ISDN after command input (Sheet 1 of 2)

Equipment	Name	Summary
XPMs	IOAU112	Table REXSCHED entry changes
LGCI, LCME	PM100	Diagnostic fails
	PM101	Checksum fails
	PM102	State change to SysB
	PM103	State change to offline
	PM104	State change to not equipped
	PM105	State change to ManB
	PM106	State change from ManB to InSv

Table 10-6 The system generates log reports ISDN after command input (Sheet 2 of 2)

Equipment	Name	Summary
	PM114	Load or test failure
	PM191	DCH state change to ManB
	PM192	DCH state change to C-side removed from service
	PM193	DCH state change to offline
	PM195	DCH state change to InSv
	PM196	DCH removed from customer table DCHINV
	PM199	DCH diagnostic results
	PM200	DCH load information
	PM235	DCH takeover occurs
Links	PM182	P-side link state change to ManB
	PM184	P-side link state change to INSv
	PM188	RTS or protection switching
Lines	LINE100	Diagnostic pass
	LINE101	Diagnostic fail
	LINE107	Insulation test required
	LINE110	Foreign potential detected
	LINE118	Failure to connect metallic test access (MTA)

11 SMS-R related logs

Subscriber Carrier Module-100S Remote related logs

The Digital Multiplex System-100 (DMS-100) software uses logs to record all important events that occur. Logs make these events visible to operating company personnel at the MAP terminal. The following are examples of important events:

- equipment fault
- change in state of equipment
- successful completion or failure of a test

The log system in DMS-100 switch creates a report that contains this information. The log system stores the report in data store for online retrieval. The log system distributes the report to an output device(s) where the system displays the report.

The system normally displays log reports in the order that the reports occur. The log prioritizing feature allows the system to display log reports with the highest alarm level first.

The following table specifies:

- Subscriber Carrier Module-100S Remote (SMS-R) related logs
- the reasons why the system generated these logs
- the actions that operating company personnel should take

Descriptions and examples of logs that require additional explanation follow the table. Logs that require additional explanation include tuple change (TUPC) logs and RCS alarms and logs. The following table also details

remote concentrator SLC-96 (RCS) alarm reports that accompany PM128 logs and the response, which operating company personnel should take.

Table 11-1 SMS-R related logs (Sheet 1 of 7)

Log name	Causes	Response
ALT100	Short line diagnostics failed	Test the line card again. Test the other line cards in the line card carrier. If only one line card fails, replace that line card. If all line cards in the line card carrier fail, replace the line card carrier.
ALT101	Extended line diagnostics failed	Refer to ALT100.
IOAU112	the SMS-R has not had a routine exercise (REx) test for 7 days	Investigate why the system has not run REx on the SMS-R. Possible reasons include: • the REx is suspended for the SMS-R • the REX is disabled in table REXSCHED • a user used the TST command at the PM level to turn REx off manually • a user used parameter NODEREXCONTROL in table OFCVAR to turn REx off manually • the REx is disabled because the SMS-R is ISTb. If the SMS-R is ISTb, return the SMS-R to service so that the system can run the REx test.
LINE100	Line diagnostic passed	None (information only)
LINE101	Line diagnostic failed	Same as ALT100
NAG400	Hourly under the control of the NAG command. Lists information, including REx results, about all nodes not in service (InSv).	Take the necessary steps to return the node to service or enable the node for REx.
PM102	Peripheral module (PM) set to system busy (SysB)	Determine the reason, test and replace the defective cards, and return the PM to service.
PM103	PM placed off-line from manual busy (ManB) state	None (information only)
	PM added to inventory table while off-line and unequipped	None (information only)

Table 11-1 SMS-R related logs (Sheet 2 of 7)

Log name	Causes	Response
PM104	PM changed from off-line to unequipped state	None (information only)
	PM deleted from inventory table	None (information only)
PM105	PM changed to ManB state	None (information only)
PM106	PM returned to service	None (information only)
PM107	System or manual request changed PM to C-side busy (CBsy) state.	If the system requested the change, determine the reason. Test and replace the defective cards and return the PM to service.
PM108	Firmware or hardware error in peripheral processor (PP)	If the system generates the log for less than 2 min, there is no action required. If the system generates the log for more than 2 min or diagnostics fail, test and replace the defective cards. Return the PM to service.
PM109	DS-1 link set to SysB because of frame loss, bipolar violations in excess, or RCS digroup card failure. Accompanied by carrier group alarms.	If the system generates the log for less than 2 min, there is no action required. If this condition does not apply, check for faults at the RCS and at the SMS-R. If the SMS-R and RCS are not defective, isolate the fault. Isolate the fault to RCS repeater, central office (CO) repeater, or to the DS-1 link and associated repeaters.
PM110	Bipolar violation, frame loss, or frame slip thresholds are exceeded. The system also generates this log report when these levels are below threshold limits. Defective repeaters, RCS digroup cards, or DS-1 interface cards can cause this condition.	If normal levels return, there is no action required. If this condition does not apply, check for faults at the RCS and at the SMS-R. If the SMS-R and RCS are not defective, isolate the fault. Isolate the fault to the RCS repeater, central office repeater, or to the DS-1 link and associated repeaters.
PM111	DS-1 link returned to service.	None (information only)
PM114	Trouble encountered during a maintenance action (like load, test, initialization, or return to service).	Determine the reason, replace the defective cards, and return the PM to service.
PM128	PM or PM unit encountered trouble during normal operation, like the following:	If the system recovers, there is no action required. If the system does not recover, the system generates a PM102 log.

Table 11-1 SMS-R related logs (Sheet 3 of 7)

Log name	Causes	Response
	CMR card in RCC defective or CMR load mismatch	Busy the RCC, replace the CMR card (if defective), reload, and return to service.
	Hard parity fault	Busy the unit, replace the cards in the list, reload, and return to service.
	State of the two units changed because of a REX test failure.	Investigate the PM600 log for reasons for the REX failure.
	NT7X05 not present	The NT7X05 card data is in the correct inventory table. A maintenance action that involves the NT7X05 determines that the NT7X05 card is not in the correct slot. To correct this fault, follow NT7X05 card replacement procedures. Bsy the unit, install the NT7X05 card, and return-to-service (RTS) the unit.
	NT7X05 Fault Detected	The card may be operational, but the system detected a fault. The user should replace the card. To correct this fault, follow NT7X05 card replacement procedures. Busy the unit, install the NT7X05 card, and RTS the unit.
	Not operational or missing image file on the NT7X05	Set when the XPM unit does not have an operational image file on the NT7X05 card for one of several reasons: • a failed checksum indicates that the file has a corruption • an attempt to load with the file failed, loading from other files passed • the file is missing • the wrong file is present, that is, the wrong load as entered in the inventory table To correct this fault, execute a Bsy and RTS of the unit to dump the image manually.

Table 11-1 SMS-R related logs (Sheet 4 of 7)

Log name	Causes	Response
	Load file on the NT7X05 that is missing or not operational	Set when the XPM unit does not have an operational load file on the NT7X05 card for one of several reasons: • a failed checksum indicates that the file has a corruption • an attempt to load with the file failed, loading from other files passed • the file is missing • the wrong file is present, that is, the wrong load as datafilled in the inventory table To correct this fault, use the command string LOADPM INACTIVE CC NT7X05 to reload the NT7X05 card.
	REx test passed	None (information only)
	Diagnostic TESTALL fails	None (information only)
	REx warm SwAct occurred	None (information only)
	SwAct controller override occurred, failed, failed with a SwAct back to the originally active unit, or was aborted.	None (information only)
	At least one line of data entry on the remote terminal (RT) became unequipped.	The system generates a minor alarm. For information on clearing this alarm, refer to the table *"PM128 log reports that result from RCS alarms"* in this section.
	Unequipped lines detected in shelf <letter>, (A, B, C, D) cleared.	None (information only)
PM180	Encountered PM software exception (incorrect execution of software).	Software experts use this log report to troubleshoot software defects if there are defects. Keep the log report for trend analysis.
PM181	Hard parity fault	Busy the unit, replace the cards in the list, reload, and return to service.
	Soft parity faults at intervals	If both units are in service (CC brings ISTb unit back to service), there is no action required. If this condition does not apply, busy the unit, reload, and return to service.

Table 11-1 SMS-R related logs (Sheet 5 of 7)

Log name	Causes	Response
	CMR card fault	Busy the RCC unit, replace the CMR card if defective, reload, and return the unit to service.
	REx test failures	Test again manually and replace the defective cards.
	REx test passed	None (information only)
	Diagnostic TESTALL fails	None (information only)
	REx warm SwAct occurred	None (information only)
	Defective common controller cards in SMS-R	Busy the unit, replace the cards in the list, reload (if necessary), and return to service.
	Static data updated in SMS-R	None (information only)
	P-side port or node status mismatch	None (information only)
PM182	PM P-side link changed to ManB	None (information only)
PM183	PM P-side link changed to SysB	Verify that RCS digroup and SMS-R DS-1 interface cards are operational. Test the link with SMS-R posted at the PM level or with links posted at the carrier level.
PM184	PM P-side link returned to service	None (information only)
PM185	Firmware, hardware, or software detected error condition, which causes trap interrupt.	Software experts use this log report to troubleshoot software defects if there are defects. Keep this report and accompanying reports for trend analysis.
PM186	Maintenance limit or out-of-service limit exceeded on DS-1 links.	If normal levels return, there is no action required. If this condition does not apply, check for faults at the RCS and at the SMS-R. If the SMS-R and RCS are not defective, isolate the fault. Isolate the fault to the RCS repeater, CO repeater, or to the DS-1 link and associated repeaters.
PM188	DS-1 link protection switch occurred	None (information only)

Table 11-1 SMS-R related logs (Sheet 6 of 7)

Log name	Causes	Response
PM189	Parity audit failure	If accompanied by a PM181 log, replace the card listed, reload the unit, and return to service. If the log indicates a software program fault, reload the unit and return to service.
PM600	REx fail reasons	Records the maintenance actions performed on the SMS-R during the failed REx from the start of the REx to the step that failed. This information helps to identify the source of the REx failure.
	Warm SwAct	
	Warm SwAct turned off	
	PreSwAct audit failure	
	Autonomous SwAct	
	OOS tests of inactive unit 0	
	OOS tests of inactive unit 1	
	RTS of inactive unit 0	
	RTS of inactive unit 1	
	Achieving superframe/data sync of unit 0	
	Achieving superframe/data sync of unit 1	
	InSv tests of inactive unit 0 before SwAct	
	InSv tests of inactive unit 1 before SwAct	
	InSv tests of active unit 0 after SwAct	
	InSv tests of active unit 1 after SwAct	
	InSv tests of inactive unit 0 after SwAct	
	InSv tests of inactive unit 1 after SwAct	

Table 11-1 SMS-R related logs (Sheet 7 of 7)

Log name	Causes	Response
	RTS of inactive unit 0 after SwAct	
	RTS of inactive unit 1 after SwAct	
	Achieving superframe/data sync of unit 0 after SwAct	
	Achieving superframe/data sync of unit 1 after SwAct	
	SwAct controller refuses SwAct to unit 0	
	SwAct controller refuses SwAct to unit 1	
	SwAct back to unit 0 occurred	
	SwAct back to unit 1 occurred	
	Recovery failed — SwAct	
PM601	System generates PM601 when operating company personnel reset long term failure counters to zero for a XPM posted at the MAP terminal.	Keep this information log in a form that you can pass on for analysis. In the event of a later outage, refer this log to the Technical Assistance Service (TAS) and field support organizations.
	System generates PM601 when an XPM is deleted from datafill.	
PM777	NT6X69 message card failed to reset or failed to acknowledge first handshake.	Busy the unit, replace the card, reload, and return to service.
	IMC link fault	Isolate the fault to NT6X69 or NTMX77, busy the unit, replace the card, reload, and return to service.
	Invalid card under test	Make sure that all cards in the PM are in the correct slots.
	Memory parity fault	Isolate the fault to NTMX77, busy the unit, replace the card, reload, and return to service.
	CLASS modem resource (CMR) card in the RCC to the signaling processor (SP) timeout	Busy the RCC unit, replace the CMR card (if defective), reload, and return to service.

Log reports

The system generates log report LINE112 when a coin sticks in a coin telephone. The system generates log report LINE113 when the system encounters trouble with the ringing bus. Logs LINE112 and LINE113 can involve coin collect, coin return, coin presence, ringing line, and automatic number identification (ANI). For more information on these and related line logs, refer to the *Log Report Reference Manual*.

Using tuple change log reports

Tuple change (TUPC) logs track changes to tables as follows:

- TUPC100 records tuple additions
- TUPC101 records tuple deletions
- TUPC102 displays the old tuple before the change
- TUPC103 displays the new tuple after the change

The log report format and an example of each log report follow.

TUPC100 tuple added log

The log report format for TUPC100 is as follows.

```
TUPC100 <Date>  <Time>  <Log No.>  INFO  TUPLE CHANGED
 TABLE NAME:  <table name>
  <old tuple>
        CHANGED TO
    <new tuple>
```

An example of log report TUPC100 follows.

```
TUPC100 01:12:00  1000    INFO  TUPLE CHANGED
TABLE: LTCRINV
LTCRNAME FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC LOAD
                              CSLNKTAB
                               OPTCARD
    PECS6X45
RSC0 SMS-R 0 SME  15  54   31    BB  5  6X02PA ECR08BC1
     KRCC RCC 0                                        $
                           (10)  (11)  (12)  (13) $
                               MSG6X69                 $
            MX77AA MX77AA MX77NB03
```

TUPC101 tuple deleted log

The log report format for TUPC101 is as follows.

```
TUPC101 <Date> <Time> <Log No.> INFO TUPLE DELETED
  TABLE NAME:  <table name>
   <tuple that was deleted>
```

An example of log report TUPC101 follows.

```
TUPC101 01:12:00  1000    INFO  TUPLE DELETED
TABLE: LTCRINV
LTCRNAME FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC LOAD
                              CSLNKTAB
                               OPTCARD
           PECS6X45
RSC0 SMS-R 0 SME  15  54   31    BB  5   6X02PA   ECR08BC1
     KRCC RCC 0                                          $
                              (10)  (11)  (12)  (13)       $
                         MSG6X69                          $
              MX77AA MX77AA MX77NB03
```

TUPC102 tuple changed from log

The log report format for TUPC102 is as follows.

```
TUPC102 <Date>  <Time>  <Log No.>  INFO  TUPLE ADDED
  TABLE NAME:  <table name>
   <old tuple that was added>
```

An example of log report TUPC102 follows.

```
TUPC102 01:12:00  1000    INFO  TUPLE ADDED
TABLE: LTCRPINV
PMTYPE PMNO
                         PSLNKTAB
RSC1 SMSR 0
    (0 DS1 DEFAULT N) (1 DS1 DEFAULT N) (2 NILTYPE)
    (3 NILTYPE) (4 DS1 DEFAULT) (5 NILTYPE)
    (6 NILTYPE) (7 NILTYPE) (8 NILTYPE)
    (9 DS1 NILTYPE N) (10 DS1 DEFAULT N) (11 NILTYPE)
    (12 NILTYPE) (13 NILTYPE) (14 NILTYPE) (14 NILTYPE)
    (15 NILTYPE) (16 NILTYPE) (17 NILTYPE) (18 NILTYPE)
    (19 NILTYPE)  $
```

TUPC103 tuple changed to log

The log report format for TUPC103 is as follows.

```
TUPC103 <Date> <Time> <Log No.> INFO  TUPLE CHANGED TO
  TABLE NAME:  <table name>
   <new tuple>
```

An example of log report TUPC103 follows.

```
TUPC103 01:12:00  1000    INFO  TUPLE CHANGED TO
TABLE: LTCRPINV
PMTYPE PMNO
                    PSLNKTAB
RSC1 SMSR 0
    (0 DS1 DEFAULT N) (1 DS1 DEFAULT N) (2 NILTYPE)
    (3 NILTYPE) (4 DS1 DEFAULT) (5 NILTYPE)
    (6 NILTYPE) (7 NILTYPE) (8 NILTYPE)
    (9 DS1 NILTYPE N) (10 DS1 DEFAULT N) (11 NILTYPE)
    (12 NILTYPE) (13 NILTYPE) (14 NILTYPE) (14 NILTYPE)
    (15 NILTYPE) (16 NILTYPE) (17 NILTYPE) (18 NILTYPE)
    (19 NILTYPE)  $
```

SS100—special services log

The system generates SS100 log reports when an audit or operating company personnel add or remove nailed-up connections. The system displays these log changes in the SMS-R.

Log SS100 is an information-only log that specifies the following:

- the connection removed or added
- the log results from manual operation or audit
- the end points involved in the connection are special service lines or DS-1 channels
- operation completed or the system encountered a problem in messaging with the SMS-R

If the system finds a problem, table PSNAILUP immediately updates. The system relays connection information to the SMS-R during a future audit. A SUCCESSFUL or TABLE ONLY output indicates the result.

The log report format for SS100 is as follows.

```
SS100  mmmdd hh:mm:ss ssdd INFO  P-SIDE NAILED-UP CONNECTION
srctxt opertxt  outtxt
end1nm
end2nm
abinfo
```

An example of log report SS100 follows.

```
SS100  DEC15 15:30:00 1234 INFO P-SIDE NAILED-UP CONNECTION
MANUAL ADDITION SUCCESSFUL
RCS REM1 01 01 01 01
SMS-R 10 10 17
ABINSERT ENABLED
```

Digital phase lock loop clock failure information

The system generates log PM189 sync_was_lost to inform operating company personnel of lost sync in the SMS-R without the loss of messaging. The system generates log PM189 big_sync_hit when the system encounters a large out-of-phase reading. The log descriptions follow, with log report formats and examples of reports.

Sync_was_lost log

The system generates log PM189 sync_was_lost when an SMS-R returns to service. The SMS-R lost sync the last time SMS-R was in service. The CC did not acknowledge the sync diagnostic failure message.

The log report format for sync_was_lost is as follows.

```
PM189 <Date>  <Time>  <Log No.> TBL  PM SW EXCEPTION REPORT
    <pm> <pmno> UNIT <unit no> : <activity>
 TASKID:<taskid><taskname>,TIME:<xpmtime>,COMID:<comid>
    TEXT: <text>
```

An example of log report sync_was_lost follows.

```
PM189 JAN01 16:56:23 9554  TBL  PM SW EXCEPTION REPORT
   LTC 0 UNIT 0 :  Inact
   TASKID: 00170017 SYNC, TIME: 00:01:32.88, COMID: FF NILC
   TEXT:  Sync_was_lost 00 00 00
```

Big_sync_hit log

The system generates log PM189 big_sync_hit when an SMS-R encounters a large out-of-phase reading.

The log report format for big_sync_hit is as follows.

```
PM189  <Date>  <Time>  <Log No.> TBL  PM SW EXCEPTION REPORT
   <pm> <pmno> UNIT <unit no> : <activity>
  TASKID: <taskid> <taskname>, TIME:<xpmtime>,COMID: <comid>
    TEXT:  <text> <hit>
```

An example of log report big_sync_hit follows.

```
PM189  JAN01  16:56:23  9554  TBL  PM SW EXCEPTION REPORT
   LTC 0  UNIT 0 :  Inact
   TASKID:  00170017 SYNC, TIME: 00:01:32.88, COMID:  FF
NILC
   TEXT:  Big_sync_hit 00 50
```

PM600 REX failed log report

The system generates log PM600 when an SMS-R REx test fails. Log PM600 provides a record of the steps that occurred during the REx from start, to the test that failed. Log PM600 includes any recovery actions that REx initiated. Log PM600 helps to determine the cause of the SMS-R REX failure. An example of log report PM600 follows.

```
  ** PM600 JUN08 01:28 8600 TBL REX FAILED SMSR 0
Node:ISTb, Unit 0 Act:InSv, Unit 1 Inact:SysB (Diag Failed)

REX Step  Unit Start Time Failure Reason
Tst Inact   0  09:17:33
Bsy Inact   0  09:17:47
RTS Inact   0  09:18:15
Sync Inact  0  09:21:43
PreSwAct    0  09:21:51
Warm SwAct  –  09:22:37
Bsy Inact   1  09:22:40
RTS Inact   1  09:23:08
Sync Inact  1  09:25:27
Tst Act     0  09:22:50  REX test failed—InSv tests of active
                            Unit 0 after Swact
Warm SwAct  –  09:25:28
Bsy Inact   0  09:25:29
Finished    –  01:28:25
Supplemental Data
Diagnostic Failures: UTRDIAG
Site Flr RPos Bay_id Shf Description Slot EqPEC
HOST 01   L15 LTE 00 65  LTC : 000    15   6X92
```

PM601 PM diagnostics history log

The system generates log report PM601 when operating company personnel reset long term failure counters. Operating company personnel reset counters to zero for an XPM posted at the MAP display. The system also generates PM601 when an XPM is deleted from datafill. The PM601 summarizes the history of diagnostic failures collected from the earlier reset time. Keep this log for analysis in the event of a later outage. An example of log PM601 follows.

```
PM601 AUG20 09:44:15 2741 INFO XPM Diagnostic History
RCC 1
Reset Long Term Failure (LTF) counts
LTF last reset: 92/07/01  06:22:10
Summary of LTF counts prior to reset:
                     UNIT 0      UNIT 1
DIAGLIST
       AB DIAG         1             1
       SPCH DG         0             1
     ---------------------------------
       CARDLIST
       NT6X44          1             1
       NT6X41          0             1
       NT6X69          0             2
```

RCS alarms and logs

Alarms cause the log subsystem to generate PM128 logs. The PM128 logs indicate a change of state from InSv to ISTb in an RCS. This log report includes the following information:

- the alarm that caused the state change
- the reason for the alarm
- the recommended actions to clear the alarm

When multiple alarms occur, the most important alarm appears in the log.

> ***Note:*** When an alarm occurs for multiple reasons, the most important reason appears in the log. The system also generates PM128 logs when the alarm on an RCS changes from minor ISTb to major ISTb. Both minor and major alarms cause an RCS to become ISTb.

An example of log report PM128 follows.

```
PM128 mmdd hh:mm:ss  ssdd TBL ISTB pmid   FROM:  sttxt1, opttxt
```

An example of log report PM128 follows.

```
PM128 APR01 12:00:00 2112 TBL ISTB RCS RCS0 01 0   FROM:  InSv,
REASON: minor: protection switched for shelf A
```

The log system generates PM128 logs when problems occur that can affect service. The following are examples of faults that affect service:

- a loss of commercial ac power to the RCS
- failure of equipped ringing generators

Examples of faults that do not affect service include disabling a protection link and a fault on a protection link.

Note 1: The system generates log report PM102 if the system cannot resolve the problem automatically. Perform the action that log report PM102 recommends.

Note 2: A log report lists only the most important alarm or the most important reason for alarm. To find all alarms against an RCS, enter the QUERYPM FLT command against that RCS. Enter the QUERYPM FLT command at the PM level of the MAP terminal.

The system generates PM128 log when the Subscriber Module SLC-96 Remote (SMSR) sends the alarm condition. When the alarm condition indicates an unequipped line of data entry on the remote terminal, the log report indicates the shelf affected. An example follows.

```
PM128 FEB13 13:54:12 6200 TBL ISTB RCS ERCS 00 1
   FROM: InSv minor: Unequipped line(s) detected in Shelf A
```

When the system does not detect any unequipped datafilled lines on the remote terminal, the system generates another PM128 log. This log indicates that the alarm was cleared. An example follows.

```
PM128 FEB14 14:11:37 7200 TBL ISTB RCS ERCS 00 1
   FROM: ISTb minor: Unequipped line(s) detected in Shelf A
   cleared
```

The following table describes RCS alarm reports that accompany PM128 logs and recommended responses for operating company personnel.

Table 11-2 PM 128 log reports that result from RCS alarms (Sheet 1 of 7)

Log report	Description	Action required
Major: power/misc.	Indicates that the RCS lost commercial ac power or a customer-assigned alarm occurred (like gas, flood, or cabinet door open). The text in the PM128 log is data entry in the MISCTEXT and ALMSEVER fields of table RCSINV. For details on how to enter data for table RCSINV, refer to the data schema section of the *Translations Guide*.	Make sure the backup emergency battery activates to supply power, and wait for commercial power to return. For customer-assigned, miscellaneous alarms, consult the operating company list of possible faults. For example, the power unit failed or shut down because of over-voltage or over-current. One possible action is to replace the power unit card.
Major: ringing generator failure	Indicates that equipped ringing generators failed or that ringing generator fuses blew. Subscriber lines cannot ring.	Replace the blown ringing generator fuses or failed ringing generators.
Major: shelf A: DDL out of sync	Indicates that derived data link (DDL) messaging on the A-link is not synchronized for a Mode I shelf group.	Perform the same action as “major: shelf <letter> DDL messaging lost," but focus on link A.
Major: shelf <AB or CD>: DDL out of sync	Indicates the state of derived data link messaging on links A or C, or both A and C. The derived data link messaging is not synchronized for a Mode II shelf group.	Perform the same action as “major: shelf <letter> DDL messaging lost."

Table 11-2 PM 128 log reports that result from RCS alarms (Sheet 2 of 7)

Log report	Description	Action required
Major: shelf alarm	Indicates a major shelf alarm on the RCS. One or more additional alarms, described in the following section, accompany the shelf alarm.	Post the RCS at the PM level of the MAP display. Issue the QUERYPM FLT command to determine which alarms are present. A list of alarms for the ISTb RCS appears at the MAP display.
Major: shelf <letter>: far end fault	Indicates the RCS detects a failure on the link for the listed shelf (A, B, C, or D). The RCV light on the TRU card lights when a far-end fault alarm occurs.	Perform the same action as “major: shelf <letter>: LCGA."
Major: shelf <letter>: DDL messaging lost	Indicates that DDL messaging is lost to a shelf group (AB or CD, or both). Several faults cause this message. When this message occurs, one of the following is defective: • DS-1 link (A or C) • DLU card • LIU card • SMS-R DS-1 card • DS-1 repeater	Post the RCS at the PM level of the MAP display and issue the QUERYPM FLT command. Note which alarms are present. Additional alarms, like “alarm synchrony lost," accompany this alarm.

Table 11-2 PM 128 log reports that result from RCS alarms (Sheet 3 of 7)

Log report	Description	Action required
	If no local carrier-group alarm or far-end fault alarms are present, the following are not defective: • DS-1 links • DS-1 repeaters • LIU cards • Subscriber Carrier Module-100S DS-1 cards • TRU cards The problem can be a defective DLU card. If the DLU card is defective and a Mode II shelf group uses the C link, DDL messaging is lost. The DDL messaging is lost on both shelf groups.	A DDL messaging loss accompanied by a local carrier-group alarm or remote end fault indicates a carrier problem. To check the links, issue the FELP command and run associated tests. Along with the link tests, check the SMS-R DS-1, LIU, and TRU cards.
Major: shelf <letter>: LCGA	Indicates that the SMS-R detects a failure on the link for the listed shelf (A, B, C or D). A major alarm indicates service to eight or more subscribers is lost.	Post the SMS-R where the RCS connects at the CARRIER level of the MAP terminal. If a protection switch is provisioned, protection switch the link. The DS-1 links display at the CARRIER level with the posted SMS. Check fields ALARM, BPV, SLIP, and FRAME for the cause of the local carrier group alarm. For example, if the SMS-R DS-1 card is not present, the text CARD appears under the ALARM field. The BPV field lists excessive bipolar violations (BpV). Post the RCS and issue the command QUERYPM LINK to check faults on DS-1 links.

Table 11-2 PM 128 log reports that result from RCS alarms (Sheet 4 of 7)

Log report	Description	Action required
		Make sure the SMS-R DS-1 Interface is installed. Test the DS-1 card. If the DS-1 card is not defective, check the LIU and TRU cards on the RCS. If these cards are not defective, or the fault persists after you replace these cards, check the DS-1 line and repeaters. Issue the FELP command to enable loopback on the carrier. Follow procedures to check specified sections of the DS-1 line and specified repeaters.
Major: shelf<letter>: port is closed	Indicates that the DS-1 link for the shelf listed (A, B, C, or D) is manually or system busy. When a SysB DS-1 link causes this alarm, the alarm accompanies the local carrier group alarm.	If the link is manual busy, use the RTS command from the PM level of the MAP display. Use the RTS command to return the link to service. If the link is system busy, make sure that the SMS-R is in service and post the SMS-R at the CARRIER level. The DS-1 links that connect to the SMS-R appear on the MAP display. Check the ALARM, BPV, FRAME, and SLIP fields for the cause of the alarm. If excessive bipolar violations (BpV) occur, for example, issue the FELP command from the CARRIER level of the MAP display. This command enables loopback on the DS-1 link. Follow operating company procedures to check sections of the link and associated repeaters. The DS-1 line and repeaters, SMS-R DS-1 card, LIU, and TRU can cause the fault. The causes are the same for the LGCA alarm.
Minor: alarm sync lost	Indicates a loss of alarm synchronization. The system clears alarm messages from the RCS and any alarm messages sent are invalid.	Post the associated SMS-R and issue the QUERYPM FLT command. If only the alarm synchronization alarm is present, check the ACU card. Make sure that the ACU card is installed and that alarm card matches the type entered in table RCSINV. If datafill is correct and the card is installed, replace the card.
Minor: Local Carrier Group Alarm on protection link	Indicates that the protection link failed toward the SMS. The system cannot use the link cannot for protection switching.	Perform the same action as “major: shelf <letter> LCGA."

Table 11-2 PM 128 log reports that result from RCS alarms (Sheet 5 of 7)

Log report	Description	Action required
Minor: PCM loop test failed on shelf group <AB or CD>	Indicates the pulse code modulation (PCM) looping test, run in Mode II to check a DS-1 channel, failed. If it failed on more than one shelf group, the log lists the most important shelf group (AB, CD). A single PCM looping test failure causes a minor alarm. The system removes the channel and associated line card from service when a PCM looping test fails. The system normally tests card and channel and returns card and channel to service if card and channel pass the test.	The PCM looping test can fail continuously, or fail often, on one channel, with the loop test the only alarm present. In this event, suspect the associated line card. If the PCM looping test fails on multiple channels repeatedly, suspect the TAU card. Check the alarm light on the TAU card. If the alarm light is ON, replace the card. Remember that replacement of the TAU card takes activity on the shelf group down. If the TAU card is not defective, replace the line cards associated with the defective channels.
	If the PCM looping test fails on more than one DS-1 channel-card combination, the DMS raises a major alarm. The system removes from service the shelf group where the multiple failures occurred. PCM looping test failures are normally isolated occurrences.	If other faults cause a PCM looping test failure, additional alarms accompany these faults. This table describes these alarms.
Minor: protection link out of service	Indicates that the protection link is manually or system busy.	Issue the RTS command at the CARRIER level of the MAP display to return to service a manual busy protection link. The system tests a system-busy link and a link with a local-carrier group alarm fault the same way. Perform the same action for “alarm major: shelf <letter>: LCGA."

Table 11-2 PM 128 log reports that result from RCS alarms (Sheet 6 of 7)

Log report	Description	Action required
Minor: protection switched for shelf <letter>: <reason>	Indicates that the DS-1 link for the listed shelf is manually or automatically protection switched. The SMS-R or the RCS detected a fault. The PROTSW command at the CARRIER level of the MAP display manually releases a manual protection switch. A protection switch activated automatically indicates a problem. Normally, faults on the DS-1 line cause a protection switch to occur.	Issue the QUERYPM FLT command and check log reports to find the problem(s) that caused the protection switch. Perform the same action as “alarm major: shelf <letter>: LCGA."
Minor: protection switching disabled for shelf <letter>	Indicates protection switching is disabled for the listed shelf. If more than one shelf is disabled for protection switching, the log message lists the most important shelf. (The order is A, B, C, and D). All shelves appear in the QUERYPM MAP display of alarms.	Post the associated SMS-R at the CARRIER level of the MAP display to activate a disabled protection switch. Issue the PROTSW ENA command to enable the link for protection switching again.

Table 11-2 PM 128 log reports that result from RCS alarms (Sheet 7 of 7)

Log report	Description	Action required
Minor: set by RCS	Indicates that the RCS detects a fault, normally a protection link fault, that prevents protection switching.	Perform the same action as “major: shelf <letter> LCGA."
Minor: unequipped line(s) detected in shelf <letter>, (A, B, C, D)	Indicates that at least one entered line on the RT is unequipped. ***Note:*** The line state is set to the line module busy (LMB) state when the RT that interfaces the line card is out-of-service (OOS). The line state is also set to the LMB state when the RT indicates that the line is unequipped.	Insert a line card or remove the data entry in the computing module (CM) for the missing line card. After insertion of a line card, the DMS-100 system will RTS the line within 20 s. If removal of CM datafill for the missing line card occurs, perform a BSY/RTS on the subscriber loop carrier (SLC). This action updates the line state in the XPM. If the line is idle and removal of datafill occurs, the DMS-100 system updates the line state in the XPM automatically.

12 RLCM related logs

Remote Line Concentrating Module related logs

The peripheral module (PM) series of Digital Multiplex System (DMS) logs indicate conditions, state changes, and other important events in the line peripherals of the DMS. A number of the PM logs apply to the line concentrating module (LCM) and remote maintenance module (RMM) parts of the Remote Line Concentrating Module (RLCM). These PM logs appear in the following table. The table provides a short description of the log, the cause of the log, and recommended responses to the log.

Logs PM128 and PM181 indicate a traffic overload condition in the RLCM. The system generates PM128 with the phrase LCM Out of Overload when normal call processing resumes.

Table 12-1 RLCM related logs (Sheet 1 of 12)

Log name	Causes	Response
IOAU112	The software does not perform a routine exercise (REX) on the RLCM for 7 days.	Investigate the reason that the software did not run REX on the RLCM. Possible reasons include: REX is • suspended for the LCM • disabled in table REXSCHED • manually turned off with the TST command at the PM level • manually turned off through table OFCVAR with parameter NODEREXCONTROL • disabled because the LCM is in-service trouble (ISTb). If the LCM is ISTb, correct to return the LCM to service so that the software cam run the REX test.
NAG400	Hourly under control of the NAG command. Lists information, that includes REX results, about all nodes not in-service (INSV).	The operating company personnel must take steps to return the node to service or have the node REX enabled. The operating company personnel must enable the node if that is the correct action. The action of the operating company personnel depends on review of the log report. ***Note:*** The LCMs display LCM_REX and LCM ring continuity and converter voltages (LCMCOV_REX) test results. A colon separates the test results. A status of N/A indicates the LCMCOV_REX test does not run on the different LCM. The LCMCOV_REX tests are performed on LCMs, XLCMs, OPMs, and RLCMs.
Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.* ***Note 2:*** Refer to *Card Replacement Procedures.*		

Table 12-1 RLCM related logs (Sheet 2 of 12)

Log name	Causes	Response
PM100	Indicates the RMM failed a diagnostic test.	Perform the diagnostic test again. The system produces a card list. Replace the first defective card. Refer to notes 1 and 2.
PM101	Indicates the LCM or remote maintenance module (RMM) fails a checksum test. The DMS-100 switch can not get a data integrity value from the PM or value is not correct.	Repeat the checksum test. Refer to note 1.
PM102	Indicates system request changes the LCM or RMM to the system busy (SysB) state.	Determine the cause of the SysB alarm. Post and test the RLCM. Refer to notes 1 and 2 .
PM103	Indicates that a manual request places the LCM or RMM offline (OFFL) from the manual busy (ManB) state.	There is no action required.
PM104	Indicates that the LCM or RMM is changed manually from the OFFL state to unequipped (Uneq). Deletion of the tuple in table LCMINV corresponding to the RLCM causes the change.	There is no action required.
PM105	Indicates the LCM or RMM is manually busied (ManB).	There is no action required.
PM106	Indicates a system request returns the LCM or RMM returned to service (RTS) from the SysB state. This log also indicates a manual request returns the LCM or RMM to service form the ManB state.	There is no action required.
PM107	Indicates that a system request causes the LCM or RMM to change to the central-side busy (CBsy) state.	Post and test the affected LCM or links. Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 12-1 RLCM related logs (Sheet 3 of 12)

Log name	Causes	Response
PM108	Indicates a firmware or hardware error is detected in the RLCM processor card. Log PM108 identifies the error and the possible defective card.	If the system generates PM108 for less than 2 min, there is no action required. If the system generates PM108 for more than 2 min,, post and test the LCM. Replace indicated cards. Refer to notes 1 and 2.
PM109	Indicates a DS-1 link between the host LGC/LTC and the RLCM changes to a peripheral-side busy (PBsy) state. A SysB DS-1 carrier line causes this action to occur.	If the system generates PM109 for less than 2 min, there is no action required. If the system generates the PM109 for more than 2 min, the DS-1 carrier requires trunk maintenance. Refer this problem to the trunks maintenance group.
PM110	Indicates a DS-1 link between the host LGC/LTC and the RLCM reaches a service count threshold like bipolar violations.	If the system clears the limit, there is no action required. If the system does not clear the limit, the DS-1 links require trunk maintenance. Refer this problem to the trunks maintenance group.
PM111	Indicates a DS-1 link between the host LGC/LTC and the RLCM is RTSed.	There is no action required.
PM113	Indicates the RLCM processor card encounters message congestion. Message congestion can occur on high traffic days.	If the system generates PM113 for less than 2 min, there is no action required. If the system generates PM113 for more than 2 min, determine the cause of the congestion. Correct the congestion.
PM114	Indicates that a problem occurs during an attempt to load or test LCM or RMM.	Test the LCM or RMM. The system generates an alarm and card list. Refer to notes 1 and 2.
PM115	Indicates that the RLCM processor encounters different problems during normal operation.	If the system generates less than three PM115 in 2 min, there is no action required. If the system generates more than PM115 in 2 min, test the RLCM. Refer to notes 1 and 2.
PM116	Indicates that the RLCM sends a message error report to central control (CC).	A PM108, PM115, PM124, PM125, PM126, or PM138 report immediately precedes this report. Ignore this report and investigate the preceding report.

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 12-1 RLCM related logs (Sheet 4 of 12)

Log name	Causes	Response
PM117	Indicates that RLCM operation encounters a link-related problem.	Test the RLCM. The system generated an alarm and card list. Refer to notes 1and 2.
PM118	Indicates the RLCM processor encounters different problems.	If the system generates less than three PM115 reports in 2 min, action is not required. If the system generates more than three PM115 reports in 2 min test the RLCM. If the system does not find a fault, the load can be corrupt. When this condition occurs, load the RLCM again. Refer to notes 1 and 2.
PM120	Indicates that the CC node audit find one or more RLCM processor error counters that contain values that are not zero. The counters are reset to zero.	Check for continuing reports from the same PM during normal operation. Collect PM120 reports. If you find PM120 reports for the same RLCM or RMM test the RLCM or RMM. Refer to notes 1 and 2.
PM122	Indicates the RLCM processor exception report is encountered during normal operation.	Refer to the Command Protocol Violations Table of PM122 description in *Log Report Reference Manual* for the problem this report indicates.
PM124	Indicates the RLCM processor encounters different problems during normal operation.	Refer to the Command Protocol Violations Table of PM124 description in *Log Report Reference Manual* for the problem this report indicates..
PM125	Indicates the system detects a firmware or hardware error in the RLCM processor.	Test the RLCM. Refer to notes 1 and 2.
PM126	Indicates the RLCM processor encounters different problems during normal operation.	Test the RLCM. If the system does not find a fault, the load can be corrupt. When this condition occurs, load the RLCM again. Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 12-1 RLCM related logs (Sheet 5 of 12)

Log name	Causes	Response
PM127	Indicates the high-level data link control (HDLC) link between the host office and the RLCM has been forced out of service.	Link maintenance can be required. The RLCM can be forced to emergency stand-alone (ESA) operation. Make sure the RLCM returns to normal operation when the system restores the link.
PM128	Indicates the RLCM encounters trouble during normal operation. This condition causes the state of the PM to change to in-service trouble (ISTb). Service is not affected. The system also generates log PM128 as a result of a routine exercise (REx) test failure.	Post and test the indicated RLCM or manually repeat the REX test that causes the log report. Note the alarm and card list that result. Refer to notes 1 and 2.
PM132	Indicates the result of an office-level (LCM-level) tip/ring reversal relay test (BRT) of a bus interface card (BIC), NT6X54, in an RLCM line drawer. The log indicates passed, failed, or `test not run...` conditions.	If the log indicates test passed, there is no action required. Check the associated PM181 report if the test is not run. Run a manual BRT test if the test failes. This action produces a PM181 report and an ISTb alarm. Refer to notes 1 and 2.
PM179	Indicates that a software condition occurs that affects the normal operation of the RLCM. PM179 supplies information that relates log to a *PM Hardware Exception Report*.	Refer to the description of PM124 in *Log Report Reference Manual* for problems and responses this report indicates.
	Features AF5911 and AF5912 add the Talk battery failure detected and Cannot test talk battery modifications to log PM179 report.	Refer to description of PM179 in *Log Report 7Reference Manual*, for problems and responses this report indicates.

	Example log report LCM talk battery failure detected.	`*** PM179 JUN22 15:47:20 3114`
		`TBL PM HW EXCEPTION REPORT`
		`LCM RSC0 00 0 Unit 1`
		`Talk Battery Failure detected`
		`on shelf 54 by RSC0 00 1 12 30`

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 12-1 RLCM related logs (Sheet 6 of 12)

Log name	Causes	Response
	Example log report Cannot test talk battery.	`* PM179 JUN22 20:17:06 5214 TBL PM HW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 Cannot test Talk Battery on shelf 54 since no WLC provisioned.`
PM180	Indicates that a PM exception report that is not requested was received from the LCM. Feature AF5890 adds the XLCM real-time overload field to this log report.	Collect all PM180 reports and contact next level of support.
	Example log report LCM enters overload	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM enters overload: DMSX: 5 IUC: 0 SEQ: 0 RT OVLD:medium (4/9,A8)`
	Example log report LCM overloaded	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM overloaded: DMSX: 45 IUC: 4 SEQ: 3 RT OVLD:medium (2/9,58)`
	Example log report LCM out of overload. The new information includes DMSX and Inter-unit communications (IUC) message lost totals up to 65,535. The peak real-time distress during the overload period and the duration of the overload period in minutes up to 255.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 LCM out of overload: Total DMSX:1234 Total IUC:1230 SEQ: 3 RT OVLD peak: High (2/9,58) Duration: 25 mins`

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 12-1 RLCM related logs (Sheet 7 of 12)

Log name	Causes	Response
	Example log report invalid real-time control variables. When the overload period ended, the XLCM found one or more of its real-time control variables did not return to a normal state. When this log is not present, the technician knows the XLCM deactivated all of the XLCM realtime overload protection mechanisms. XLCM capacity is not affected.	** PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT LCM RSC0 00 0 Unit 1 TASKID: 000B TIME: 8081 TEXT: INV RT CTL 5267 0000 4C14 0001 0064 424A2555 7676 839F 5311 52AE 839F 00F6 8399 99D2
PM181	Indicates the LCM failed a diagnostic test.	This log indicates a failure in an automatic test. The failure in an automatic test can be repeated manually to produce a card list. Refer to the description of PM124 in *Log Report Reference Manual* for the problems and responses this report indicates..
	In this log output, an x digital subscriber line (xDSL) line card (xLC) was added to table LNINV. The drawer for the table does not support the high speed data traffic of the 1-Meg Modem Service (1MMS). The line installed functions as a standard voice line only.	PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 PHYSICAL DRWR 0 DOES NOT SUPPORT xDSL DATA TRAFFIC No action required.

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 12-1 RLCM related logs (Sheet 8 of 12)

Log name	Causes	Response
	In this log output, an xLC was added to table LNINV. The drawer for the table supports the high speed data traffic of the 1MMS. The line drawer contains more xLCs than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 MAXIMUM NO (30) OF xDSL LINES PER PHYSICAL DRWR EXCEEDED MEMBERS PER PHYSICAL DRWR EXCEEDED` The whole line drawer is at risk of failure because the drawer is operating beyond its thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL and has room for expansion • upgrade another LCM line drawer with a data-enhanced bus interface card (DBIC) and move this xDSL line card to that drawer • enter the CI level QXNET VERIFY command to verify the xDSL line card assignments
Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.* ***Note 2:*** Refer to *Card Replacement Procedures.*		

Table 12-1 RLCM related logs (Sheet 9 of 12)

Log name	Causes	Response
	In this log output, an xLC was added to table LNINV. The drawer contains more xLCs in a vertical row than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFOLCM HOST 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = HOST 00 1 00 12 MAXIMUM NO OF xDSL LINES PER VERT ROW EXCEEDED MAX MEMBERS (2) of xDSL LINES PER VERT ROW EXCEEDED` The whole line drawer can fail because the drawer is operating beyond the thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPAND command to locate another row in the same drawer for the xDSL line card • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL
PM182	Indicates a peripheral side (P-side) DS30A link between the LCM and host interface equipment (HIE) becomes ManB. Also indicates when a P-side link between the RMM and HIE becomes ManB.	There is no action required.
PM183	Indicates that a system request changed an LCM or RMM P-side link to SysB.	An alarm must be present. If an alarm is not present, test the RLCM. Refer to notes 1 and 2.
PM184	Indicates an LCM or RMM P-side link is RTS.	There is no action required.
PM185	Indicates when LCM firmware, hardware, or software detects an error condition. The error condition causes a trap-interrupt. The running process stops on the instruction at fault.	Retain all of the reports that the system generated during the minute before the error condition occurred. Contact the next level of operating company maintenance.

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

Table 12-1 RLCM related logs (Sheet 10 of 12)

Log name	Causes	Response
PM300	Indicates RMM firmware, hardware, or software detects an error condition. The error condition causes a trap-interrupt. The running process stops on the instruction at fault.	Retain all of the reports that the system generated during the minute before the error condition occurred. Contact the next level of support.
Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*		
Note 2: Refer to *Card Replacement Procedures.*		

Table 12-1 RLCM related logs (Sheet 11 of 12)

Log name	Causes	Response
PM600	REX fail reasons • Warm SWACT • Warm SWACT turned off • PreSWACT audit failure • Autonomous SWACT • OOS tests of inactive unit 0 • OOS tests of inactive unit 1 • RTS of inactive unit 0 • RTS of inactive unit 1 • Achieves superframe/data sync of unit 0 • Achieves superframe/data sync of unit 1 • INSV tests of inactive unit 0 before SWACT • INSV tests of inactive unit 1 before SWACT • INSV tests of active unit 0 after SWACT • INSV tests of active unit 1 after SWACT • INSV tests of inactive unit 0 after SWACT • INSV tests of inactive unit 1 after SWACT • RTS of inactive unit 0 after SWACT • RTS of inactive unit 1 after SWACT	Log PM600 records the maintenance actions performed on the LCM during the failed REX. Log PM600 records the maintenance actions from the start of the REX to the failed step. Use this information to pinpoint the source of the REX failure.
Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*		
Note 2: Refer to *Card Replacement Procedures.*		

Table 12-1 RLCM related logs (Sheet 12 of 12)

Log name	Causes	Response
	REX fail reasons continued • Achieves superframe/data sync of unit 0 after SWACT • Achieves superframe/data sync of unit 1 after SWACT • SWACT to unit 0 refused by SWACT controller • SWACT to unit 1 refused by SWACT controller • SWACT back to unit 0 occurred • SWACT back to unit 1 occurred • Recovery failed—SWACT	
PM777	Indicates a defective card and card location.	Refer to notes 1 and 2.

Note 1: Refer to *Alarm Clearing and Performance Monitoring Procedures.*

Note 2: Refer to *Card Replacement Procedures.*

ESA log reports

The maintenance log reports the system generates during emergency stand-alone (ESA) appear in the table table that follows. The table provides a short description of each log, the cause of the log, and recommended responses

to the log. For a complete description of these logs and additional response information, refer to *Log Report Reference Manual*.

Table 12-2 ESA related logs (Sheet 1 of 2)

Log name	Causes	Response
ESA101	The ESA subsystem generates this report during a remote ESA static data load. The number of automatic lines (AUL) that ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in customer tables. The number of non-POTS AUL lines in the customer tables must be less than or equal to 63 for RLCM.
ESA102	The ESA subsystem generates this report during a remote ESA static data load. The report warns that the number of Meridian Digital Centrex (MDC) customer groups that ESA supports, for the remote site, exceeds the maximum. The members of the overflow groups are treated as POTS lines.	To maintain full support in ESA, configure the remote site again. Change datafill in customer tables. The number of non-POTS AUL lines in customer tables must be less than or equal to 63 for RLCM.
ESA103	The ESA subsystem generates this report during a remote ESA static data load. The number of ESA prefix translators, ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change the datafill in customer tables. The total number of ESA prefix translators for the remote site must be less than or equal to 272 for RLCM.
ESA104	The ESA subsystem generates this report during a remote ESA static data load. The number of MDC extension translators, ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in customer tables. The total number of MDC translators for the customer groups must be less than or equal to 256 for RLCM.
ESA105	The ESA subsystem generates this report during a remote ESA static data load. The number of directory numbers (DN) that ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in line tables. The number of DNs in the remote site must be is less than or equal to 640 for the RLCM.
ESA106	The ESA subsystem generates this report during a remote ESA static data load. The number of hunt groups ESA supports, for the remote site exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in hunt tables. The number of hunt groups, in the RSC, must be less than or equal to 26 for RLCM.

Table 12-2 ESA related logs (Sheet 2 of 2)

Log name	Causes	Response
ESA107	The ESA subsystem generates this report during a remote ESA static data load. The number of hunt members ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in hunt tables. The number of lines for hunt groups must be less than or equal 520 for the RLCM.
ESA108	The ESA subsystem generates this report during a remote ESA static data load. A change in the data is detected. When data changes, loss of ABCD table data occurs. Call termination does not occur on the affected lines.	Load the affected data again through the MAP display.

13 Star Remote System related logs

Star Remote System related logs

The peripheral module (PM) series of Digital Multiplex System (DMS) logs indicate conditions, state changes, and other important events in the line peripherals of the DMS switch. The PM logs that apply to the Star Hub and Star Module appear in the following table. The table provides a short description of the log, the cause of the log, and recommended responses to the log.

Logs PM128 and PM181 indicate a traffic overload condition in the Star Remote System. The system generates PM128 with the phrase `LCM Out of Overload` when normal call processing continues. Integrated services digital network (ISDN) logs given in this table are common to both ISDN lines in the

Star Hub and the Star Module (or remote line drawer [RLD]). Power and environmental system (PES) logs apply only to the RLD.

Table 13-1 Star Remote System related logs (Sheet 1 of 16)

Log name	Causes	Response
ISDN100	The RLD has detected that a terminal is unavailable for message traffic.	Determine why the terminal in not available and contact the next level of support.
ISDN101	Indicates a loop connected to the RLD is not available for message traffic.	Check the following: • verify data tables LTDEF and LTMAP for entries related to the RLD and line equipment number (LEN) in the log output and correct if there are any discrepancies • check for other log information related to the RLD or LEN • make sure that the RLD has the correct load and reload if necessary • busy and return to service (RTS) the RLD
ISDN102	Indicates that the RLD has detected a duplicated terminal endpoint identifier (TEI) on the same loop and has removed it from service.	Restore the TEI (using the TEI command at the LTPDATA level). If the duplicate TEI still exists, the RLD will again remove the TEI from service.
ISDN103	Indicates that manual action has changed the state of the RLD Bd-channel to SysB.	Check the reason for the state changing to SysB and try to fix the problem.
ISDN106	Indicates that layer 1 of a specific D-channel has failed and the fail flag is set.	Determine the reason for the failure and contact the next level of support.
ISDN107	Indicates that a TEI has failed to be restored by the system.	Determine the reason for the failure and contact the next level of support.
ISDN108	Indicates that a TEI has been restored by the system.	Run a SUSTATE test to ensure communication has been established with the restored D-channel.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 2 of 16)

Log name	Causes	Response
ISDN109	Indicates that a D-channel is restored by the system.	Run a SUSTATE test to ensure communication has been established with the restored D-channel.
ISDN115	Indicates that the subscription counters that represent the maximum allowable links for a specific set of TEI values would be exceeded by the attempted TEI assignment.	Perform a TEI audit.
ISDN116	Indicates that an action identifier has a TEI value that has not previously been assigned on a loop.	Identify the denied message and perform a TEI audit.
ISDN200	The ISDN subsystem generates ISDN200 at intervals of 24 h at the end of the daily Layer 2 audit. This report contains a maximum of ten ISDN lines for each generation. The following items appear in the report: • total number of frames received and transmitted • number of frames received and frames transmitted again in which errors exceed the threshold value • percentage of the total frames these errors represent.	Determine the reason for the high transmission error rate on the indicated ISDN lines. To clear the problem, refer to *Trouble Locating and Clearing Procedures*.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 3 of 16)

Log name	Causes	Response
ISDN201	The ISDN subsystem generates ISDN201 at 24 h intervals at the end of the daily Layer 2 and 3 audit. This log report includes the following information: • Complete switch system percentage of frames received in error and transmitted again • The number of line equipment numbers (LEN) on the switching system that report these types of errors • The number of LENs on the switching system with high Layer 2 protocol abnormality rates • The number of LENs on the switching system with high Layer 3 protocol abnormality rates • The number of defective lines reported in the ISDN200 logs Counts of ISDN basic rate access (BRA) lines determine the percentage calculation for frames received in error. BRA lines include both alternate mark inversion [AMI] and 2B1Q lines.	There is no action required. Retain this log report for debugging purposes.
Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550. ***Note 2:*** Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.		

Table 13-1 Star Remote System related logs (Sheet 4 of 16)

Log name	Causes	Response
IOAU112	The software does not perform a routine exercise (REX) on the Star Hub for 7 days.	Investigate the reason the software did not run REX on the Star Hub. Possible reasons include REX is: • suspended for the Star Hub • disabled in table REXSCHED • manually turned off with the TST command at the PM level • manually turned off through table OFCVAR with parameter NODEREXCONTROL • disabled because the Star Hub is in-service trouble (ISTb). If the Star Hub is ISTb, correct to return the Star Hub to service so the software can run the REX test.
NAG400	Hourly under control of the NAG command. Lists information, that includes REX results, about all nodes not in service (INSV).	The operating company personnel must take steps to return the node to service or have the node REX enabled. The operating company personnel must enable the node if that is the correct action. The action of the operating company personnel depends on review of the log report. ***Note:*** The Star Hubs display LCM_REX and Star Hub ring continuity and converter voltages (LCMCOV_REX) test results. A colon separates the test results. A status of N/A indicates the LCMCOV_REX test does not run on the different LCM. The LCMCOV_REX tests are performed on LCMs, XLCMs, OPMs, RLCMs, and Star Hubs.
PES200	Informs operating company personnel that a change has occurred on one or more alarms and a battery test failure.	There is no action required.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 5 of 16)

Log name	Causes	Response
PES201	Informs operating company personnel the RLD PES audit has detected a mismatch between the software state and the hardware state.	There is no action required.
PES202	Informs operating company personnel that a change has occurred in the RLDPES.	There is no action required.
PM101	Indicates the Star Hub fails a checksum test. The DMS-100 switch cannot get a data integrity value from the PM or value is not correct.	Repeat the checksum test. Refer to notes.
PM102	Indicates system request changes of the Star Hub to the system busy (SysB) state.	Determine the cause of the SysB alarm. Post and test the Star Hub. Refer to notes.
PM103	Indicates that a manual request places the Star Hub offline (OFFL) from the manual busy (ManB) state.	There is no action required.
PM104	Indicates the Star Hub is changed manually from the OFFL state to unequipped (Uneq). Deletion of the tuple in table LCMINV corresponding to the Star Hub causes the change.	There is no action required.
PM105	Indicates the Star Hub is manually busied (ManB).	There is no action required.
PM106	Indicates a system request returns the Star Hub returned to service (RTS) from the SysB state. This log also indicates a manual request returns the Star Hub to service from the ManB state.	There is no action required.
PM107	Indicates that a system request causes the Star Hub to change to the central-side busy (CBsy) state.	Post and test the affected Star Hub or links. Refer to notes

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 6 of 16)

Log name	Causes	Response
PM108	Indicates a firmware or hardware error is detected in the Star Hub processor card. Log PM108 identifies the error and the possible defective card.	If the system generates PM108 for less than 2 min, there is no action required. If the system generates PM108 for more than 2 min, post and test the Star Hub. Replace indicated cards. Refer to notes.
PM109	Indicates a DS-1 link between the host LTC and the Star Hub changes to a peripheral-side busy (PBsy) state. A SysB DS-1 carrier line causes this action to occur.	If the system generates PM109 for less than 2 min, there is no action required. If the system generates the PM109 for more than 2 min, the DS-1 carrier requires trunk maintenance. Refer this problem to the trunks maintenance group.
PM110	Indicates a DS-1 link between the host LTC and the Star Hub reaches a service count threshold like bipolar violations.	If the system clears the limit, there is no action required. If the system does not clear the limit, the DS-1 links require trunk maintenance. Refer this problem to the trunks maintenance group.
PM111	Indicates a DS-1 link between the host LTC and the Star Hub is RTSed.	There is no action required.
PM113	Indicates the Star Hub processor card encounters message congestion. Message congestion can occur on high traffic days.	If the system generates PM113 for less than 2 min, there is no action required. If the system generates PM113 for more than 2 min, determine the cause of the congestion. Correct the congestion.
PM114	Indicates that a problem occurs during an attempt to load or test the Star Hub.	Test the Star Hub. The system generates an alarm and card list. Refer to notes.
PM115	Indicates the Star Hub processor encounters different problems during normal operation.	If the system generates less than three PM115 in 2 min, there is no action required. If the system generates more than PM115 in 2 min, test the Star Hub. Refer to notes

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 7 of 16)

Log name	Causes	Response
PM116	Indicates the Star Hub sends a message error report to central control (CC).	A PM108, PM115, PM124, PM125, PM126, or PM138 report immediately precedes this report. Ignore this report and investigate the preceding report.
PM117	Indicates that Star Hub operation encounters a link-related problem.	Test the Star Hub. The system generated an alarm and card list. Refer to notes.
PM118	Indicates the Star Hub processor encounters different problems.	If the system generates less than three PM115 reports in 2 min, action is not required. If the system generates more than three PM115 reports in 2 min test the Star Hub. If the system does not find a fault, the load can be corrupt. When this condition occurs, load the Star Hub again. Refer to notes..
PM120	Indicates the CC node audit find one or more Star Hub processor error counters that contain values that are not zero. The counters are reset to zero.	Check for continuing reports from the same PM during normal operation. Collect PM120 reports. If you find PM120 reports for the same Star Hub, test the Star Hub. Refer to notes.
PM122	Indicates the Star Hub processor exception report is encountered during normal operation.	Refer to the Command Protocol Violations Table of the PM122 description in *Log Report Reference Manual* for the problem this report indicates.
PM124	Indicates the Star Hub processor encounters different problems during normal operation.	Refer to the Command Protocol Violations Table of the PM124 description in *Log Report Reference Manual* for the problem this report indicates.
PM125	Indicates the system detects a firmware or hardware error in the Star Hub processor.	Test the Star Hub. Refer to notes.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 8 of 16)

Log name	Causes	Response
PM126	Indicates the Star Hub processor encounters different problems during normal operation.	Test the Star Hub. If the system does not find a fault, the load can be corrupt. When this condition occurs, load the Star Hub again. Refer to notes.
PM127	Indicates the high-level data link control (HDLC) link between the host office and the Star Hub has been forced out of service.	Link maintenance can be required. The Star Hub can be forced to emergency stand-alone (ESA) operation. Make sure the Star Hub returns to normal operation when the system restores the link.
PM128	Indicates the Star Hub encounters trouble during normal operation. This condition causes the state of the PM to change to in-service trouble (ISTb). Service is not affected. The system also generates log PM128 as a result of a routine exercise (REx) test failure.	Post and test the indicated Star Hub or manually repeat the REX test that causes the log report. Note the alarm and card list that result. Refer to notes.
PM132	Indicates the result of an office-level (LCM-level) tip/ring reversal relay test (BRT) of a bus interface card (BIC), NT6X54, in a Star Hub line drawer. The log indicates passed, failed, or `test not run...` conditions.	If the log indicates test passed, there is no action required. Check the associated PM181 report if the test is not run. Run a manual BRT test if the test fails. This action produces a PM181 report and an ISTb alarm. Refer to notes.
PM171	Indicates the Star Hub has exited ESA mode, identifies the reason the Star Hub entered ESA, and lists the call processing OMs that were collected by the Star Hub during ESA.	There is no action requested.
PM179	Indicates that a software condition occurs that affects the normal operation of the Star Hub. PM179 supplies information that relates the log to a *PM Hardware Exception Report*.	Refer to the description of PM124 in *Log Report Reference Manual* for problems and responses this report indicates.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 9 of 16)

Log name	Causes	Response
PM179	Talk battery failure detected or cannot test talk battery modifications.	Refer to description of PM179 in *Log Report Reference Manual*, for problems and responses this report indicates.
	Example of a “Talk battery failure detected" log report	`*** PM179 JUN22 15:47:20 3114 TBL PM HW EXCEPTION REPORT STAR REM1 00 0 Unit 1 Talk Battery Failure detected on shelf 54 by LTC0 00 1 12 30`
	Indicates a software exception that affects the Star Module. The text of the log reports a hardware exception that indicates an improper execution of the hardware.	If a hardware problem is indicated by the SWERR text, perform diagnostic and maintenance procedures on the suspect equipment.
PM180	Indicates that a software exception report was received from the Star Hub or Star Module. A software exception indicates the improper execution of the software.	Collect all PM180 reports and contact next level of support.
	Example of an “LCM enters overload" log report.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT STAR REM1 00 0 Unit 1 LCM enters overload: DMSX: 5 IUC: 0 SEQ: 0 RT OVLD:medium (4/9,A8)`
	Example of an “LCM overloaded" log report.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT STAR REM1 00 0 Unit 1 LCM overloaded: DMSX: 45 IUC: 4 SEQ: 3 RT OVLD:medium (2/9,58)`

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 10 of 16)

Log name	Causes	Response
	Example of an “LCM out of overload" log report. The new information includes DMSX and inter-unit communications (IUC) message lost which total up to 65,535. This log report provide the peak real-time distress during the overload period. It also provides the duration of the overload period in minutes, up to a maximum of 255 minutes.	`* PM180 MAY14 12:37:10 6702 TBL PM SW EXCEPTION REPORT STAR REM1 00 0 Unit 1 LCM out of overload: Total DMSX:1234 Total IUC:1230 SEQ: 3 RT OVLD peak: High (2/9,58) Duration: 25 mins`
PM181	Indicates the Star Hub failed a diagnostic test.	This log indicates a failure in an automatic test. The failure in an automatic test can be repeated manually to produce a card list. Refer to the description of PM124 in *Log Report Reference Manual* for the problems and responses this report indicates.
	Indicates the ESA exit has failed. Also reports success or failure of downloading ESA static data by the CC.	There is no action required.
	Indicates when the Star Hub or a unit is ISTb with one of the following reasons: • one or both NTTR73AA universal maintenance packs (UMP) is out of service • UMP load file mismatch is detected • no communication with UMP, may be a problem with the UMP or in the communication (DMSX) • hardware exception report because of no communication with UMP	There is no action required.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 11 of 16)

Log name	Causes	Response
	Indicates the following has occurred on the Star Module: • remote line drawer (RLD) (Star Module) state is changed..For ISTb and SysB states, the log provides a failure reason. • a switch bank occurred, success or failure • RLD test failure • a file is loaded to the RLD or the load attempt has failed • static data download success or failure • entry and exit from overload state (congestion)	When the RLD changes state from ISTb or SysB, switch bank failure, static data download failure, or congestion state entry point, refer to notes. Otherwise, no action is required. No actions is required if the file loaded successfully. If the load operation fails, check the failure reason and contact the next level of support.
	In this log output, an x digital subscriber line (xDSL) line card (xLC) was added to table LNINV. The drawer for the table does not support the high speed data traffic of the 1-Meg Modem Service (1MMS). The line installed functions as a standard voice line only.	`PM181 JUL17 21:24:40 5700 INFO STAR REM1 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = REM1 00 1 00 12 PHYSICAL DRWR 0 DOES NOT SUPPORT xDSL DATA TRAFFIC` There is no action required.
Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550. ***Note 2:*** Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.		

Table 13-1 Star Remote System related logs (Sheet 12 of 16)

Log name	Causes	Response
	In this log output, an xLC was added to table LNINV. The drawer for the table supports the high speed data traffic of the 1MMS. The line drawer contains more xLCs than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFO STAR REM1 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = REM1 00 1 00 12 MAXIMUM NO (31) OF xDSL LINES PER PHYSICAL DRWR EXCEEDED MEMBERS PER PHYSICAL DRWR EXCEEDED` The whole line drawer is at risk of failure because the drawer is operating beyond its thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL and has room for expansion • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL and has room for expansion • enter the CI level QXNET VERIFY command to verify the xDSL line card assignments
Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550. ***Note 2:*** Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.		

Table 13-1 Star Remote System related logs (Sheet 13 of 16)

Log name	Causes	Response
	In this log output, an xLC was added to table LNINV. The drawer contains more xLCs in a vertical row than the xDSL engineering rules allow. The installed xLC functions as an xDSL line.	`PM181 JUL17 21:24:40 5700 INFO STAR REM1 00 1 Unit 0 xDSL ENGINEERING RULES VIOLATED LEN = REM1 00 1 00 12 MAXIMUM NO OF xDSL LINES PER VERT ROW EXCEEDED MAX MEMBERS (2) of xDSL LINES PER VERT ROW EXCEEDED` The whole line drawer can fail because the drawer is operating beyond the thermal and electrical limits. Operating company personnel receive warning of the xDSL engineering rules violation when adding the line. To correct the condition, at the MAP terminal • enter the CI level QXNET EXPAND command to locate another row in the same drawer for the xDSL line card • enter the CI level QXNET EXPANDALL command to locate another LCM that supports xDSL
PM182	Indicates an RLD link status changed to ManB	There is no action required.
PM183	Indicates an RLD link status changed to SysB.	There is no action required.
PM184	Indicates an RLD link status changed to RTS.	There is no action required.
PM185	Indicates when Star Hub firmware, hardware, or software detects an error condition. The error condition causes a trap interrupt. The running process stops on the instruction at fault.	Retain all of the reports the system generated during the minute before the error condition occurred. Contact the next level of support.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 14 of 16)

Log name	Causes	Response
PM300	Indicates NTTR73AA universal maintenance pack (UMP) firmware, hardware, or software detects an error condition. The error condition causes a trap-interrupt. The running process stops on the instruction at fault.	Retain all of the reports the system generated during the minute before the error condition occurred. Contact the next level of support.
Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550. ***Note 2:*** Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.		

Table 13-1 Star Remote System related logs (Sheet 15 of 16)

Log name	Causes	Response
PM600	REX fail reasons • Warm SWACT • Warm SWACT turned off • PreSWACT audit failure • Autonomous SWACT • OOS tests of inactive unit 0 • OOS tests of inactive unit 1 • RTS of inactive unit 0 • RTS of inactive unit 1 • Achieves superframe/data sync of unit 0 • Achieves superframe/data sync of unit 1 • INSV tests of inactive unit 0 before SWACT • INSV tests of inactive unit 1 before SWACT • INSV tests of active unit 0 after SWACT • INSV tests of active unit 1 after SWACT • INSV tests of inactive unit 0 after SWACT • INSV tests of inactive unit 1 after SWACT • RTS of inactive unit 0 after SWACT • RTS of inactive unit 1 after SWACT	Log PM600 records the maintenance actions performed on the Star Hub during the failed REX. Log PM600 records the maintenance actions from the start of the REX to the failed step. Use this information to pinpoint the source of the REX failure.

Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Note 2: Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.

Table 13-1 Star Remote System related logs (Sheet 16 of 16)

Log name	Causes	Response
	REX fail reasons continued • Achieves superframe/data sync of unit 0 after SWACT • Achieves superframe/data sync of unit 1 after SWACT • SWACT to unit 0 refused by SWACT controller • SWACT to unit 1 refused by SWACT controller • SWACT back to unit 0 occurred • SWACT back to unit 1 occurred • Recovery failed—SWACT	
PM777	Indicates a defective card and card location.	Refer to notes.
Note 1: Refer to the alarm clearing procedures in *Star Remote System Maintenance Manual*, 297-8353-550. ***Note 2:*** Refer to the card replacement procedures in *Star Remote System Maintenance Manual*, 297-8353-550.		

ESA log reports

The maintenance log reports the system generates during emergency stand-alone (ESA) appear in the table table that follows. The table provides a short description of each log, the cause of the log, and recommended responses

to the log. For a complete description of these logs and additional response information, refer to *Log Report Reference Manual*.

Table 13-2 ESA related logs (Sheet 1 of 2)

Log name	Causes	Response
ESA101	The ESA subsystem generates this report during a remote ESA static data load. The number of automatic lines (AUL) that ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in customer tables. The number of non-POTS AUL lines in the customer tables must be less than or equal to 63 for Star Hub.
ESA102	The ESA subsystem generates this report during a remote ESA static data load. The report warns that the number of Meridian Digital Centrex (MDC) customer groups that ESA supports, for the remote site, exceeds the maximum. The members of the overflow groups are treated as POTS lines.	To maintain full support in ESA, configure the remote site again. Change datafill in customer tables. The number of non-POTS AUL lines in customer tables must be less than or equal to 63 for Star Hub.
ESA103	The ESA subsystem generates this report during a remote ESA static data load. The number of ESA prefix translators ESA supports, for the remote site exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change the datafill in customer tables. The total number of ESA prefix translators for the remote site must be less than or equal to 272 for Star Hub.
ESA104	The ESA subsystem generates this report during a remote ESA static data load. The number of MDC extension translators ESA supports, for the remote site exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in customer tables. The total number of MDC translators for the customer groups must be less than or equal to 256 for Star Hub.
ESA105	The ESA subsystem generates this report during a remote ESA static data load. The number of directory numbers (DN) that ESA supports for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in line tables. The number of DNs in the remote site must be is less than or equal to 640 for the Star Hub.
ESA106	The ESA subsystem generates this report during a remote ESA static data load. The number of hunt groups ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in hunt tables. The number of hunt groups, in the RSC, must be less than or equal to 26 for Star Hub.

Table 13-2 ESA related logs (Sheet 2 of 2)

Log name	Causes	Response
ESA107	The ESA subsystem generates this report during a remote ESA static data load. The number of hunt members ESA supports, for the remote site, exceeds the maximum.	To maintain full support in ESA, configure the remote site again. Change datafill in hunt tables. The number of lines for hunt groups must be less than or equal 520 for the Star Hub.
ESA108	The ESA subsystem generates this report during a remote ESA static data load. A change in the data is detected. When data changes, loss of ABCD table data occurs. Call termination does not occur on the affected lines.	Load the affected data again through the MAP display.

DMS-100 Family

XPM DS-1

XPM Log Reference Manual (DS-1)

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