NT0H65AM 323-1701-542

Nortel

Optical Metro 5100/5200

Trouble Clearing and Alarm Reference Guide, Part 4 of 4

Standard Release 8.0 Issue 1 April 2005

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NORTEL

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About this document

ATTENTION

This document is presented in four parts: Part 1, Part 2, Part 3, and Part 4. Each part has its own table of contents. The table of contents in Part 1 contains topics found in Part 1 only. The table of contents in Part 2 contains topics found in Part 2 only. The table of contents in Part 3 contains topics found in Part 3 only. The table of contents in Part 4 contains topics found in Part 4 only.

You are reading Part 4 of the *Trouble Clearing and Alarm Reference Guide,* 323-1701-542.

This document provides general information about alarms, as well as procedures for clearing alarms on the Nortel Optical Metro 5100/5200 (identified prior to Release 7 as Nortel Networks OPTera Metro 5000-series Multiservice Platform).

Audience for this document

This document is intended for the following audience:

- provisioners
- installers
- transmission standards engineers
- field maintenance engineers
- system line-up and testing (SLAT) personnel
- maintenance technicians
- network administrators

Optical Metro 5100/5200 library

The Optical Metro 5100/5200 library consists of the *Nortel Optical Metro 5100/5200 Technical Publications*, NT0H65AM.

Technical Publications

The *Optical Metro 5100/5200 Technical Publications* (NTP) consist of descriptive information and procedures.

Descriptive information

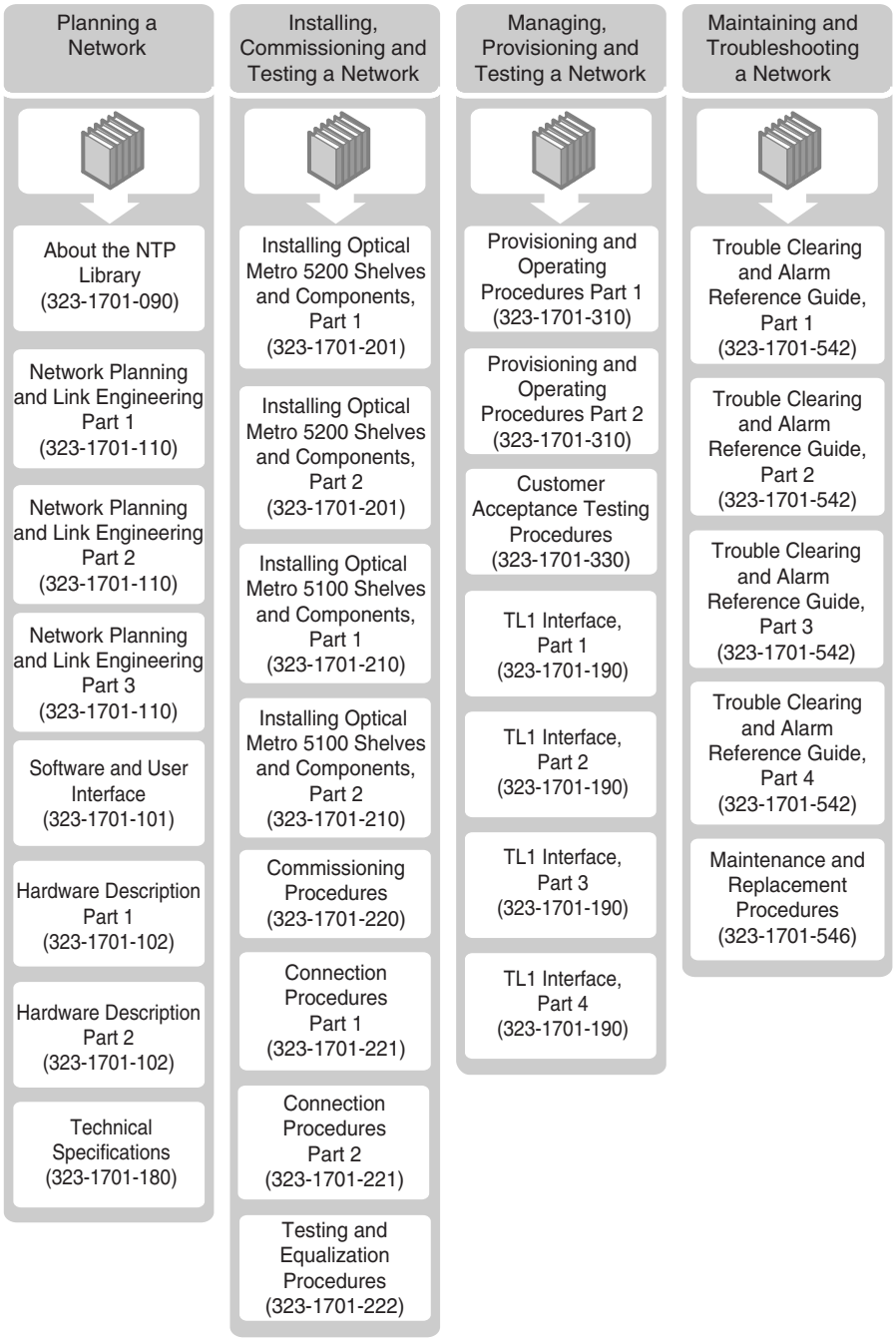
These NTPs provide detailed descriptive information about the Optical Metro 5100/5200, including system software and hardware descriptions, technical specifications, ordering information, and TL1 user information.

Procedures

These NTPs contain all procedures required to install, provision, and maintain the Optical Metro 5100/5200.

The following roadmap lists the documents in the Optical Metro 5100/5200 library.

OM2805p



Technical assistance service telephone numbers

For technical support and information from Nortel Networks, refer to the following table.

Technical Assistance Service	
For service-affecting problems: For 24-hour emergency recovery or software upgrade support, that is, for: • restoration of service for equipment that has been carrying traffic and is out of service • issues that prevent traffic protection switching • issues that prevent completion of software upgrades	**North America:** 1-800-4NORTEL (1-800-466-7835) **International:** 001-919-992-8300
For non-service-affecting problems: For 24-hour support on issues requiring immediate support or for 14-hour support (8 a.m. to 10 p.m. EST) on upgrade notification and non-urgent issues.	**North America:** 1-800-4NORTEL (1-800-466-7835) ***Note:*** You require an express routing code (ERC). To determine the ERC, see our corporate Web site at www.nortel.com. Click on the Express Routing Codes link. **International:** Varies according to country. For a list of telephone numbers, see our corporate Web site at www.nortel.com. Click on the Contact Us link.
Global software upgrade support:	**North America:** 1-800-4NORTEL (1-800-466-7835) **International:** Varies according to country. For a list of telephone numbers, see our corporate Web site at www.nortel.com. Click on the Contact Us link.

Clearing Muxponder alarms

Use the procedures in this chapter to clear Muxponder circuit pack alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, contact your next level of technical support.

For a list of Muxponder circuit pack types, see the "Muxponder circuit packs" section in *Hardware Description*, 323-1701-102.

In the System Manager, alarms raised against the line-side of the Muxponder circuit pack are shown as MOTR alarms. Alarms raised against the client-side of the Muxponder circuit pack or against the SFP are shown as MOTRSFP alarms.

All alarms are masked and no PMs/OMs are collected against the client Tx port when the client type is provisioned as uni-add

All alarms are masked and no PMs/OMs are collected against the client Rx port when the client type is provisioned as uni-drop

Table 17-1 lists the meaning of the indicator lamps on Muxponder circuit packs.

Table 17-1
Muxponder indicator lamps

Indicator lamp	Color	State	Meaning
LINE LOS	yellow	on	The line side is not receiving an optical signal or is receiving an invalid signal condition.
		off	The line side is receiving a valid signal.
LINE ACT	green	on	At least one channel assignment has been provisioned on the circuit pack and the line-side facility is in-service.
		off	The line side is out-of-service.

Table 17-1 (continued)
Muxponder indicator lamps

Indicator lamp	Color	State	Meaning
STATUS	green/red	green	The circuit pack is functioning normally and the inventory is in-service.
		red	The circuit pack has failed.
		off	The circuit pack has noted but is out-of-service.
		flashing	The circuit pack is the active database-carrying circuit pack during a database copy operation. (See Note 1.)
LOS (see Note 2)	yellow	on	The client side is not receiving an optical signal or is receiving an invalid signal condition.
		off	The client side is receiving a valid signal.
ACT (see Note 3)	green/red	green	At least one channel assignment has been provisioned on the circuit pack and the client-side facility is in-service.
		red	The client-side SFP has failed.
		off	The client side is out-of-service or there are no channel assignments.

Note 1: Do not remove the active database-carrying circuit pack during the database copy to the standby circuit pack.

Note 2: The Muxponder circuit pack has ten yellow LOS indicator lamps, one for each client-side interface.

Note 3: The Muxponder circuit pack has ten ACT indicator lamps, one for each client-side interface.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of electrostatic discharge
Observe all antistatic precautions when handling the circuit packs.

Exposed circuit packs can be damaged by electrostatic discharge. When handling circuit packs always wear a wrist strap that is grounded to the shelf maintenance panel, and shoe straps if necessary. For more information, refer to the "Handling circuit packs" section of "Isolating faults that do not generate alarms" in Part 1 of the *Trouble Clearing and Alarms Reference Guide*.

CAUTION
Risk of recovery procedures affecting traffic
Some of the alarms in this chapter may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of laser radiation
The Optical Metro 5100/5200 operates up to a Hazard Level of k x 3A (IEC 60825-2:2000) or 1M (IEC 60825-2:2004). Use only viewing instruments with proper optical attenuation.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

ATTENTION

Nortel Networks has conducted failure mode analysis regarding the repeated insertion and removal of an SFP. Under normal operating conditions, once inserted and carrying live traffic, SFP modules operate as fixed transceivers on current Optical Metro 5100/5200 circuit packs. However, if an SPF module is inserted and removed repeatedly, it is possible for the electrical contacts on the SFP module or the SFP receptacle on the Muxponder 10 Gbit/s GbE/FC circuit pack to wear out prematurely. Unnecessary or repeated insertions and removals are not considered normal and accepted operating practice, and as such Nortel Networks recommends that this be avoided. Nortel Networks recommends that SFP removal and insertion be performed only as normal operating practice (for example, during maintenance, card replacement and trouble clearing operations).

Procedure list

Table 17-2 lists the procedures in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 17-2
Procedures for clearing Muxponder alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
17-1 MOTR—Alarm Indication Signal	17-8	Facility
17-2 MOTR—Auto Protection Switching Acknowledgement Time Out	17-10	Not applicable
17-3 MOTR—Automatic Protection Byte Fail	17-11	Not applicable
17-4 MOTR—Autoprovisioning Mismatch, Circuit Pack Mismatch	17-13	Equipment
17-5 MOTR—Automatic Switch to Protection Path active	17-18	Not applicable
17-6 MOTR—Backward Defect Indication	17-19	Facility
17-7 MOTR—Circuit Pack Failed	17-20	Equipment
17-8 MOTR—Circuit Pack Missing	17-23	Equipment
17-9 MOTR—Facility Loopback	17-27	Facility
17-10 MOTR—Far End Protection Line Fail	17-28	Not applicable
17-11 MOTR—Fiber Mismatch	17-29	Facility
17-12 MOTR—Forced Switch to East Path Active, Forced Switch to West Path Active	17-31	Not applicable

Table 17-2 (continued)
Procedures for clearing Muxponder alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
17-13 MOTR—High Optical Power	17-32	Facility
17-14 MOTR—High Optical Power Warning	17-41	Facility
17-15 MOTR—Incompatible Optical System Identifier	17-49	Equipment
17-16 MOTR—Incomplete Provisioning	17-51	Equipment
17-17 MOTR—Inter-card Communication Failure	17-53	Equipment
17-18 MOTR—Invalid Provisioning	17-56	Equipment
17-19 MOTR—Invalid Signal	17-58	Equipment
17-20 MOTR—Loss of Frame	17-63	Facility
17-21 MOTR—Loss of Lock	17-66	Facility
17-22 MOTR—Loss of Signal	17-75	Facility
17-23 MOTR—Loss of Timing Reference	17-87	Facility
17-24 MOTR—Low Optical Power Warning	17-91	Facility
17-25 MOTR—Manual Switch to (West) or (East) path active	17-101	Not applicable
17-26 MOTR—Optical Receiver Overload	17-102	Facility
17-27 MOTR—Optical System Identifier Mismatch	17-112	Equipment
17-28 MOTR—Overhead Link Failure	17-113	Not applicable
17-29 MOTR—Path Lockout Active	17-115	Not applicable
17-30 MOTR—Protection Channel Match Fail	17-116	Not applicable
17-31 MOTR—Protection Mate Circuit Pack Not Available	17-118	Facility
17-32 MOTR—Protection Mode Mismatch	17-120	Not applicable
17-33 MOTR—Protection Scheme Mismatch	17-121	Not applicable
17-34 MOTR—Remote Automatic Laser Shutdown	17-122	Facility
17-35 MOTR—Remote Defect Indication	17-124	Facility
17-36 MOTR—Signal Failure	17-126	Facility
17-37 MOTR—TCA - Optical Power Rx High	17-130	Facility
17-38 MOTR—TCA - Optical Power Rx Low	17-138	Facility
17-39 MOTR—TCA - Optical Power Tx High	17-142	Facility

Table 17-2 (continued)
Procedures for clearing Muxponder alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
17-40 MOTR—TCA - Optical Power Tx Low	17-146	Facility
17-41 MOTR—Transceiver Degrade	17-149	Equipment
17-42 MOTR—Unassigned Optical System Identifier	17-152	Equipment
17-43 MOTR—Unknown Circuit Pack	17-154	Equipment
17-44 MOTR—Working/Protection Fiber Mismatch	17-157	Not applicable
17-45 MOTR—Wrapper Alarm Indication Signal	17-158	Facility
17-46 MOTR—Wrapper Loss of Frame	17-159	Facility
17-47 MOTRSFP—Circuit Pack Failed - Pluggable	17-168	Equipment
17-48 MOTRSFP—Circuit Pack Mismatch - Pluggable	17-170	Equipment
17-49 MOTRSFP—Circuit Pack Missing - Pluggable	17-172	Equipment
17-50 MOTRSFP—Client Service Mismatch	17-175	Facility
17-51 MOTRSFP—Facility Loopback	17-178	Not applicable
17-52 MOTRSFP—Far End Client Rx Signal Fail	17-179	Facility
17-53 MOTRSFP—GFP Remote Defect Indication	17-180	Facility
17-55 MOTRSFP—Insufficient Link Capacity	17-183	Facility
17-56 MOTRSFP—Inter-card Communication Failure - Pluggable	17-184	Equipment
17-57 MOTRSFP—LAN Link Down	17-187	Facility
17-58 MOTRSFP—Loss of Alignment	17-190	Facility
17-59 MOTRSFP—Loss of Frame Delineation	17-191	Facility
17-60 MOTRSFP—Loss of Signal	17-192	Facility
17-61 MOTRSFP—Loss of Synchronization	17-197	Equipment
17-62 MOTRSFP—Summary Alarm Indication Signal	17-201	Facility
17-63 MOTRSFP—Summary Loss of Multiframe	17-203	Facility
17-64 MOTRSFP—Summary Loss of Pointer	17-205	Facility
17-65 MOTRSFP—Summary Loss of Sequence	17-203	Facility
17-66 MOTRSFP—Summary Payload Label Mismatch	17-209	Facility
17-67 MOTRSFP—Summary Remote Defect Indication	17-211	Facility

Table 17-2 (continued)
Procedures for clearing Muxponder alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
17-68 MOTRSFP—Summary Unequipped	17-214	Facility
17-69 MOTRSFP—Terminal Loopback	17-218	Not applicable
17-70 MOTRSFP—Unknown Circuit Pack - Pluggable	17-219	Equipment

Procedure 17-1
MOTR—Alarm Indication Signal

Probable cause

This alarm becomes active on the line side when one of the following conditions exists:

- at a regen site, the client-side or line-side port on the OTR 10 Gbit/s Enhanced is out-of-service
- at a regen site, there are no channel assignments
- in interoperable topology, far-end facility failure in SONET/SDH network

Impact

Warning, non-service-affecting.

Action

Step	Action	
1	**If** the topology used is	**Then** go to
	bookended	step 2
	interoperable	step 4
2	At the regen site, make sure that **a.** both the line facility and client facility on the OTR are in-service. Refer to Procedure 3-10 “Putting a circuit pack or SFP facility in-service” in *Provisioning and Operating Procedures*, 323-1701-310. Use a network topology diagram to determine the regen site. **b.** there are completely provisioned and consistent OTR channel assignments. Follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310.	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—continued—

Procedure 17-1 (continued)
MOTR—Alarm Indication Signal

Step	Action	
4	Make sure that there are no alarms in the SONET/SDH network related to the paths that are allocated to the connection.	
5	If there are alarms in the SONET/SDH network, follow the appropriate procedures to clear the alarms.	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-2
MOTR—Auto Protection Switching Acknowledgement Time Out

Probable cause

This alarm becomes active on a 1+1 bidirectional APS Muxponder protection circuit pack when the line-side Rx interface cannot interpret the protection switch request from the far-end.

One of the following conditions exists:

- high bit-error rate on the line side
- in interoperable topology, the SONET/SDH system may have different capabilities than the Muxponder

This alarm indicates that there is either a problem on the optical receiver of the Muxponder raising the alarm or on the transmitter of the far-end Muxponder.

Impact

Major, non-service-affecting.

Action

Step	Action
1	Make sure that there is a channel assignment on the far-end Muxponder. Follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310.
2	Check for Wrapper, Section, and Line PMs and troubleshoot accordingly. See Chapter 14 “Clearing PM alarms” in *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.

3	If	Then
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-3
MOTR—Automatic Protection Byte Fail

Probable cause

This alarm becomes active on a 1+1 bidirectional APS Muxponder protection circuit pack when the line-side Rx interface cannot interpret the protection switch request from the far-end.

One of the following conditions exists:

- high bit-error rate on the line side
- in interoperable topology, the SONET/SDH system may have different capabilities than the Muxponder
- the working and protection fibers are swapped in an interoperable configuration when connecting to SONET/SDH LTE equipment that is not Optical Metro 5100/5200 equipment

This alarm indicates that there is either a problem on the optical receiver of the Muxponder raising the alarm or on the transmitter of the far-end Muxponder.

Impact

Major, non-service-affecting.

Action

Step	Action	
1	Check for Wrapper, Section, and Line PM counts on the circuit pack raising the alarm. Refer to Chapter 7 “Performance monitoring procedures” in *Provisioning and Operating Procedures*, 323-1701-310.	
2	Troubleshoot the PM counts accordingly. See Chapter 14 “Clearing PM alarms” in *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
4	**If** the topology used is	**Then** go to
	bookended	step 6
	interoperable	step 8

—continued—

Procedure 17-3 (continued)
MOTR—Automatic Protection Byte Fail

Step	Action
5	Identify the working MOTRs on the network. Reseat these circuit packs. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

Step	Action
6	Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

Step	Action
7	Reseat the far-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

Step	Action
8	In the SONET/SDH system, identify the protection provisioning scheme. Make sure that the protection scheme is 1+1 linear.
9	

If	Then
the protection is 1+1 linear	go to step 6
the protection is not 1+1 linear	use the appropriate procedures for provisioning the SONET/SDH equipment. Go to the next step.

Step	
10	

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-4
MOTR—Autoprovisioning Mismatch, Circuit Pack Mismatch

Probable cause

These alarms are raised against newly installed equipment, and in replacement procedures when the incorrect type of circuit pack is seated.

The Autoprovisioning Mismatch alarm becomes active when a Muxponder circuit pack is seated in:

- a shelf of type OFA
- a shelf of type OADM, Terminal, or Mixed provisioned with OCM 1.25Gbit/s circuit packs

  Note: Muxponder circuit packs are supported in shelves of type OADM, Terminal, or Mixed provisioned with OCM 2.5 Gbit/s circuit packs.

The Circuit Pack Mismatch alarm becomes active when the wrong type of Muxponder (band or channel), or a circuit pack other than a Muxponder is seated in a slot provisioned for a Muxponder.

—continued—

Procedure 17-4 (continued)
MOTR—Autoprovisioning Mismatch, Circuit Pack Mismatch

Impact

Table 17-3 lists the impact that these alarms have under different conditions.

Table 17-3
Autoprovisioning Mismatch, Circuit Pack Mismatch alarm impact

Alarm	Conditions	Severity	Impact
Autoprovisioning Mismatch	N/A	Major	Non-service-affecting
Circuit Pack Mismatch	The alarm is critical if the following conditions exist: • if there is a channel assignment and the circuit pack is in service • the path assigned to the circuit pack is unprotected • the path assigned to the circuit pack is protected and the matching circuit pack has an alarm condition	Critical	Service-affecting
	The alarm is major if the following conditions exist: • if there are no channel assignments on the circuit pack • the path assigned is protected and the matching circuit pack is operating correctly	Major	Non-service-affecting

—continued—

Procedure 17-4 (continued)
MOTR—Autoprovisioning Mismatch, Circuit Pack Mismatch

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action	
1	Determine the shelf type: OADM, Terminal, Mixed or OFA. On the Configuration-Communications screen of the System Manager, look in the "Shelf Type" column.	
2	**If** the shelf type is	**Then**
	an OFA shelf and should be an OFA shelf	remove any circuit packs other than OFAs or APBEs that are seated in slots 1 to 8 or 11-18. Go to step 3.
	an OFA shelf but should be an OADM, Mixed or terminal shelf	follow Procedure 4-1 "Decommissioning a shelf" in *Provisioning and Operating Procedures*, 323-1701-310, and Chapter 3 "Commissioning a shelf" in *Commissioning Procedures*, 323-1701-220. Go to step 4.
	the shelf type is an OADM, Mixed or terminal shelf	go to step 4

—continued—

Procedure 17-4 (continued)
MOTR—Autoprovisioning Mismatch, Circuit Pack Mismatch

Step	Action

3

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

4 Verify that the OCMs provisioned are 2.5Gbit/s.

If	Then
the OCM circuit packs provisioned are 1.25Gbit/s	Remove the Muxponder circuit pack. It can not be seated in a shelf provisioned with 1.25Gbit/s OCM circuit packs
the OCM circuit packs provisioned are 2.5Gbit/s	go to the next step

5 Make sure that the circuit pack in the slot is a Muxponder.

If	Then
the circuit pack is not a Muxponder	insert and seat a Muxponder in the slot. Follow Procedure 7-1 “Inserting circuit packs” in *Installing Optical Metro 5200 Shelves and Components* 323-1701-201. If the alarm clears, you have completed this procedure.
the circuit pack is a Muxponder	go to the next step

6 Make sure the slot is provisioned correctly for the circuit pack type. Do this by double-clicking on the Muxponder in the Equipment-Inventory list. Under “Provisioning Data” check to see that the “Circuit Pack Type” and “Max Bit Rate” correctly correspond to the actual circuit pack seated in the slot.

7

If the slot is	**Then** go to
incorrectly provisioned	the next step
correctly provisioned	step 13

8 Take the Muxponder OOS, follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” (if applicable) and then Procedure 3-8 “Taking a circuit pack or SFP out-of-service” in *Provisioning and Operating Procedures*, 323-1701-310.

—continued—

Procedure 17-4 (continued)
MOTR—Autoprovisioning Mismatch, Circuit Pack Mismatch

Step	Action
9	If there are facilities associated with the Muxponder, delete them. Follow Procedure 3-14 “Deleting a circuit pack or SFP facility” in *Provisioning and Operating Procedures*, 323-1701-310.
10	Delete the Muxponder equipment. Follow Procedure 3-9 “Deleting a circuit pack or SFP from the inventory” in *Provisioning and Operating Procedures*, 323-1701-310.

11

If	Then
you need to manually pre-provision the slot	follow Procedure 3-2 “Manually provisioning a circuit pack or SFP” procedures in *Provisioning and Operating Procedures*, 323-1701-310
you do not need to manually pre-provision the slot	insert the correct Muxponder and it will auto-provision. Follow Procedure 7-1 “Inserting circuit packs” in *Installing Optical Metro 5200 Shelves and Components* 323-1701-201.

12

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

13 Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

14 Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-5
MOTR—Automatic Switch to Protection Path active

Probable cause

This alarm becomes active on the equipment of a working MOTR when a fault occurs on the working path of a protected connection, and traffic automatically switches from the configured path to the protection path.

Impact

Minor, non-service-affecting.

Action

Step	Action
1	In System Manager, open the Fault–Active Alarms window and check for other active alarms on the working path.
2	Identify the working MOTRs on the network. Make sure that the line facility on the MOTR is in-service. Refer to Procedure 3-10 “Putting a circuit pack or SFP facility in-service” in *Provisioning and Operating Procedures*, 323-1701-310. Use a network topology diagram to determine the far end site.

3

If	Then
other alarms are active on the working path	follow the appropriate procedures in *Trouble Clearing and Alarm Reference Guide,* 323-1701-542, to clear the alarms. Go to the next step.
no other alarms are active on the working path	wait for the wait-to-restore period to end. Go to the next step.

4

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-6
MOTR—Backward Defect Indication

Probable cause

This alarm becomes active on the near-end Rx line side when the far-end circuit pack detects a line failure (loss of signal, wrapper loss of frame, wrapper alarm indication signal, loss of lock, or high optical power).

Impact

Warning, non-service-affecting.

Action

Step	Action	
1	In System Manager, open the Fault–Active Alarms window and examine the alarms that are raised at the far-end Muxponder to identify the cause of this fault.	
2	Follow the appropriate procedures in *Trouble Clearing and Alarm Reference Guide,* 323-1701-542, to clear the alarms.	
3	**If**	**Then**
	the BDI alarm clears	you have completed this procedure
	the BDI alarm remains	contact your next level of support

—end—

Procedure 17-7
MOTR—Circuit Pack Failed

Probable cause

This alarm is raised when the circuit pack detects an equipment failure.

Impact

Table 17-4 lists the impact that the alarm has under different conditions.

Table 17-4
Circuit Pack Failed alarm impact

Alarm	Conditions	Severity	Impact
Circuit Pack Failed	The alarm is critical if the following conditions exist: • if there are channel assignments on the circuit pack and the circuit pack is in-service • if the path assigned to the circuit pack is unprotected • if the circuit pack is the working circuit pack	Critical	Service-affecting
	The alarm is major if the following conditions exist: • if there are no channel assignments on the circuit pack • if the circuit pack is the protection circuit pack	Major	Non-service-affecting

—continued—

Procedure 17-7 (continued)
MOTR—Circuit Pack Failed

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	**CAUTION** **Risk of recovery procedures affecting traffic** Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system). Reseat the Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures*, 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-7 (continued)
MOTR—Circuit Pack Failed

Step	Action

2

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-8
MOTR—Circuit Pack Missing

Probable cause

This alarm occurs when the provisioned slot does not contain a circuit pack or the circuit pack is not correctly seated in the slot.

Impact

Table 17-5 lists the impact that the alarm has under different conditions.

Table 17-5
Circuit Pack Missing alarm impact

Alarm	Conditions	Severity	Impact
Circuit Pack Missing	The alarm will be critical if the following conditions exist: • if there are channel assignments on the circuit pack and the circuit pack is in-service • if the path assigned to the circuit pack is unprotected • if the circuit pack is the working circuit pack	Critical	Service-affecting
	The alarm will be major if the following conditions exist: • if there are no channel assignments on the circuit pack • if the circuit pack is the protection circuit pack	Major	Non-service-affecting

—continued—

Procedure 17-8 (continued)
MOTR—Circuit Pack Missing

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action	
1	Use System Manager to locate the slot that is indicating the missing circuit pack.	
2	**If**	**Then**
	the slot is empty but should contain a circuit pack	insert and seat the correct band and channel Muxponder in the slot. Follow Procedure 7-1 "Inserting circuit packs" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201, and Procedure 2-1 "Powering up an Optical Metro 5200 shelf" in *Commissioning Procedures*, 323-1701-220. Go to the next step.
	the slot is intentionally left empty	go to step 4
	the slot contains a Muxponder	go to step 6

—continued—

Procedure 17-8 (continued)
MOTR—Circuit Pack Missing

Step	Action

3

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to step 6

4 To clear the alarm if the slot is not used, follow these steps:

a. Take the Muxponder OOS. Follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” (if applicable), and then Procedure 3-8 “Taking a circuit pack or SFP out-of-service” in *Provisioning and Operating Procedures*, 323-1701-310.

b. If there are facilities associated with the Muxponder, delete them. Follow Procedure 3-14 “Deleting a circuit pack or SFP facility” in *Provisioning and Operating Procedures*, 323-1701-310.

Note: If this Muxponder is a part of a connection, you will have to delete the connection first. Follow Procedure 3-4 “Deleting channel assignments”.

c. Delete the Muxponder equipment. Follow Procedure 3-9 “Deleting a circuit pack or SFP from the inventory” in *Provisioning and Operating Procedures*, 323-1701-310.

5

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

6

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-8 (continued)
MOTR—Circuit Pack Missing

Step	Action

7

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-9
MOTR—Facility Loopback

Probable cause

This alarm occurs on the line side when a facility loopback is enabled by a user.

A Facility Loopback alarm on the Line side means the optical signal received at the Line Rx input is being looped back to the Line Tx output without continuing through the circuit pack.

This alarm is a normal indication when the loopback is on for testing or maintenance purposes. Loopback is only allowed when the facility is out-of-service.

The facility loopback for the line side only works properly when there is a valid signal.

Impact

Minor, non-service-affecting.

Action

Step	Action	
1	Determine if a facility loopback is active for testing or maintenance purposes.	
2	**If** the loopback is	**Then**
	necessary for testing or maintenance activities	you have completed this procedure
	not necessary	go to the next step
3	Release the loopback if it is not necessary. Refer to Procedure 3-60 "Removing a loopback using the System Manager" in *Provisioning and Operating Procedures*, 323-1701-310.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-10
MOTR—Far End Protection Line Fail

Probable cause

This alarm occurs on the line side as the result of a far-end protection line-side failure when operating in bidirectional mode. It can also be caused by a backplane fault on the far end working MOTR.

Impact

Major, non-service-affecting.

Action

Step	Action	
1	In System Manager, open the Fault–Active Alarms window and examine the alarms raised at the far-end Working and Protection Muxponder to identify alarm.	
2	Use the appropriate procedures in *Trouble Clearing and Alarm Reference Guide,* 323-1701-542, to clear the alarms.	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	Call your next level of support

—end—

Procedure 17-11
MOTR—Fiber Mismatch

Probable cause

This alarm occurs on the line side when the band and channel of the near-end Muxponder are not the same as the band and channel of the far-end Muxponder.

Impact

Major, non-service-affecting.

Incorrect fiber connections can inhibit the ability of the Muxponder circuit pack to correctly report Shelf Input Failure alarms.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action	
1	Verify that the corresponding circuit packs at the near-end and the far-end sites have the same band number and channel number. Use a network topology diagram to determine where the far-end site is located.	
2	**If** the corresponding circuit packs	**Then**
	are not the same band and channel	replace the circuit packs with circuit packs of the same band and channel. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures*, 323-1701-546. Go to the next step.
	are the same band and channel	go to step 4

—continued—

Procedure 17-11 (continued)
MOTR—Fiber Mismatch

Step	Action	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
4	Verify that there is an appropriate fiber connection between the Muxponder and the OMX at both the near-end and far end.	
5	**If**	**Then**
	an appropriate fiber connection exists between the Muxponder and the OMX	contact your next level of support
	an appropriate fiber connection does not exist between the Muxponder and the OMX	follow the appropriate fiber connection procedures in *Connection Procedures*, 323-1701-221. Go to the next step.
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-12
MOTR—Forced Switch to East Path Active, Forced Switch to West Path Active

Probable cause

These alarms become active when you perform a forced switch to the specified path and the forced switch is active.

This alarm is a normal indication when a forced switch is used for testing or maintenance activities.

Impact

Minor, non-service-affecting.

Action

Step	Action

1 Determine if a Force Switch is active for testing or maintenance purposes.

2

If the forced switch is	**Then**
necessary for testing or maintenance activities	you have completed this procedure
not necessary	go to the next step

3 Release the forced switch if it is not necessary. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures,* 323-1701-310.

If	**Then**
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-13
MOTR—High Optical Power

Probable cause

This alarm becomes active on the line side when the optical power level at the optical receiver has exceeded the Rx Fail Threshold of the Rx Power High parameter. One of the following conditions exists:

- the network contains amplifiers that are not equalized properly (if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly)
- the receiving circuit pack is defective
- the transmitting circuit pack is defective

Impact

Table 17-6 lists the impact that the alarm has under different conditions.

Table 17-6
High Optical Power alarm impact

Alarm	Conditions	Severity	Impact
High Optical Power	The alarm will be critical if the following conditions exist: • if there are channel assignments on the circuit pack and the circuit pack is in-service • if the path assigned to the circuit pack is unprotected • if the circuit pack is the working circuit pack	Critical	Service-affecting
	The alarm will be major if the following conditions exist: • if there are no channel assignments on the circuit pack • if the circuit pack is the protection circuit pack	Major	Non-service-affecting

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Check the corresponding far-end circuit pack or, if applicable, Optical Fiber Amplifiers (OFA) for failures or alarms. Use a network topology diagram to determine the far-end circuit packs. Troubleshoot these alarms/failures before proceeding. ***Note 1:*** A common cause of this alarm is problems with amplifier equalization. If this network uses OFAs, it is strongly recommended that you contact your next level of support to re-equalize the amplifiers. ***Note 2:*** If the transmitting power on the far-end circuit pack is too high, you might see a Transceiver Degrade alarm on the far-end shelf. Clear this alarm first by following Procedure 17-41 "MOTR—Transceiver Degrade".
2	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming circuit pack and its corresponding far-end circuit pack. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Step	Action
3	At the near-end shelf, use the System Manager to check if you are receiving High Optical Power warnings on all Muxponders in the same east/west plane, or just on one Muxponder.

If the Rx power level is too high	**Then** go to
on the only Muxponder in the east/west plane	step 4
on all Muxponders in the same east/west plane	step 7
on one of multiple Muxponders in the same east/west plane	step 10

4	**If**	**Then**
	there are amplifiers between the upstream and downstream Muxponder	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support to troubleshoot. If troubleshooting does not clear the alarm, go to step 10.
	there are no amplifiers between the upstream and downstream Muxponder	Go to step 5.

5

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction.

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Step	Action

Reduce the input power of the entire band by performing the following steps.

- Pull-out the fiber going into the near-end line-side Rx port and place it into an Optical Power meter.
- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on the OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180, for minimum and maximum Tx power levels.
- Once you have verified with the power meter that the Rx power is within the operational threshold of the particular line-side Rx port, replace the fiber into the line-side Rx port. The alarm should clear.

  Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

6

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to step 10

7

If	Then
there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
there are no amplifiers between the upstream and downstream Muxponders	Go to the next step.

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Step	Action

8

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction.

Reduce the input power of the entire band by performing the following steps.

- Pull-out the fiber going into the near-end line-side Rx port and place it into an Optical Power meter.
- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on all four OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180, for minimum and maximum Tx power levels.
- Once you have verified with the power meter that the Rx power is within the operational threshold of the particular line-side Rx port, replace the fiber into the line-side Rx port. The alarm should clear.

  Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Step	Action

9

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

10 Make sure the optical fiber is connected correctly on the line-side Rx port at the near-end site and on the line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patch-cords between the OMX, LC-to-SC patch panel, and the Muxponder.

Note: Use a network topology diagram to determine the near-end and far-end (far-end) sites.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

11 Use the System Manager to check the received power level on the line-side Rx port of the near-end Muxponder. Write down the value. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.

Note: You can record the power level from the Equipment—Facility window in the System Manager.

If the power level is	**Then**
above the operational threshold	go to step 14
within the operational threshold	the problem is with the circuit pack. Go to the next step.

12

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Step	Action

13

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

14 Use the System Manager to check the transmitting power of the corresponding far-end circuit pack. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels. Make sure that the transmit power level is within the operational threshold.

Note 1: You can record the power level from the Equipment—Facility window in the System Manager.

Note 2: The far-end circuit pack is the Muxponder that is originating the signal which the alarming near-end circuit pack is receiving. Use a network topology map to determine the far-end Muxponder.

Note 3: Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.

If the transmit power level is	**Then** go to
not within the operational threshold	the next step
within the operational threshold	step 17

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Step	Action

15

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

16

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the far-end Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	make sure the new circuit pack’s line-side Tx port is within the operational threshold and go to the next step.

17

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-13 (continued)
MOTR—High Optical Power

Step	Action

18

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

ATTENTION
If you are using ALS and disabled it during this procedure, re-enable it for each site. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-14
MOTR—High Optical Power Warning

Probable cause

This alarm becomes active on the line side when the power of the optical signal received is reaching the maximum level handled by the Muxponder circuit pack.

The majority of MOTR High Optical Power Warnings are caused by poor equalization. If there are OFAs in the network, check the equalization and contact your next level of support immediately.

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-14 (continued)
MOTR—High Optical Power Warning

Action

Step	Action
1	Check the corresponding far-end circuit pack or, if applicable, Optical Fiber Amplifiers (OFA) for failures or alarms. Use a network topology diagram to determine the far-end circuit packs. Troubleshoot these alarms/failures before proceeding. ***Note 1:*** A common cause of this alarm is problems with amplifier equalization. If this network uses OFAs, it is strongly recommended that you contact your next level of support to re-equalize the amplifiers. ***Note 2:*** If the transmitting power on the far-end circuit pack is too high, you might see a Transceiver Degrade alarm on the far-end shelf. Clear this alarm first by following Procedure 17-41 "MOTR—Transceiver Degrade".
2	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming circuit pack and its corresponding far-end circuit pack. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.
3	At the near-end shelf, use the System Manager to check if you are receiving High Optical Power warnings on all Muxponders in the same east/west plane, or just on one Muxponder. **If** the Rx power level is too high — **Then** go to on the only Muxponder in the east/west plane — step 4 on all Muxponders in the same east/west plane — step 7 on one of multiple Muxponders in the same east/west plane — step 10
4	**If** — **Then** there are amplifiers between the upstream and downstream Muxponder — there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support to troubleshoot. If troubleshooting does not clear the alarm, go to step 10. there are no amplifiers between the upstream and downstream Muxponder — Go to the next step.

—continued—

Procedure 17-14 (continued)
MOTR—High Optical Power Warning

Step	Action

5

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction.

Reduce the input power of the entire band by performing the following steps.

- Pull-out the fiber going into the near-end line-side Rx port and place it into an Optical Power meter.
- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. This attenuates the band and should reduce the power on the OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.
- Once you have verified with the power meter that the Rx power is within the operational threshold of the particular line-side Rx port, replace the fiber into the line-side Rx port. The alarm should clear.

  Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

6

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to step 10

7

If	Then
there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
there are no amplifiers between the upstream and downstream Muxponders	Go to the next step.

—continued—

Procedure 17-14 (continued)
MOTR—High Optical Power Warning

Step	Action

8

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction.

Reduce the input power of the entire band by performing the following steps.

- Pull-out the fiber going into the near-end line-side Rx port and place it into an Optical Power meter.
- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on all four OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.
- Once you have verified with the power meter that the Rx power is within the operational threshold of the particular line-side Rx port, replace the fiber into the line-side Rx port. The alarm should clear.

  Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

9

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—continued—

Procedure 17-14 (continued)
MOTR—High Optical Power Warning

Step	Action

10 Make sure the optical fiber is connected correctly on the line-side Rx port at the near-end site and on the line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patch-cords between the OMX, LC-to-SC patch panel, and the Muxponder.

Note: Use a network topology diagram to determine the near-end and far-end sites.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

11 Use the System Manager to check the received power level on the line-side Rx port of the near-end Muxponder. Write down the value. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.

Note: You can record the power level from the Equipment—Facility window in the System Manager.

If the power level is	**Then**
above the operational threshold	go to step 14
within the operational threshold	the problem is with the circuit pack. Go to the next step.

12

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-14 (continued)
MOTR—High Optical Power Warning

Step	Action

13

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

14 Use the System Manager to check the transmitting power of the corresponding far-end circuit pack. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels. Make sure that the transmit power level is within the operational threshold.

Note 1: You can record the power level from the Equipment—Facility window in the System Manager.

Note 2: The far-end circuit pack is the Muxponder that is originating the signal which the alarming near-end circuit pack is receiving. Use a network topology map to determine the far-end Muxponder.

Note 3: Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.

If the transmit power level is	**Then** go to
not within the operational threshold	the next step
within the operational threshold	step 17

—continued—

Procedure 17-14 (continued)
MOTR—High Optical Power Warning

Step	Action

15

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

16

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the far-end Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	make sure the new circuit pack’s line-side Tx port is within the operational threshold and go to the next step.

17

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-14 (continued)
MOTR—High Optical Power Warning

Step	Action

18

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

ATTENTION
If you are using ALS and disabled it during this procedure, re-enable it for each site. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-15
MOTR—Incompatible Optical System Identifier

This alarm is an equipment-level alarm that is raised on two Muxponders in the same shelf.

For more information, refer to Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures,* 323-1701-310.

Probable cause

This alarm becomes active on the line-side in a protected connection when the optical system identifier (OSID) of the paired Muxponders are different from each other.

Impact

Warning, non-service-affecting.

Requirements

Before you begin this procedure you must

- know what the correct provisioning is for the shelf and Muxponders that raised the alarm
- have knowledge of your OSIDs and how they are deployed in the network

—continued—

Procedure 17-15 (continued)
MOTR—Incompatible Optical System Identifier

Precautions

Correct provisioning of OSIDs is a critical component in deploying intrasite fault sectionalization (IFS). If OSIDs are incorrectly assigned you will impact the raising of Band Input Failure and Shelf Input Failure alarms.

CAUTION
Risk of interfering with alarm reporting
It is essential that the OSID for all line-facing equipment is provisioned correctly for bridge sites, for hub and spoke rings, and for rings with intrasite fault sectionalization (IFS). Refer to the "Rules for provisioning OSIDs" in *Provisioning and Operating Procedures*, 323-1701-310.

Know the network topology and exercise caution when provisioning OSIDs. Incorrect OSID provisioning can generate unnecessary Incomplete Provisioning alarms, and can cause the IFS feature to operate incorrectly.

Action

Step	Action	
1	In the Equipment—Inventory window in System Manager, verify that the Muxponders share the same OSID value in the OSID column.	
2	**If**	**Then**
	the OSID values are the same	contact your next level of support
	the OSID values are different	follow Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures,* 323-1701-310, to change the OSID. Go to the next step.
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
		—end—

Procedure 17-16
MOTR—Incomplete Provisioning

Probable cause

This alarm becomes active on the line side when

- the intrasite fault sectionalization (IFS) feature is enabled and the optical system identifier (OSID) for the Muxponder is unassigned
- at least one line-facing circuit pack (OCLD, OTR, Muxponder, or OSC) on the shelf is assigned an OSID and the OSID of the Muxponder is unassigned

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of interfering with alarm reporting
It is essential that the OSID for all line-facing equipment is provisioned correctly for bridge sites, for hub and spoke rings, and for rings with intrasite fault sectionalization (IFS). Refer to the "Rules for provisioning OSIDs" in *Provisioning and Operating Procedures*, 323-1701-310.

Know the network topology and exercise caution when provisioning OSIDs. Incorrect OSID provisioning can generate unnecessary Incomplete Provisioning alarms, and can cause the IFS feature to operate incorrectly.

Action

Step	Action
1	Refer to the "Rules for provisioning OSIDs" and the associated Precautions in Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures*, 323-1701-310.

—continued—

Procedure 17-16 (continued)
MOTR—Incomplete Provisioning

Step	Action	
2	**If** the cause is	**Then**
	IFS is enabled and the OSID for the Muxponder is unassigned	assign an OSID to the Muxponder circuit pack that has an unassigned OSID. Follow Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	at least one line-facing circuit pack on the shelf is assigned an OSID and the OSID of the Muxponder is unassigned	either unassign the OSID of the circuit pack with the assigned OSID, or assign an OSID to all line-facing circuit packs. Follow Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-17
MOTR—Inter-card Communication Failure

Probable cause

This alarm becomes active on the line-side when the SP circuit pack cannot communicate with the specified Muxponder circuit pack.

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-17 (continued)
MOTR—Inter-card Communication Failure

Action

Step	Action
1	Using the Fault—Active Alarms window in System Manger, check to see if the Inter-card Communication Failure alarm is raised by more than one circuit pack in the shelf.

If	**Then** go to
the alarm is raised by only this circuit pack	the next step
the alarm is raised on multiple circuit packs	the step step 5

2	**If**	**Then**
	the path is protected and the alarm is against the Working Muxponder	go to the next step
	the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	the path is unprotected	go to the next step. Performing the next step may affect traffic.

3

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	**Then**
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-17 (continued)
MOTR—Inter-card Communication Failure

Step	Action

4

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Refer to Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Go to step 5.

5 Reseat the SP. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

6 Replace the SP. Refer to Procedure 3-13 "Replacing an SP circuit pack" in *Maintenance and Replacement Procedures* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

ATTENTION
If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-18
MOTR—Invalid Provisioning

Probable cause

This alarm becomes active when two or more line facing circuit pack (OCLD/OTR/MOTR) on different shelves at the same site are in the same plane and have identical band, channel and OSID.

This alarm only becomes active when the site contains an OSC circuit pack with the same OSID as this circuit pack and all shelves at the site are connected together via the Ethernet-2 LAN.

Impact

Minor, non-service-affecting.

CAUTION
Risk of interfering with alarm reporting
It is essential that the OSID for all line-facing equipment is provisioned correctly for bridge sites, for hub and spoke rings, and for rings with intrasite fault sectionalization (IFS). Refer to the "Rules for provisioning OSIDs" in *Provisioning and Operating Procedures*, 323-1701-310.

Know the network topology and exercise caution when provisioning OSIDs. Incorrect OSID provisioning can generate unnecessary Incomplete Provisioning alarms, and can cause the IFS feature to operate incorrectly.

Action

Step	Action
1	In the System Manager, query the circuit pack inventory. Double-click on the alarmed OTR circuit pack. *The Optical Metro Inventory window opens.*
2	In the Provisioning Data section of the Optical Metro Inventory window, determine if the MOTR band, channel and OSID fields are provisioned.

If	**Then** go to
the band, the channel and the OSID fields are duplicate and the circuit pack is required	step 3
the circuit pack is not required	step 5

—continued—

Procedure 17-18 (continued)
MOTR—Invalid Provisioning

Step	Action
3	Fix the provisioning problem. Follow Procedure 3-2 “Manually provisioning a circuit pack or SFP” and Procedure 3-36 “Provisioning the optical system identifier (OSID)” in *Provisioning and Operating Procedures*, 323-1701-310.
4	Go to step 8.
5	Delete the facility of the circuit pack. Follow Procedure 3-14 “Deleting a circuit pack or SFP facility” in *Provisioning and Operating Procedures*, 323-1701-310.
6	Delete the equipment of the circuit pack. Follow Procedure 3-9 “Deleting a circuit pack or SFP from the inventory” in *Provisioning and Operating Procedures*, 323-1701-310.
7	Unseat the circuit pack from the shelf.
8	**If** / **Then** the alarm clears / you have completed the procedure. the alarm remains / contact your next level of support. **—end—**

Procedure 17-19
MOTR—Invalid Signal

Probable cause

This alarm becomes active against the backplane when the received optical signal is faulty or is invalid. This alarm occurs as a result of an equipment failure between the working and the protection Muxponders.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting if the path is not protected.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action	
1	Use System Manager to determine if the working Muxponder or the protection Muxponder is raising the alarm.	
2	**If**	**Then** go to
	the working Muxponder is raising the alarm	step 3
	the protection Muxponder is raising the alarm	step 9

—continued—

Procedure 17-19 (continued)
MOTR—Invalid Signal

Step	Action

3

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the protection Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

4

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the protection Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.

5 Reseat the OCM. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-19 (continued)
MOTR—Invalid Signal

Step	Action
6	Replace the OCM. Follow Procedure 3-8 “Replacing an OCM circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.

7

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the working Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

8

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the working Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—continued—

Procedure 17-19 (continued)
MOTR—Invalid Signal

Step	Action

9

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the working Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

10

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the working Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.

11 Reseat the OCM. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-19 (continued)
MOTR—Invalid Signal

Step	Action
12	Replace the OCM. Follow Procedure 3-8 “Replacing an OCM circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.

13

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the protection Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

14

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the protection Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-20
MOTR—Loss of Frame

Probable cause

This alarm becomes active on the line side when one of the following conditions exists:

- at a regen site, faulty link between the client-to-client connection on the OTR 10 Gbit/s Enhanced circuit pack
- at a regen site, faulty link that carries errors from the SONET/SDH layer
- in interoperable topology, errors from the SONET/SDH cloud

Impact

Table 17-7 lists the impact that the alarm has under different conditions.

Table 17-7
Loss of Frame alarm impact

Alarm	Conditions	Severity	Impact
Loss of Frame	The alarm reported on the working line-side is critical under the following conditions: • there are channel assignments on the circuit pack, and the circuit pack is in-service • the path assigned to the circuit pack is unprotected or the path assigned to the circuit pack is protected and the protection path is not carrying traffic.	Critical	Service-affecting
	The alarm reported on the line-side is minor under the following conditions: • if there are no channel assignments on the circuit pack • if the path assigned is protected and the matching circuit pack is operating correctly	Minor	Non-service-affecting

—continued—

Procedure 17-20 (continued)
MOTR—Loss of Frame

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Check for Wrapper, Section, and Line PM counts on the circuit pack raising the alarm. Refer to Chapter 7 "Performance monitoring procedures" in *Provisioning and Operating Procedures*, 323-1701-310.
2	Troubleshoot the PM counts accordingly. See Chapter 14 "Clearing PM alarms" in *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.
3	**If** / **Then** the alarm clears / you have completed this procedure the alarm remains / go to the next step
4	**If** the topology used is / **Then** go to bookended / step 5 interoperable / step 7
5	Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310. **If** / **Then** the alarm clears / you have completed this procedure the alarm remains / go to the next step

—continued—

Procedure 17-20 (continued)
MOTR—Loss of Frame

Step	Action
6	Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

7	If there are alarms in the SONET/SDH network, follow the appropriate procedures to clear the alarms.
8	

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-21
MOTR—Loss of Lock

Probable cause

This alarm becomes active on the line side when the Muxponder cannot lock on to the input data stream from its optical input signal. One of the following conditions exists:

- there is a protocol mismatch in the channel assignment for the far-end connection
- an optical fiber connection is degraded
- an optical fiber is bent or coiled too tightly
- the connector is dirty at the receiving Muxponder or at the transmitting circuit pack
- an optical patch cord is damaged
- the receiving Muxponder is defective
- the optical fiber is the wrong type
- a miniature VOA on the fiber to attenuate the signal is not operating correctly
- the SONET/SDH equipment is defective in an interop configuration

Impact

Table 17-8
Loss of Lock alarm impact

Alarm	Conditions	Severity	Impact
Loss of Lock	The alarm reported on the line-side is critical under the following conditions: • there are channel assignments on the circuit pack, and the circuit pack is in-service • the path assigned to the circuit pack is unprotected or the path assigned to the circuit pack is protected and the protection path is not carrying traffic	Critical	Service-affecting
	The alarm reported on the line-side is major under the following conditions: • if there are no channel assignments on the circuit pack • if the path assigned is protected and the matching circuit pack is operating correctly	Minor	Non-service-affecting

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Make sure the provisioned connection type and bit rate at the far end are correct.
2	Make sure that there is no protocol mismatch in the channel assignments for the near-end and far-end connections. For a list of supported protocols for the Muxponder circuit pack, see Table 2-45 and Table 2-46 in *Technical Specifications*, 323-1701-180.
3	Make sure you are using the correct type of optical fiber.
4	Check the corresponding far-end circuit pack or, if applicable, Optical Fiber Amplifiers (OFA) for failures or alarms. Use a network topology diagram to determine the far-end circuit packs. Troubleshoot these alarms/failures before proceeding. ***Note 1:*** A common cause of this alarm is problems with amplifier equalization. If this network uses OFAs, it is strongly recommended that you contact your next level of support to re-equalize the amplifiers. ***Note 2:*** If the transmitting power on the far-end circuit pack is too high, you might see a Transceiver Degrade alarm on the far-end shelf. Clear this alarm first by following Procedure 17-41 "MOTR—Transceiver Degrade".
5	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming circuit pack and its corresponding far-end circuit pack. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Step	Action
6	At the near-end shelf, use the System Manager to check if you are receiving Loss of Lock on all Muxponders in the same east/west plane, or just on one Muxponder.

If the alarm appears	**Then** go to
on the only Muxponder in the east/west plane	step 7
on all Muxponders in the same east/west plane	step 10
on one of multiple Muxponders in the same east/west plane	step 13

7	**If**	**Then**
	there are amplifiers between the upstream and downstream Muxponder	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support to troubleshoot. If troubleshooting does not clear the alarm, go to step 13.
	there are no amplifiers between the upstream and downstream Muxponder	Go to the next step.

8

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction.

Reduce the input power of the entire band by performing the following steps.

- Pull-out the fiber going into the near-end line-side Rx port and place it into an Optical Power meter.

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Step	Action
	• Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on the OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels. • Once you have verified with the power meter that the Rx power is within the operational threshold of the particular line-side Rx port, replace the fiber into the line-side Rx port. The alarm should clear. ***Note:*** This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

9	If	Then
	the alarm clears	you have completed this procedure
	the alarm remains	go to step 13

10	If	Then
	there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
	there are no amplifiers between the upstream and downstream Muxponders	Go to the next step.

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Step	Action

11

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction.

Reduce the input power of the entire band by performing the following steps.

- Pull-out the fiber going into the near-end line-side Rx port and place it into an Optical Power meter.
- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on all four OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.
- Once you have verified with the power meter that the Rx power is within the operational threshold of the particular line-side Rx port, replace the fiber into the line-side Rx port. The alarm should clear.

  Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

12

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

13 Make sure the optical fiber is connected correctly on the line-side Rx port at the near-end site and on the line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patch-cords between the OMX, LC-to-SC patch panel, and the Muxponder.

Note: Use a network topology diagram to determine the near-end and far-end sites.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Step	Action
14	Use the System Manager to check the received power level on the line-side Rx port of the near-end Muxponder. Write down the value. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels. ***Note:*** You can record the power level from the Equipment—Facility window in the System Manager.

If the power level is	**Then**
above the operational threshold	go to step 17
within the operational threshold	the problem is with the circuit pack. Go to the next step.

15

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	**Then**
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Step	Action

16

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

17 Use the System Manager to check the transmitting power of the corresponding far-end circuit pack. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels. Make sure that the transmit power level is within the operational threshold.

Note 1: You can record the power level from the Equipment—Facility window in the System Manager.

Note 2: The far-end circuit pack is the Muxponder that is originating the signal which the alarming near-end circuit pack is receiving. Use a network topology map to determine the far-end Muxponder.

Note 3: Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.

If the transmit power level is	**Then** go to
not within the operational threshold	the next step
within the operational threshold	step 20

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Step	Action

18

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

19

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the far-end Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	make sure the new circuit pack’s line-side Tx port is within the operational threshold and go to the next step.

20

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-21 (continued)
MOTR—Loss of Lock

Step	Action

21

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

ATTENTION
If you are using ALS and disabled it during this procedure, re-enable it for each site. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-22
MOTR—Loss of Signal

Probable cause

This alarm becomes active on the line-side when the Muxponder is not detecting an input signal. One of the following conditions exists:

- an optical fiber is cut
- the optical fiber is the wrong type
- an optical fiber is bent or coiled too tightly
- the received optical power is lower than the Rx Fail Threshold of the Rx Power Low parameter
- low optical power
- complete loss of optical power
- detection of a SONET loss of signal
- the connector is dirty at the receiving Muxponder or on the transmitting circuit pack
- an optical patch cord is damaged
- the transmitting Muxponder at the far end is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly
- an far-end Optical Fiber Amplifier (OFA) is defective, not equalized properly, and/or has a critical alarm (line-side only)

Impact

Table 17-9 on page 17-76 lists the impact that the alarm has under different conditions.

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Table 17-9
Loss of Signal alarm impact

Alarm	Conditions	Severity	Impact
Loss of Signal	The alarm reported on the working line side is the following conditions: • there are channel assignments on the Muxponder, and the Muxponder is in-service • the path assigned to the Muxponder is unprotected or the path assigned to the Muxponder is protected and the protection path is not carrying traffic	Critical	Service-affecting
	The alarm reported on the line-side is major under the following conditions: • if there are no channel assignments on the Muxponder • the path assigned is protected and the matching Muxponder is operating correctly	Major	Non-service-affecting

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

ATTENTION

If a fiber break occurs and is being repaired when automatic laser shutdown (ALS) or automatic laser recovery (ALR) is active on a fiber, there are impacts on the behavior of the alarms in the system. If you use light to test the broken fiber (with a light source or an optical time domain reflectometer (OTDR)), you clear the ALS alarms. This is because the shelf detects light and clears the Loss of Signal (LOS) condition. As a result, the shelf and the remote shelf power up the laser (depending on whether both Tx and Rx fibers are cut or only one of them is cut). If a Remote Automatic Laser Shutdown alarm is raised on the shelf when the light is removed, the alarm is replaced by an LOS alarm.

If all the channels impacted by the fiber break detect light when the laser is powered up, the Automatic Laser Shutdown alarm is cleared This is an expected behavior because a shelf cannot distinguish between a light source from an optical test set or a light source from a remote shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Action

Step	Action
1	If Automatic Laser Shutdown (ALS) is enabled and active, the lasers must be re-activated before proceeding. Look for ALS alarms on the span. To clear, refer to Procedure 17-34 “MOTR—Remote Automatic Laser Shutdown” in this book. Use a network topology diagram to determine the far-end shelf.
2	Check alarms to make sure the corresponding far-end Muxponder(s), OFA(s), or APBE(s) have not failed or are missing. If there are alarms, clear these alarms before proceeding. Use a network diagram to determine the far-end components.
3	Use the System Manager to check if you are receiving MOTR—Loss of Signal on all Muxponders in the same east/west plane, or just on one Muxponder. ***Note 1:*** You can record the power level from the Equipment-Facility window in the System Manager. ***Note 2:*** On the Optical Metro 5200 shelf, the east plane is defined as slots11-18, the west plane is defined as slots 1 to 8. On the Optical Metro 5100 shelf, the east plane is defined as slots 3 and 4, while the west plane is defined as slots 1 and 2.

If there is LOS	**Then** go to
on all Muxponders of the same band, the same OSID # and in the same east or west plane	the next step
on the only Muxponder in the east/west plane	the next step
on one of multiple Muxponders in the same east/west plane	step 12

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action
4	Using a network topology diagram and the System Manager alarms, make note of which shelves, which sites, and which directions have a LOS. Write down on the diagram where the LOSs are located. This should help pinpoint exactly where the fault is. Some examples follow: • For example, if there are three bands at Site X (B1, B2, and B3), and only the east side of B2 has LOS, then the problem is located somewhere in the vicinity of the east B2 OMX or the west side of the far-end B2 OMX. Check for a broken patch-cord, a faulty attenuator, a failed OMX, or if there are amplifiers, check the APBE, or the B2 VOA on the PBE. • Using the same Site X as an example, If the west side of every band/shelf at Site X has an LOS, then the problem lies on the west-side line fiber. The line fiber may be broken, one of the OMXs connected to the outside fiber-plant may be faulty, an OSC coupler tray may be broken, or an far-end amplifier/APBE/ECT/PBE may be to blame. • If a line fiber is completely broken, then you should expect LOS on ALL bands at ALL sites that are originating/terminating a wavelength that passes through the broken fiber. ***Note:*** If Intrasite Fault-Sectionalization (IFS) is enabled, there will be indicators to help pinpoint the fault. See Chapter 2 “Troubleshooting fault sectionalization and System Level Equalization Control”.
5	**If** / **Then** go to you found the fault location in step 4 — the next step you could not find the fault location — step 9
6	**If** / **Then** the path is protected and the alarm is against the Working Muxponder — go to the next step the path is protected and the alarm is against the Protection Muxponder — switch traffic off of the Protection Muxponder. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step. the path is unprotected — go to the next step. Performing the next step may affect traffic.

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action
7	Once you have located where the fault is, use an optical power meter to find the exact cause of the fault. Start at a point on the fiber where there is light, and follow the signal path, making power measurements at each connector, until the cause of the fault is found. Use a site-fibering diagram to follow the signal flow. Look for a fiber, fiber connector, or optical filter with exceeding amounts of loss. ***Note:*** Look in Chapter 6 "Link engineering components" in *Network Planning and Link Engineering*, 323-1701-110 for signal path and component loss values.

CAUTION
DISABLE AUTOMATIC LASER SHUTDOWN FIRST
If Automatic Laser Shutdown (ALS) is enabled, disable ALS for all shelves that will be affected by this maintenance activity. Use a network topology diagram and channel listing to determine the far-end and near-end sites that will be affected when the ring is opened. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.

8 Fix the problem found in step 7.

If	Then
it is a broken, damaged, or bent fiber	replace the fiber
it is a dirty connector	refer to Chapter 9 "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.
it is a faulty component or optical filter	refer to Chapter 2 "Replacing shelf components" in *Maintenance and Replacement Procedures* in 323-1701-546

If	Then
the alarm remains	go to the next step
the alarm clears	you have completed the procedure

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action	
9	**If** there is MOTR—Loss of Signal	**Then** go to
	on the only Muxponder in the east/west plane	step 10
	otherwise	step 11

10	**If**	**Then**
	there are amplifiers between the upstream and downstream Muxponder	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support to troubleshoot. If troubleshooting does not clear the alarm, go to step 12.
	there are no amplifiers between the upstream and downstream Muxponder	go to step 12

11	**If**	**Then**
	there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
	there are no amplifiers between the upstream and downstream Muxponders	Contact your next level of support

12	**If**	**Then**
	the path is protected and the alarm is against the Working Muxponder	go to the next step
	the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	the path is unprotected	go to the next step. Performing the next step may affect traffic.

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action
13	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming Muxponder and its corresponding far-end Muxponder. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.
14	Make sure the optical fiber is connected correctly on the Muxponder line-side Rx port at the near-end site and on the Muxponder line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patchcord between the OMX, the SC-LC patch panel, and the Muxponder. ***Note:*** Use a network topology diagram to determine the near-end and far-end sites.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action

15 Using the System Manager, record the receive power level on the Muxponder circuit pack. Write down the power level. Make sure that the receiving power level is within the operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for maximum and minimum Rx/Tx power levels.

Note: You can record the power level from the Equipment—Facility window in the System Manager.

If	Then
the received power is within the operational threshold	the problem is with the Muxponder. Go to the next step.
the received power is not within the operational threshold	go to step 18

16

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

17

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	contact your next level of support

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action
18	Use the System Manager to check the transmitting power of the corresponding far-end Muxponder. Make sure that the transmit power level is within the operational threshold. ***Note 1:*** You can record the power level from the Equipment—Facility window in the System Manager. ***Note 2:*** The far-end Muxponder is the Muxponder that is originating the signal which the alarming near-end Muxponder is receiving. Use a network topology map to determine the far-end Muxponder. ***Note 3:*** Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels. **If** the transmit power level is — **Then** go to not within the operational threshold — the next step within the operational threshold — step 21
19	**CAUTION** **Risk of recovery procedures affecting traffic** Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system). Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310. **If** — **Then** the alarm clears — you have completed this procedure the alarm remains — go to the next step

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action

20

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the far-end Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	make sure the new circuit pack’s line-side Tx port is within the operational threshold and go to the next step.

—continued—

Procedure 17-22 (continued)
MOTR—Loss of Signal

Step	Action
21	Use the proper cleaning kit to clean all the connectors attached to the receiving (near-end) Muxponder line-side Rx port and to the line-side Tx Port on the transmitting (far-end) Muxponder. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. Use a network topology diagram to determine the transmitting (far-end) Muxponder. ***Note:*** If you are using the OMX 4CH + Fiber Manager, clean both ends of the patch-cord between the OMX and the Muxponder. — Clean each connector separately. — Record the operating power level after you clean each connector and compare it to the value you wrote down in step 15, this will allow you to see if there is any improvement to the Rx power.

CAUTION
Risk of loss of traffic across multiple bands
Do not clean any optical fibers on the optical fiber plant, or on connections to the OMX. This affects traffic over multiple bands. Clean only the pigtail connections at the specified Muxponder circuit packs.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	it is possible that the patch cord that connects the Muxponder to the OMX at the near-end or far-end is broken damaged or bent. Try replacing the patch cord.

ATTENTION
If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures*, 323-1701-310.

If you are using ALS and disabled it during this procedure, re-enable it for each site. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-23
MOTR—Loss of Timing Reference

Probable cause

This alarm becomes active on the line side of the working or protection Muxponder and on the backplane of the protection Muxponder.

This alarm is raised under the following conditions:

- a problem with the provisioning of the timing references. The timing mode of one end must be local and the other end must be loop.
- line side Loss of Signal condition

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

—continued—

Procedure 17-23 (continued)
MOTR—Loss of Timing Reference

Action

Step	Action	
1	**If**	**Then**
	the alarm is raised immediately after configuration	wait 100 seconds to see if the alarm clears. Go to the next step.
	otherwise	go to step 3
	Note: SONET clock frequency determination may take up to 100 sec.	
2	**If**	**Then**
	the alarm clears	you have completed the procedure
	the alarm remains	go to the next step
3	**If** the topology is	**Then** go to
	bookended	step 4
	interoperable	step 8
4	Check the timing mode at both the near-end and the far-end Muxponder circuit packs..	
	If	**Then**
	both are in loop timing mode	set one to local timing mode and one to loop timing mode and wait 100 sec. See Procedure 3-21 "Changing the timing mode" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	otherwise	go to step 6
5	**If**	**Then**
	the alarm clears	you have completed the procedure
	the alarm remains	go to the next step

—continued—

Procedure 17-23 (continued)
MOTR—Loss of Timing Reference

Step	Action

6

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310. Wait 5 minutes for the alarm to clear.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

7

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the far-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310. Wait 5 minutes for the alarm to clear.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—continued—

Procedure 17-23 (continued)
MOTR—Loss of Timing Reference

Step	Action	
8	**If**	**Then**
	the timing mode of the Muxponder is loop timing	make sure the SONET/SDH system is not deriving timing from the Muxponder and wait 100 sec. Go to the next step.
	the timing mode of the Muxponder is local timing	change the timing mode of the Muxponder to loop timing. and wait 100 sec. See Procedure 3-21 “Changing the timing mode” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	otherwise	go to step 10
9	**If**	**Then**
	the alarm clears	you have completed the procedure
	the alarm remains	go to the next step
10	Check for timing reference alarms in the SONET/SDH system. Follow the appropriate procedures for clearing timing problems and wait 100 sec.	
	If	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
11	**CAUTION** **Risk of recovery procedures affecting traffic** Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).	
	Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310. Wait 5 minutes for the alarm to clear.	
	If	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-24
MOTR—Low Optical Power Warning

Probable cause

This alarm becomes active on the line side when the optical power level at the optical receiver is lower than the Rx Degrade Threshold of the Rx Power Low parameter. One of the following conditions exists:

- an optical fiber connection is degraded
- the connector is dirty at the receiving Muxponder
- an optical patch cord is damaged
- the receiving Muxponder is defective
- the transmitting Muxponder is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Check alarms to make sure the corresponding far-end Muxponder(s), OFA(s), or APBE(s) have not failed or are missing. If there are alarms, clear these alarms before proceeding. Use a network diagram to determine the far-end components.

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action
2	Use the System Manager to check if you are receiving MOTR—Low Optical Power Warning on more than one Muxponder in the same east/west plane, or just on a single Muxponder. ***Note 1:*** You can record the power level from the Equipment—Facility window in the System Manager. ***Note 2:*** If there is only one Muxponder in the east/west plane, go to step 10. If this fails to clear the alarm, then go to the next step. ***Note 3:*** On the Optical Metro 5200, the east plane is defined as slots 11-18, the west plane is defined as slots 1 to 8. On the Optical Metro 5100 shelf, the east plane is defined as slots 3 and 4, while the west plane is defined as slots 1 and 2. ***Note 4:*** Because MOTR—Low Optical Power Warning is a threshold alarm, it may not appear on all Muxponders. Check and see if the Rx power on all line-side Muxponder Rx ports in the same east/west plane are relatively low. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for the minimum Rx sensitivity of the line-side Muxponder Rx port. **If** there is an MOTR—Low Optical Power Warning — **Then** go to on more than one Muxponder in the same east/west plane (or all line-side Muxponder Rx powers are relatively low) — the next step on the only Muxponder in the east/west plane — the next step on one of multiple Muxponders in the same east/west plane — step 10

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action
3	Using a network topology diagram and the System Manager alarms, make note of which shelves, which sites, and which directions have an MOTR—Low Optical Power Warning. Write down on the diagram where the LOSs are located. This should help pinpoint exactly where the fault is. Below are some examples: • For example, if there are three bands at Site X (B1, B2, and B3), and only the east side of B2 has Low Optical Power Warning, then the problem is located somewhere in the vicinity of the east B2 OMX or the west side of the far-end B2 OMX. Check for a bent patch-cord, a faulty attenuator, a faulty OMX, or if there are amplifiers, check the APBE, or the B2 VOA on the PBE. • Using the same Site X as an example, If the west side of most every band/shelf at Site X has a Low Optical Power Warning, then the problem probably lies on the west-side line fiber. The line fiber may be dirty, one of the OMXs connected to the outside fiber-plant may be faulty, an OSC coupler tray may be broken, or an far-end amplifier/APBE/ECT/PBE may be to blame. ***Note:*** If Intra-site Fault-Sectionalization (IFS) is enabled, there will be indicators to help pinpoint the fault. See Chapter 2 "Troubleshooting fault sectionalization and System Level Equalization Control".
4	**If** / **Then** go to you find the fault location in step 3 — the next step you cannot find the fault location — step 8

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action	
5	**If**	**Then**
	the path is protected and the alarm is against the Working Muxponder	go to the next step
	the path is protected and the alarm is against the Protection Muxponder	Once you have pinpointed where the fault is, switch traffic off of the affected fiber(s). Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310 for every Muxponder that uses the fiber. Refer to a network topology diagram and the list of Channel Assignments in the System Manager to determine the impacted Muxponders. Go to the next step.
	the path is unprotected	go to the next step. Performing the next step may affect traffic.
6	Once you have located where the fault is, use an optical power meter to find the exact cause of the fault. Start at a point on the fiber where there is light, and follow the signal path, making power measurements at each connector, until the cause of the fault is found. Use a site-fibering diagram to follow the signal flow. Look for a fiber, fiber connector, or optical filter with exceeding amounts of loss. Look in Chapter 6 "Link engineering components" in *Network Planning and Link Engineering* 323-1701-110 for signal path and component loss values.	

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action

CAUTION
DISABLE AUTOMATIC LASER SHUTDOWN FIRST
If Automatic Laser Shutdown (ALS) is enabled, disable ALS for all shelves that will be affected by this maintenance activity. Use a network topology diagram and channel listing to determine the far-end and near-end sites that will be affected when the ring is opened. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.

7 Fix the problem found in step 6.

- if it is a damaged, bent, or kinked fiber, then replace it.
- if it is a dirty connector refer to Chapter 9 "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.
- if it is a faulty component or filter refer to Chapter 2 "Replacing shelf components" in *Maintenance and Replacement Procedures* in 323-1701-546.

If	Then
the alarm remains	go to the next step
the alarm clears	you have completed the procedure

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action

8 **If** there is MOTR—Low Optical Power Warning **Then** go to

on the only Muxponder in the east/west plane	step 8
otherwise	step 9

If	Then
there are amplifiers between the upstream and downstream Muxponder	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support to troubleshoot. If troubleshooting does not clear the alarm, go to step 10
there are no amplifiers between the upstream and downstream Muxponder	go to step 10

9

If	Then
there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
there are no amplifiers between the upstream and downstream Muxponders	Contact your next level of support

10

If	Then
the path is protected and the alarm is against the Working Muxponder	go to the next step
the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
the path is unprotected	go to the next step. Performing the next step may affect traffic.

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action
11	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming Muxponder and its corresponding far-end Muxponder. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.
12	Using the System Manager, record the received power level on the Muxponder circuit pack. Check if the receiving power level is within the operational threshold as defined below. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for the minimum Rx sensitivity of the Muxponder. ***Note:*** You can record the power level from the Equipment—Facility window in the System Manager.

If	Then
the receive power is greater than (0.5 dB + minimum Rx sensitivity) and less than the receiver overload	the problem is with the Muxponder. Go to the next step.
the received power is equal to or less than (0.5 dB + minimum Rx sensitivity)	go to step 15

13

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action

14

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	replace the original circuit pack. Contact your next level of support.

15 Use the System Manager to check the transmitting power of the corresponding far-end Muxponder. Make sure that the transmit power level is within the operational threshold.

Note 1: You can record the power level from the Equipment—Facility window in the System Manager.

Note 2: The far-end Muxponder is the Muxponder that is originating the signal which the alarming near-end Muxponder is receiving. Use a network topology map to determine the far-end Muxponder.

Note 3: Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.

If the transmit power level is	**Then** go to
not within the operational threshold	the next step
within the operational threshold	step 18

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action

16

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

17

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the far-end Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	make sure the new card’s line-side Tx port is within the operational threshold and go to the next step.

18 Use the proper cleaning kit to clean all the connectors attached to the receiving (near-end) Muxponder line-side Rx port and to the line-side Tx Port on the transmitting (far-end) Muxponder. For information on cleaning, see “Cleaning connectors” in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. Use a network topology diagram to determine the transmitting (far-end) Muxponder.

Note: If you are using the OMX 4CH + Fiber Manager, clean both ends of the patch-cord between the OMX and the Muxponder.

— Clean each connector separately.

— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 12, this will allow you to see if there is any improvement to the Rx power.

—continued—

Procedure 17-24 (continued)
MOTR—Low Optical Power Warning

Step	Action

CAUTION
Risk of loss of traffic across multiple bands
Do not clean any optical fibers on the optical fiber plant, or on connections to the OMX. This affects traffic over multiple bands. Clean only the pigtail connections at the specified Muxponder circuit packs.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	it is possible that the patch cord that connects the Muxponder to the OMX at the near-end or far-end is broken damaged or bent. Try replacing the patch cord.

ATTENTION
If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures*, 323-1701-310.

If you are using ALS and disabled it during this procedure, re-enable it for each site. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-25
MOTR—Manual Switch to (West) or (East) path active

Probable cause

The Manual Switch to West Path Active alarm becomes active on the line side when the user requests that the signal on a protected revertive path be switched to the west path.

The Manual Switch to East Path Active alarm becomes active when the user requests that the signal on a protected revertive path be switched to the east path.

This alarm is a normal indication if a Manual Switch has been requested for testing or maintenance purposes.

Impact

Minor, non-service-affecting.

Action

Step	Action
1	Determine if the manual switch is active for testing or maintenance purposes.
2	**If** the manual is / **Then** necessary for testing or maintenance activities — you have completed this procedure not necessary — go to the next step
3	Remove the Manual switch if it is not necessary. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures,* 323-1701-310. **If** / **Then** the alarm clears — you have completed this procedure the alarm remains — contact your next level of support

—end—

Procedure 17-26
MOTR—Optical Receiver Overload

Probable cause

This alarm is raised on the line-side when the Muxponder circuit pack is receiving an abnormally high optical input signal. One of the following conditions exists:

- the receiving Muxponder circuit pack is defective
- the transmitting Muxponder circuit pack is defective
- the network contains amplifiers that are not equalized properly. If there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly.

Impact

Table 17-10 lists the impact that the alarm has under different conditions.

Table 17-10
Optical Receiver Overload alarm impact

Conditions	Severity	Impact
The alarm reported on the working line-side is critical under the following conditions: • there are channel assignments on the Muxponder, and the Muxponder is in-service • the path assigned to the Muxponder is unprotected or the path assigned to the Muxponder is protected and the protection path is not carrying traffic	Critical	Service-affecting
The alarm reported on the line-side is major under the following conditions: • if there are no channel assignments on the Muxponder • if the path assigned is protected and the matching Muxponder is operating correctly	Major	Non-service-affecting

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Check the corresponding far-end Muxponder or, if applicable, Optical Fiber Amplifiers (OFA) for failures or alarms. Use a network topology diagram to determine the far-end Muxponders and OFAs. Troubleshoot these alarms/failures before proceeding. ***Note 1:*** A common cause of this alarm is problems with amplifier equalization. If this network uses OFAs, it is strongly recommended that you contact your next level of support to re-equalize the amplifiers. ***Note 2:*** If the transmitting power on the far-end Muxponder is too high, you might see an Muxponder Transceiver Degrade alarm on the far-end shelf. Clear this alarm first by following Procedure 17-41 "MOTR—Transceiver Degrade". **—continued—**

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action
2	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming Muxponder and its corresponding far-end Muxponder. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.
3	At the near-end shelf, use the System Manager to check if you are receiving Muxponder High Optical Power warnings on all Muxponders in the same east/west plane, or just on one Muxponder.

If the Rx power level is too high	**Then** go to
on the only Muxponder in the east/west plane	step 4
on all Muxponders in the same east/west plane	step 6
on one of multiple Muxponders in the same east/west plane	step 8

4	**If**	**Then**
	there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support to troubleshoot. If troubleshooting does not clear the alarm, go to step 8.
	there are no amplifiers between the upstream and downstream Muxponders	there is a problem with the line fiber between the sites, go to the next step

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action

5 Reduce the input power of the entire band by performing the following steps:

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the band/direction. If the traffic is protected, follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310 to switch traffic for the Muxponder in the east/west plane before proceeding.

- Pull-out the fiber going into the near-end Muxponder line-side Rx port and place it into an Optical Power meter.
- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on the OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the Muxponder line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.
- Once you have verified with the power meter that the Rx power is within the operational threshold of the particular Muxponder line-side Rx port, replace the fiber into the Muxponder line-side Rx port. The alarm should clear.

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310 to switch traffic for the Muxponder in the east/west plane before proceeding.

Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action	
	If	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to step 8

6	**If**	**Then**
	there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
	there are no amplifiers between the upstream and downstream Muxponders	there is a problem with the line fiber between the sites, go to the next step

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action

7 Reduce the input power of the entire band by performing the following steps:

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction. If the traffic is protected, follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310 to switch traffic for every Muxponder in the east/west plane before proceeding.

- Pull-out the fiber going into the near-end Muxponder line-side Rx port and place it into an Optical Power meter.
- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on all four OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the Muxponder line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.
- Once you have verified with the power meter that the Rx power is within the operational threshold of the particular Muxponder line-side Rx port, replace the fiber into the Muxponder line-side Rx port. The alarm should clear.

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310 to switch traffic for every Muxponder in the east/west plane before proceeding.

Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

8 Make sure the optical fiber is connected correctly on the Muxponder line-side Rx port at the near-end site and on the Muxponder line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patch-cords between the OMX, LC-to-SC patch panel, and the Muxponder.

Note: Use a network topology diagram to determine the near-end and far-end (far-end) sites.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

9 Use the System Manager to check the received power level on the line-side Rx port of the near-end Muxponder. Write down the value. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.

Note: You can record the power level from the Equipment—Facility window in the System Manager.

If the power level is	**Then**
above the operational threshold	go to step 12
within the operational threshold	the problem is with the Muxponder. Go to the next step.

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action

10

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

11

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

12 Use the System Manager to check the transmitting power of the corresponding far-end Muxponder. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels. Make sure that the transmit power level is within the operational threshold.

Note 1: You can record the power level from the Equipment—Facility window in the System Manager.

Note 2: The far-end Muxponder is the Muxponder that is originating the signal which the alarming near-end Muxponder is receiving. Use a network topology map to determine the far-end Muxponder.

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action

Note 3: Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.

If the transmit power level is	**Then** go to
not within the operational threshold	the next step
within the operational threshold	step 15

13

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	**Then**
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

14

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the far-end Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	**Then**
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	make sure the new circuit pack’s line-side Tx port is within the operational threshold and go to the next step

—continued—

Procedure 17-26 (continued)
MOTR—Optical Receiver Overload

Step	Action

15

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

16

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-27
MOTR—Optical System Identifier Mismatch

Probable cause

This alarm becomes active when the Muxponder on one end has a different optical system identifier (OSID) from the Muxponder to which it is optically connected. This alarm is raised on the MOTR circuit packs at both ends

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of interfering with alarm reporting
It is essential that the OSID for all line-facing equipment is provisioned correctly for bridge sites, for hub and spoke rings, and for rings with intrasite fault sectionalization (IFS). Refer to the "Rules for provisioning OSIDs" in *Provisioning and Operating Procedures*, 323-1701-310.

Know the network topology and exercise caution when provisioning OSIDs. Incorrect OSID provisioning can generate unnecessary Incomplete Provisioning alarms, and can cause the IFS feature to operate incorrectly.

Action

Step	Action
1	Refer to the "Rules for provisioning OSIDs" and the associated Precautions in Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures*, 323-1701-310.
2	Provision the correct OSID for the MOTR circuit pack.The Optical System Identifier has to be the same on both ends. Assign an OSID that matches the other equipment in the same ring. Follow Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-28
MOTR—Overhead Link Failure

Probable cause

This alarm is raised on the line-side when the Point-to-Point Protocol (PPP) is unable to link to the other side (for example if there are echo request failures) as the result of misconnected fibers between the near end and the Far end.

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-28 (continued)
MOTR—Overhead Link Failure

Action

Step	Action
1	Make sure the optical fiber is connected correctly on the Muxponder line-side Rx port at the near-end site and on the Muxponder line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patch-cord between the OMX, the SC-LC patch panel, and the Muxponder. Also, make sure there is not a physical loopback on the far-end Muxponder. ***Note:*** Use a network topology diagram to determine the near-end and far-end sites.
2	**CAUTION** **Risk of recovery procedures affecting traffic** Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system). Reseat the near-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

3	**CAUTION** **Risk of recovery procedures affecting traffic** Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system). Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—end—

Procedure 17-29
MOTR—Path Lockout Active

Probable cause

This alarm becomes active on the line side when you set a lockout on the active path in a protected Muxponder connection. The alarm remains as long as the lockout is active.

This alarm is a normal indication if a path lockout has been set for testing or maintenance purposes.

Impact

Minor, non-service-affecting.

Action

Step	Action
1	Determine if the path lookout is set for testing or maintenance purposes.
2	**If** the path lockout is … **Then** …

If	Then
necessary for testing or maintenance activities	you have completed this procedure
not necessary	go to the next step

Step	Action
3	Release the path Lockout switch if it is not necessary. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-30
MOTR—Protection Channel Match Fail

Probable cause

This alarm is raised on the line-side of the 1+1 bidirectional protection Muxponder circuit pack when the near-end protection request is not consistent with the far-end acknowledgement.

Impact

Major, non-service-affecting.

Action

Step	Action
1	Check for Wrapper, Section, and Line PM counts on the circuit pack raising the alarm. Refer to Chapter 7 “Performance monitoring procedures” in *Provisioning and Operating Procedures*, 323-1701-310.
2	Troubleshoot the PM counts accordingly. See Chapter 14 “Clearing PM alarms” in *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.
3	**If** / **Then** the alarm clears — you have completed this procedure the alarm remains — go to the next step
4	**If** the topology used is / **Then** go to bookended — step 5 interoperable — step 7
5	Reseat all 4 Muxponders. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310. **If** / **Then** the alarm clears — you have completed this procedure the alarm remains — go to the next step

—continued—

Procedure 17-30 (continued)
MOTR—Protection Channel Match Fail

Step	Action
6	Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

Step	Action
7	Check for alarms in the SONET/SDH network and follow the appropriate procedures to clear the alarms.
8	

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-31
MOTR—Protection Mate Circuit Pack Not Available

Probable cause

Muxponder circuit packs have a protection mate circuit pack when they are involved in a protected channel assignment. This alarm becomes active on the line-side when one of the following conditions exists:

- the line-side facility of the mate Muxponder in the shelf is out-of-service (OOS)
- there is a problem with the OCMs. In this case, the alarm is raised on more than one Muxponder.

Impact

Major, non-service-affecting.

Note: Traffic is lost if the remaining Muxponder fails or is taken out-of-service before the Muxponder it is paired with is returned to service.

—continued—

Procedure 17-31 (continued)
MOTR—Protection Mate Circuit Pack Not Available

Action

Step	Action	
1	**If**	**Then** go to
	the alarm is raised on one Muxponder	step 2
	the alarm is raised on more than one Muxponder	step 4
2	Put the facilities of the protection mate Muxponder circuit pack in-service. Follow Procedure 3-10 “Putting a circuit pack or SFP facility in-service” in *Provisioning and Operating Procedures*, 323-1701-310. If the protection mate Muxponder circuit pack is out-of-service, follow Procedure 3-7 “Putting a circuit pack or SFP in-service” in *Provisioning and Operating Procedures*, 323-1701-310.	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
4	Check for alarms against the OCM circuit packs and clear the OCM alarms. See Chapter 7 “Clearing OCM alarms” for OCM alarm clearing procedures.	
5	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
6	Make sure that both OCM circuit packs are in-service. Follow Procedure 3-7 “Putting a circuit pack or SFP in-service” in *Provisioning and Operating Procedures*, 323-1701-310.	
7	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-32
MOTR—Protection Mode Mismatch

Probable cause

This alarm becomes active on the line side when the protection mode provisioning of the channel assignment on the two ends is not consistent (that is, on one end the protection mode of the channel assignment is bidirectional, while on the other end it is uni-directional or vice versa).

Impact

Minor, non-service-affecting.

Action

Step	Action
1	Verify if an AIS or RDI alarm is raised against the protection Muxponder.

If	Then
AIS or RDI are raised against the protection muxponder	Clear these alarms first. Refer to MOTR—Alarm Indication Signal on page 17-8 and MOTR—Remote Defect Indication on page 17-124 in this book
otherwise	go to the next step

Step	Action
2	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the Muxponder at the near-end shelf and note the protection mode in the Protection Mode field.
3	Perform the same query for the Muxponder at the far-end shelf and make sure the protection mode specified is the same as the one noted in step 3.
4	**If** the specified protection mode **Then**

is different	follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310, and modify the Protection Mode field so that the specified protection modes are the same. Go to the next step.
is the same	contact your next level of support

Step	If	Then
5	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-33
MOTR—Protection Scheme Mismatch

Probable cause

This alarm becomes active on the line side in an interoperable topology when the SONET/SDH system has a protection scheme other than 1+1.

Impact

Minor, non-service-affecting.

Action

Step	Action	
1	**If** the topology used is	**Then**
	bookended	contact your next level of support
	interoperable	step 3
2	In the SONET/SDH system, identify the protection provisioning scheme. Make sure that the protection scheme is 1+1 linear.	
3	**If**	**Then**
	the protection is 1+1 linear	contact your next level of support
	the protection is not 1+1 linear	use the appropriate procedures for provisioning the SONET/SDH equipment. Go to the next step.
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-34
MOTR—Remote Automatic Laser Shutdown

ATTENTION

If a fiber break occurs and is being repaired when automatic laser shutdown (ALS) or automatic laser recovery (ALR) is active on a fiber, there are impacts on the behavior of the alarms in the system. If you use light to test the broken fiber (with a light source or an optical time domain reflectometer (OTDR)), you clear the ALS alarms. This is because the shelf detects light and clears the Loss of Signal (LOS) condition. As a result, the shelf and the remote shelf power up the laser (depending on whether both Tx and Rx fibers are cut or only one of them is cut). If a Remote Automatic Laser Shutdown alarm is raised on the shelf when the light is removed, the alarm is replaced by an LOS alarm.

If all the channels impacted by the fiber break detect light when the laser is powered up, the Automatic Laser Shutdown alarm is cleared This is an expected behavior because a shelf cannot distinguish between a light source from an optical test set or a light source from a remote shelf.

Probable cause

This alarm becomes active when a laser is shut down after a fiber break. The alarm is raised on the Rx line-side port of the Muxponder of the remote shelf that sends out the signal. Clearing the alarm requires first physically repairing the broken fiber and then restoring traffic through the System Manager. To restore traffic, you can either issue a manual laser activation command or enable automatic laser recovery. Follow this procedure to clear the alarm.

Impact

Warning, non-service-affecting.

—continued—

Procedure 17-34 (continued)
MOTR—Remote Automatic Laser Shutdown

Requirements

You must be logged into the System Manager as an Admin or Operator level user.

The laser activation command only needs to be issued at one end of a span that is in ALS mode.

When a network is in ALS mode, you cannot rely on the light in the fiber to locate a fiber cut. Nortel Networks recommends that you use an optical time domain reflectometer (OTDR) to project light in the fiber when a Loss of Signal alarm is detected. The OTDR device provides information about the location of the fiber cut. You can also use a light source device to generate an optical signal into the fiber. In this case, you troubleshoot the fiber cut in the same way as when the ALS feature is disabled.

After ALS recovery from any major fiber plant disturbance (fiber cut/splice, fiber replacement, adding or removing bands or channels) the optical signal should be re-equalized. Follow the appropriate procedure in *Testing and Equalization Procedures*, 323-1801-222.

Action

Step	Action	
1	Repair the broken fiber in the field.	
2	**If** you want	**Then**
	manual laser recovery	see Procedure 1-45, "Enabling manual laser recovery" in *Provisioning and Operating Procedures*, 323-1701-310.
	automatic laser recovery	see Procedure 1-44, "Enabling or disabling automatic laser recovery" in *Provisioning and Operating Procedures*, 323-1701-310.
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-35
MOTR—Remote Defect Indication

Probable cause

This alarm becomes active on the line side when one of the following conditions exists:

- an error exists at the far-end NE or a failure has occurred
- interoperable topology, downstream facility failure in the SONET/SDH network
- when a fault occurs in the signal that is transmitted between the Muxponders and the Remote Fault Notification is enabled (For more information on RFN, see "Fault sectionalization" in *Software and User Interface*, 323-1701-101). In this case, the Muxponder detecting the fault sends a remote fault notification message in the overhead channel back to the near-end Muxponder. When the near-end Muxponder receives this remote fault notification message, an RDI Critical, SA alarm is raised on the Rx port.

Impact

Warning, non-service-affecting.

Critical, service-affecting (if Remote Fault Notification is enabled). For more information on RFN, see *Software and User Interface*, 323-1701-101.

Action

Step	Action	
1	**If** the topology is	**Then** go to the
	bookended	next step
	interoperable	step 4
2	On the Fault–Active Alarms window, examine the alarms that are raised on the downstream node to identify the cause of this fault. Follow the appropriate procedures to clear the alarms.	
3	**If**	**Then**
	the RDI alarm clears	you have completed this procedure
	the RDI alarm remains	contact your next level of support

—continued—

Procedure 17-35 (continued)
MOTR—Remote Defect Indication

Step	Action	
4	Check for alarms in the SONET/SDH network and follow the appropriate procedures to clear the alarms.	
5	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-36
MOTR—Signal Failure

Probably cause

This alarm is raised when the received optical signal is degraded and the line BER exceeds 10 E-3. One of the following conditions exists:

- excessive attenuation
- dirty optical fiber
- improper connector seating
- transmit laser degrade

Impact

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or reconnections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Table 17-11 on page 17-127 lists the impact that the alarm has under different conditions.

—continued—

Procedure 17-36 (continued)
MOTR—Signal Failure

Table 17-11
Signal Failure alarm impact

Alarm	Conditions	Severity	Impact
Signal Failure	The alarm reported on the working line side is critical under the following conditions: • there are channel assignments on the Muxponder, and the Muxponder is in-service • the path assigned to the Muxponder is unprotected or the path assigned to the Muxponder is protected and the protection path is not carrying traffic	Critical	Service-affecting
	The alarm reported on the line-side is major under the following conditions: • if there are no channel assignments on the Muxponder • the path assigned is protected and the matching Muxponder is operating correctly	Major	Non-service-affecting

—continued—

Procedure 17-36 (continued)
MOTR—Signal Failure

Action

Step	Action
1	**If** the topology is / **Then** go to the
	interoperable / next step
	bookended / step 6
2	Use an optical power meter to measure the receive power level at the first 10Gbit/s MOTR interfacing with the SONET network. Check if the power level is within the operational threshold
	If / **Then** go to
	the Rx power is within the operational threshold / step 6
	the Rx power is not within the operational threshold / the next step
3	Make sure that there are no alarms in the SONET/SDH network related to the paths terminating at the 10Gbit/s MOTR.
4	If there are alarms in the SONET/SDH network, follow the appropriate procedures to clear the alarms.
5	**If** / **Then**
	the alarm clears / you have completed this procedure
	the alarm remains / contact your next level of support
6	Use an optical power meter to measure the receive power level at the faulty MOTR 10Gbit/s GE/FC v-cat. Check if the receive power level is consistent with NMT receive power level
	If / **Then** go to
	the Rx power is consistent with the NMT output / call your next level of support
	the Rx power is not consistent with the NMT output / the next step
7	Re-equalize your network. Refer to the equalization procedure in the Testing and Equalizing book 323-1701-222.
	If / **Then**
	the alarm clears / you have completed this procedure
	the alarm remains / go to the next step

—continued—

Procedure 17-36 (continued)
MOTR—Signal Failure

Step	Action

8

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

9

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-37
MOTR—TCA - Optical Power Rx High

Probable cause

This alarm becomes active on the line side when the power of the optical signal received is exceeding the user-defined threshold of the Rx Power High parameter. It can also be raised if the user-defined threshold value is not properly set.

If there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly.

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

ATTENTION
Power fluctuating around user defined TCAs and alarm toggling
This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.

—continued—

Procedure 17-37 (continued)
MOTR—TCA - Optical Power Rx High

Action

Step	Action
1	Make sure that the user-defined threshold value for the line-side is correct. If the value is set too low, adjust it to the desired value. Follow Procedure 7-7 "Adjusting PM threshold values" in *Provisioning and Operating Procedures*, 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

2	Check the corresponding far-end Muxponder or, if applicable, Optical Fiber Amplifiers (OFA) for failures or alarms. Use a network topology diagram to determine the far-end Muxponder and OFAs. Troubleshoot these alarms/failures before proceeding. ***Note 1:*** A common cause of this alarm is problems with amplifier equalization. If this network uses OFAs, it is strongly recommended that you contact your next level of support to re-equalize the amplifiers. ***Note 2:*** If the transmitting power on the far-end Muxponder is too high, you might see a MOTR Transceiver Degrade alarm on the far-end shelf. Clear this alarm first by following Procedure 17-41 "MOTR—Transceiver Degrade".
3	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming Muxponder and its corresponding far-end Muxponder. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.
4	At the near-end shelf, use the System Manager to check if you are receiving MOTR High Optical Power warnings on all (or most) Muxponders in the same east/west plane or just on one Muxponder. ***Note 1:*** You can record the power level from the Equipment—Facility window in the System Manager. ***Note 2:*** Because MOTR—High Optical Power Warning is a threshold warning, it may not appear on all Muxponders. Check and see if the power levels on all Muxponders are relatively high. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for the Muxponder receive overload specifications.

—continued—

Procedure 17-37 (continued)
MOTR—TCA - Optical Power Rx High

Step	Action

Note 3: On the Optical Metro 5200 shelf, the east plane is defined as slots11-18, the west plane is defined as slots 1 to 8. On the Optical Metro 5100 shelf, the east plane is defined as slots 3 and 4, while the west plane is defined as slots 1 and 2.

If the Rx power level is too high	**Then** go to
on the only Muxponder in the east/west plane	step 5
on all Muxponders in the same east/west plane	step 7
on one of multiple Muxponders in the same east/west plane	step 9

5

If	**Then**
there are amplifiers between the upstream and downstream Muxponder	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support to troubleshoot. If troubleshooting does not clear the alarm, go to step 9.
there are no amplifiers between the upstream and downstream Muxponder	there is a problem with the line fiber between the sites, go to the next step

6

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310 to switch traffic for the Muxponder in the east/west plane before proceeding.

Reduce the input power of the entire band by performing the following steps:

- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on the OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the Muxponder line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx power levels. The alarm should clear.

—continued—

Procedure 17-37 (continued)
MOTR—TCA - Optical Power Rx High

Step	Action

- if any optical alarms remain on the Muxponder, refer to the alarm clearing procedure in this book, for that circuit pack

Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to step 9

7

If	Then
there are amplifiers between the upstream and downstream Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
there are no amplifiers between the upstream and downstream Muxponders	there is a problem with the line fiber between the sites, go to the next step

8

CAUTION
Risk of loss of traffic across multiple wavelengths in the band
Adding fixed pads to the front of the Band drop/Band Rx junction affects traffic on the entire band/direction. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310 to switch traffic for every Muxponder in the east/west plane before proceeding.

Reduce the input power of the entire band by performing the following steps:

- Add a fixed pad attenuator to the front of the Band Drop/Band Rx junction of the corresponding OMX. The fixed pad attenuates the entire band and reduces the power on all four OMX channel drop ports. To determine the amount of attenuation, choose a fixed-pad with a value that is sufficient to lower the Muxponder line-side Rx power to within its operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx power levels. The alarm should clear.

—continued—

Procedure 17-37 (continued)
MOTR—TCA - Optical Power Rx High

Step	Action

- Using the System Manager, under Equipment-Facilities, check the Rx powers of all Muxponders at the near-end site and verify they are at the correct operational threshold. All Muxponders in the band should have the same approximate Rx power. If any Muxponders have lower Rx powers, clean the pigtail (or both ends of the patch-cord) going into the respective Muxponders Rx port. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201.
- if any optical alarms remain on any of the Muxponders, refer to the alarm clearing procedure in this book, for that circuit pack

Note: This indicates that there may be a discrepancy between the Network Modeling Tool (NMT) and the actual system. It may be necessary to contact your next level of support for the NMT attenuator values.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

9

If	Then
the path is protected and the alarm is against the Working Muxponder	go to the next step
the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
the path is unprotected	go to the next step. Performing the next step may affect traffic.

10 Make sure the optical fiber is connected correctly on the Muxponder line-side Rx port at the near-end site and on the Muxponder line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patch-cords between the OMX, LC-to-SC patch panel, and the Muxponder.

Note: Use a network topology diagram to determine the near-end and far-end sites.

—continued—

Procedure 17-37 (continued)
MOTR—TCA - Optical Power Rx High

Step	Action

11 Use the System Manager to check the received power level on the line-side Rx port of the near-end Muxponder. Write down the value. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.

Note: You can record the power level from the Equipment—Facility window in the System Manager.

If the power level is	**Then**
above the operational threshold	go to step 14
within the operational threshold	the problem is with the Muxponder. Go to the next step.

12

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	**Then**
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

13

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	**Then**
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—continued—

Procedure 17-37 (continued)
MOTR—TCA - Optical Power Rx High

Step	Action
14	Use the System Manager to check the transmitting power of the corresponding far-end Muxponder line-side Tx port. Make sure that the transmit power level is within the operational threshold. ***Note 1:*** You can record the power level from the Equipment—Facility window in the System Manager. ***Note 2:*** The far-end Muxponder is the Muxponder that is originating the signal which the alarming near-end Muxponder is receiving. Use a network topology map to determine the far-end Muxponder. ***Note 3:*** Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Tx power levels.

If the transmit power level is	**Then** go to
not within the operational threshold	the next step
within the operational threshold	step 17

15

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the far-end Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	**Then**
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

16 Replace the far-end Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	**Then**
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	make sure the new circuit pack’s line-side Tx port is within the operational threshold and go to the next step.

—continued—

Procedure 17-37 (continued)
MOTR—TCA - Optical Power Rx High

Step	Action

17

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

18 Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

ATTENTION
If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures*, 323-1701-310.

If you are using ALS and disabled it during this procedure, re-enable it for each site. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-38
MOTR—TCA - Optical Power Rx Low

Probable cause

This alarm becomes active on the line side when the power of the optical signal received is lower than the user-defined threshold of the Rx Power Low parameter. One of the following conditions exists:

- an optical fiber connection is degraded
- the connector is dirty at the receiving Muxponder or on the transmitting subtending equipment
- an optical patch cord is damaged
- the receiving Muxponder is defective
- the transmitting Muxponder is defective
- the transmitting subtending equipment is defective
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly
- the user-defined threshold value is not correct
- an far-end Optical Fiber Amplifier (OFA) is defective, not equalized properly, and/or is in alarm (line-side only)

Impact

Minor, non-service-affecting.

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

—continued—

Procedure 17-38 (continued)
MOTR—TCA - Optical Power Rx Low

Precautions

ATTENTION
Power fluctuating around user defined TCAs and alarm toggling
This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Make sure that the user-defined threshold for the line-side value is correct. If the value is set too high, adjust it to the desired value.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

2	Make sure the optical fiber is connected at both ends.
3	Record the received power level and the threshold value on the Muxponder circuit pack. You can record the power level from the Performance Monitoring—Equipment tab in the System Manager. Make sure that the receiving power level is within the operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.
4	Check alarms to make sure the corresponding far-end Muxponder has not failed or is missing.

—continued—

Procedure 17-38 (continued)
MOTR—TCA - Optical Power Rx Low

Step	Action
5	Record the transmitted power level and the threshold value on the corresponding far-end Muxponder circuit pack.You can record the power level from the Performance Monitoring—Equipment tab in the System Manager. Make sure that the transmitted power level is within the operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.

CAUTION
Risk of loss of traffic across multiple bands
Do not clean any optical fibers on the optical fiber plant, or on connections to the OMX. This affects traffic over multiple bands. Clean only the connections at the specified Muxponder circuit packs.

6

If	Then
the path is protected and the alarm is against the Working Muxponder	go to the next step
the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
the path is unprotected	go to the next step. Performing the next step may affect traffic.

—continued—

Procedure 17-38 (continued)
MOTR—TCA - Optical Power Rx Low

Step	Action

7 Use the proper cleaning kit to clean all the connectors. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201.

— Clean each connector separately.

— Record the operating power level after you clean each connector.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

8

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

9 Replace the Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-39
MOTR—TCA - Optical Power Tx High

Probable cause

This alarm becomes active on the line side when the laser is operating within an acceptable performance range, but output is exceeding the user-defined threshold of the TxPowerHigh parameter. The alarm can also be raised if the user-defined threshold value is not correct.

Impact

Minor, non-service-affecting.

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

Precautions

ATTENTION
Power fluctuating around user defined TCAs and alarm toggling
This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-39 (continued)
MOTR—TCA - Optical Power Tx High

Action

Step	Action
1	Make sure that the user-defined threshold for the line-side value is correct. If the value is set too low, adjust it to the desired value.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

2	Make sure the optical fiber is connected at both ends.
3	Record the received power level and the threshold value on the Muxponder circuit pack. You can record the power level from the Performance Monitoring—Equipment tab in the System Manager. Make sure that the receiving power level is within the operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.
4	Check alarms to make sure the corresponding far-end Muxponder has not failed or is missing.
5	Record the transmitted power level and the threshold value on the corresponding far-end Muxponder circuit pack.You can record the power level from the Performance Monitoring—Equipment tab in the System Manager. Make sure that the transmitted power level is within the operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels.

CAUTION
Risk of loss of traffic across multiple bands
Do not clean any optical fibers on the optical fiber plant, or on connections to the OMX. This affects traffic over multiple bands. Clean only the connections at the specified Muxponder circuit packs.

—continued—

Procedure 17-39 (continued)
MOTR—TCA - Optical Power Tx High

Step	Action

6

If	Then
the path is protected and the alarm is against the Working Muxponder	go to the next step
the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
the path is unprotected	go to the next step. Performing the next step may affect traffic.

7 Use the proper cleaning kit to clean all the connectors. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201.

— Clean each connector separately.

— Record the operating power level after you clean each connector.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

8

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-39 (continued)
MOTR—TCA - Optical Power Tx High

Step	Action
9	Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-40
MOTR—TCA - Optical Power Tx Low

Probable cause

This alarm becomes active on the line side if one of the following conditions exists:

- the laser is operating within an acceptable performance range, but output is exceeding the user-defined threshold of the TxPowerLow parameter
- the line side laser is shut down because the receiving end has the Loss of Signal alarm
- the user-defined threshold value is not correct

Impact

Minor, non-service-affecting.

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

Precautions

ATTENTION
Power fluctuating around user defined TCAs and alarm toggling
This alarm may toggle on the System Manager if the receive optical power reading fluctuates around the user defined TCA threshold. To clear the behavior of alarm toggling, move the user defined TCA threshold away from the power range around which the optical power reading fluctuates, or adjust the power level to the acceptable range so that the alarm is cleared.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-40 (continued)
MOTR—TCA - Optical Power Tx Low

Action

Step	Action
1	Make sure that the user-defined threshold for the line-side value is correct. If the value is set too high, adjust it to the desired value.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

2

If	Then
the path is protected and the alarm is against the Working Muxponder	go to the next step
the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
the path is unprotected	go to the next step. Performing the next step may affect traffic.

3

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-40 (continued)
MOTR—TCA - Optical Power Tx Low

Step	Action
4	Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-41
MOTR—Transceiver Degrade

Probable cause

This alarm becomes active when the output laser or the optical receiver is operating within an acceptable performance range, but the output or receiver is beginning to degrade.

Properties of the laser or receiver change as the circuit pack ages. When these properties approach unacceptable levels the Transceiver Degrade alarm is raised.

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-41 (continued)
MOTR—Transceiver Degrade

Action

Step	Action

1

If	Then
the path is protected and the alarm is against the Working Muxponder	go to the next step
the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
the path is unprotected	go to the next step. Performing the next step may affect traffic.

2

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

—continued—

Procedure 17-41 (continued)
MOTR—Transceiver Degrade

Step	Action

3

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Refer to Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

ATTENTION
If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-42
MOTR—Unassigned Optical System Identifier

Probable cause

This alarm becomes active on the line side when a Muxponder is seated in the same shelf, in the same direction (east or west plane) with another OCLD, OTR, or Muxponder, and both circuit packs are of the same band and channel, and the optical system identifier (OSID) of the first circuit pack is unassigned.

For example

- An OCLD (band 1, channel 1) is seated in the west plane of shelf in an unprovisioned slot. When the system autoprovisions the OCLD, the OSID is not assigned (the field is left blank).
- A Muxponder (band 1, channel 1) is seated in the west plane of the same shelf, in an unprovisioned slot. When the system autoprovisions the Muxponder, an Unassigned OSID alarm is raised on the Muxponder.

  Note: The OSID is unassigned when circuit packs autoprovision, so this alarm is raised when circuit packs are first seated in a shelf, in an unprovisioned slot.

Impact

Table 17-12 lists the impact that the alarm has under different conditions.

Table 17-12
Unassigned OSID alarm severity and impact

Condition	Severity	Impact
If any of the following conditions exist: • the path assigned to the Muxponder is unprotected • the path assigned to the Muxponder is protected and the matching Muxponder has an alarm condition	Critical	Service-affecting
If any of the following conditions exist: • there is no channel assignment • the path assigned is protected and the matching Muxponder is operating correctly	Minor	Non-service-affecting

—continued—

Procedure 17-42 (continued)
MOTR—Unassigned Optical System Identifier

Precautions

CAUTION
Risk of interfering with alarm reporting
It is essential that the OSID for all line-facing equipment is provisioned correctly for bridge sites, for hub and spoke rings, and for rings with intrasite fault sectionalization (IFS). Refer to the "Rules for provisioning OSIDs" in *Provisioning and Operating Procedures*, 323-1701-310.

Know the network topology and exercise caution when provisioning OSIDs. Incorrect OSID provisioning can generate unnecessary alarms and can cause the IFS feature to operate incorrectly.

Action

Step	Action
1	Refer to the "Rules for provisioning OSIDs" and the associated Precautions in Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures*, 323-1701-310.
2	Provision the correct OSID for the circuit pack. Follow Procedure 3-36 "Provisioning the optical system identifier (OSID)" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-43
MOTR—Unknown Circuit Pack

Probable cause

This alarm becomes active when one of the following conditions exists:

- the SP circuit pack fails to retrieve the manufacturing data on the circuit pack (data may be missing or may be incorrect)
- the circuit pack type cannot be recognized by the software (the Release version of the circuit pack is not supported by the Release version of the shelf)

If the slot is provisioned for a Muxponder, the System Manager displays MOTR in the Card column of the Fault–Active Alarms window.

Impact

Major, non-service-affecting

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-43 (continued)
MOTR—Unknown Circuit Pack

Action

Step	Action	
1	Read the latest Baseline Report to see if the circuit pack is compatible with the Release version of the shelf. ***Note:*** Baseline Reports are available through Nortel Networks. Refer to the "Technical assistance service telephone numbers" section in "About this document" at the beginning of this book.	
2	**If** the circuit pack	**Then**
	is compatible	go to the next step
	is incompatible	replace it with a compatible circuit pack. Follow Procedure 3-5 "Replacing an OTR circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546. If the alarm clears, you have completed this procedure. If the alarm remains, go to the next step.

—continued—

Procedure 17-43 (continued)
MOTR—Unknown Circuit Pack

Step	Action

3

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

4

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Refer to Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

—end—

Procedure 17-44
MOTR—Working/Protection Fiber Mismatch

Probable cause

This alarm is raised on a bidirectional protected connected against the protection Muxponder's line-side facility when the near-end protection line-side port is connected to the far-end working line-side port.

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm is not service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	 **CAUTION** **Risk of recovery procedures affecting traffic** Disconnecting the fiber drops traffic. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Check the following:

a. the working line-side of the near-end is connected to the working line-side at the far-end

b. the protection line-side at the near-end is connected to the protection line-side at the far-end

c. the protection mode is 1+1 APS

2 Reconnect any faulty connections.

—end—

Procedure 17-45
MOTR—Wrapper Alarm Indication Signal

Probable cause

This alarm becomes active on the line side when one of the following conditions exists:

- the far-end Muxponder has no channel assignment or the line-side is OOS
- a problem exists at the far-end Muxponder, such as a line-side failure or circuit pack fail

Impact

Warning, non-service-affecting.

Action

Step	Action
1	Make sure that **a.** the line facility on the far-end Muxponder is in-service. Refer to Procedure 3-10 “Putting a circuit pack or SFP facility in-service” in *Provisioning and Operating Procedures*, 323-1701-310. Use a network topology diagram to determine the far-end site. **b.** there is channel assignment on the far-end Muxponder. Follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310. **c.** there is no Loss of Signal, Loss of Frame, or Loss of Lock alarm on the y on the far-end. Follow the appropriate procedures to troubleshoot these alarms.

2	If	Then
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-46
MOTR—Wrapper Loss of Frame

Probable cause

This alarm becomes active on the line side when the Muxponder circuit pack is unable to detect the Wrapper Frame in the signal from the far-end equipment.

Impact

Table 17-13 lists the impact that the alarm has under different conditions.

Table 17-13
Wrapper Loss of Frame alarm impact

Alarm	Conditions	Severity	Impact
Loss of Frame	The alarm reported on the working line-side is critical under the following conditions: • there are channel assignments on the Muxponder, and the Muxponder is in-service • the path assigned to the Muxponder is unprotected or the path assigned to the Muxponder is protected and the protection path is not carrying any traffic	Critical	Service-affecting
	The alarm reported on the line-side is minor under the following conditions: • if there are no channel assignments on the Muxponder • if the path assigned is protected and the matching Muxponder is operating correctly	Minor	Non-service-affecting

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Check the corresponding far-end Muxponder or, if applicable, Optical Fiber Amplifiers (OFA) for failures or alarms. Use a network topology diagram to determine the far-end Muxponders and OFAs. Troubleshoot these alarms/failures before proceeding.
2	At the near-end shelf, use the System Manager to check if you are receiving MOTR—Loss of Frame alarms on all (or most) Muxponders in the same east/west plane, or just on a single Muxponder. ***Note 1:*** On the Optical Metro 5200 shelf, the east plane is defined as slots 11-18, the west plane is defined as slots 1 to 8. On the Optical Metro 5100 shelf, the east plane is defined as slots 3 and 4, while the west plane is defined as slots 1 and 2. ***Note 2:*** If there is only one Muxponder in the east/west plane, go to step 6. If this fails to clear the alarm, then go to step 3.

If	**Then** go to
the alarm appears on all (or most) Muxponders in the same east/west plane	the next step
on one of multiple Muxponders in the same east/west plane	step 6

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Step	Action	
3	**If**	**Then**
	there are amplifiers between the far-end and near-end Muxponders	there is a problem at the amplifier site, the ring requires re-equalization, or both. Contact your next level of support.
	there are no amplifiers between the far-end and near-end Muxponders	there is a problem with the line fiber between the sites. Go to the next step.
4	**CAUTION** **Risk of loss of traffic across multiple wavelengths in the band** Disturbing the line fiber affects traffic on the entire band/direction.	
	CAUTION **DISABLE AUTOMATIC LASER SHUTDOWN** If Automatic Laser Shutdown (ALS) is enabled, disable ALS for all shelves that will be affected by this maintenance activity. Use a network topology diagram and channel listing to determine the far-end and near-end sites that will be affected when the ring is opened. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.	

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Step	Action

If	Then
the path is protected and the alarm is against the Working Muxponder	go to the next step
the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
the path is unprotected	go to the next step. Performing the next step may affect traffic.

5 The line fiber between the far-end Muxponders and the near-end Muxponders must be investigated for loss or degrade.

- Using a power meter, a cleaning kit, and a network topology diagram, start at the far-end site and clean every connector on the path until you reach the near-end site. Measure the power with the power meter after each cleaning to check for improvements in the line power. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201.
- Also, check for damaged, kinked, tightly-bent fiber, or anything else that might impede the optical signal. This includes optical filters such as OMXs or C/L Splitter/Couplers. Replace any damaged fibers or filters. If it is found to be a faulty component or filter refer to Chapter 2 "Replacing shelf components" in *Maintenance and Replacement Procedures* in 323-1701-546.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Step	Action	
6	**If**	**Then**
	the path is protected and the alarm is against the Working Muxponder	go to the next step
	the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	the path is unprotected	go to the next step. Performing the next step may affect traffic.
7	If Automatic Laser Shutdown (ALS) is enabled, disable ALS for both the near-end and far-end shelves which contain the alarming Muxponder and its corresponding far-end Muxponder. Use a network topology diagram and channel listing to determine the near-end and far-end sites. If you do not know if ALS is enabled or not, assume it is enabled. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310 to disable ALS.	

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Step	Action
8	Make sure the optical fiber is connected correctly on the Muxponder line-side Rx port at the near-end site and on the Muxponder line-side Tx port at the far-end site. If you are using the OMX 4CH + Fiber Manager, check both ends of the patch-cords between the OMX, LC-to-SC patch panel, and the Muxponder. ***Note:*** Use a network topology diagram to determine the near-end and far-end sites.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

9	Check to see if the Muxponder line-side Rx power level is within the operational threshold and write down the value. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels for the line-side specifications. ***Note:*** Record the received power level on the Muxponder. You can record the power level from the Equipment—Facility window in the System Manager.
10	Check the transmitted power level on the corresponding far-end Muxponder. Check to see if the transmitted power level is within the operational threshold. Refer to Table 2-44 in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels of the line-side optics. ***Note 1:*** You can record the power level from the Equipment—Facility window in the System Manager. ***Note 2:*** Use a network topology diagram to determine the far-end Muxponder.

If the transmit power level is	**Then** go to
not within the operational threshold	the next step
within the operational threshold	step 13

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Step	Action

11

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the far-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains (and the new Muxponder is within operational specifications)	the circuit pack is not the entire problem. Go to the next step.

12

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the near-end Muxponder. Follow Procedure 3-68 "Reseating a circuit pack" in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Step	Action
13	Use the proper cleaning kit to clean all the connectors attached to the receiving (near-end) Muxponder line-side Rx port and to the corresponding line-side Tx port on the transmitting (far-end) Muxponder. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. Use a network topology diagram to determine the transmitting (far-end) Muxponder. ***Note 1:*** If you are using the OMX 4CH + Fiber Manager, clean both ends of the patch-cord between the OMX and the line-side Muxponder port. ***Note 2:*** Clean between the Muxponder, the SC-to-LC patch panel, and the OMX. — Clean each connector separately. — Record the operating power level after you clean each connector and compare it to the value you wrote down in step 9, this will allow you to see if there is any improvement to the Rx power.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

CAUTION
Risk of loss of traffic across multiple bands
Do not clean any optical fibers on the optical fiber plant, or on connections to the OMX. This affects traffic over multiple bands. Clean only the connections at the specified Muxponder circuit packs.

—continued—

Procedure 17-46 (continued)
MOTR—Wrapper Loss of Frame

Step	Action

14

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the near-end Muxponder. Follow Procedure 3-6 "Replacing a Muxponder circuit pack" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.

15 Repeat step 12 through step 14 for the far-end site.

16 Contact your next level of support.

ATTENTION
If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow Procedure 3-49 "Removing a manual, force, or lockout switch from a protection path" in *Provisioning and Operating Procedures*, 323-1701-310.

If you are using ALS and disabled it during this procedure, re-enable it for each site. Follow Procedure 1-43 "Enabling or disabling automatic laser shutdown" in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-47
MOTRSFP—Circuit Pack Failed - Pluggable

Probable cause

This alarm occurs when a provisioned SFP on a Muxponder circuit pack fails.

Impact

Table 17-14 lists the impact that the alarm has under different conditions.

Table 17-14
Circuit Pack Failed - Pluggable alarm impact

Alarm	Conditions	Severity	Impact
Circuit Pack Failed—Pluggable	The alarm will be critical for a Muxponder circuit pack with a port channel assignment.	Critical	Service-affecting
	The alarm will be major for a Muxponder circuit pack without a port channel assignment.	Major	Non-service-affecting

—continued—

Procedure 17-47 (continued)
MOTRSFP—Circuit Pack Failed - Pluggable

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Use System Manager to identify the circuit pack and port that are raising the alarm.
2	Replace the SFP. Follow Procedure 3-7 "Replacing a Small Form Factor Pluggable (SFP) module" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Contact your next level of support.

—end—

Procedure 17-48
MOTRSFP—Circuit Pack Mismatch - Pluggable

Probable cause

This alarm is raised when a different type of SFP is provisioned in a pre-provisioned SFP port on a Muxponder circuit pack.

Impact

Table 17-15 lists the impact that the alarm has under different conditions.

Table 17-15
Circuit Pack Failed - Pluggable alarm impact

Alarm	Conditions	Severity	Impact
Circuit Pack Mismatch—Pluggable	The alarm will be critical for a Muxponder circuit pack with a port channel assignment.	Critical	Service-affecting
	The alarm will be major for a Muxponder circuit pack without a port channel assignment.	Major	Non-service-affecting

—continued—

Procedure 17-48 (continued)
MOTRSFP—Circuit Pack Mismatch - Pluggable

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action
1	Use System Manager to identify the circuit pack and port that are raising the alarm.
2	Replace the SFP with a supported SFP. Follow Procedure 3-7 "Replacing a Small Form Factor Pluggable (SFP) module" in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Contact your next level of support.

—end—

Procedure 17-49
MOTRSFP—Circuit Pack Missing - Pluggable

Probable cause

This alarm is raised when an SFP port is provisioned, but an SFP is not physically installed in the Muxponder circuit pack.

Impact

Table 17-16 lists the impact that the alarm has under different conditions.

Table 17-16
Circuit Pack Missing - Pluggable alarm impact

Alarm	Conditions	Severity	Impact
Circuit Pack Missing—Pluggable	The alarm will be critical for a Muxponder circuit pack with a port channel assignment.	Critical	Service-affecting
	The alarm will be major for a Muxponder circuit pack without a port channel assignment.	Major	Non-service-affecting

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-49 (continued)
MOTRSFP—Circuit Pack Missing - Pluggable

Action

Step	Action	
1	Use System Manager to identify the circuit pack and port that are raising the alarm.	
2	**If**	**Then**
	the port is empty but should contain an SFP	insert and seat the correct SFP in the port. Follow Procedure 7-1 “Inserting circuit packs” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201, and Procedure 2-1 “Powering up an Optical Metro 5200 shelf” in *Commissioning Procedures*, 323-1701-220. Go to the next step.
	the port is intentionally left empty	go to step 4
	the port contains an SFP	go to step 6

—continued—

Procedure 17-49 (continued)
MOTRSFP—Circuit Pack Missing - Pluggable

Step	Action

3

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to step 6

4 To clear the alarm if the port is not used, follow these steps:

a. Take the SFP OOS. Follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” (if applicable), and then Procedure 3-8 “Taking a circuit pack or SFP out-of-service” in *Provisioning and Operating Procedures*, 323-1701-310.

b. If there are facilities associated with the SFP, delete them. Follow Procedure 3-14 “Deleting a circuit pack or SFP facility” in *Provisioning and Operating Procedures*, 323-1701-310.

Note: If this SFP is a part of a connection, you will have to delete the connection first. Follow Procedure 3-4 “Deleting channel assignments”.

c. Delete the SFP equipment. Follow Procedure 3-9 “Deleting a circuit pack or SFP from the inventory” in *Provisioning and Operating Procedures*, 323-1701-310.

5

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

6 Replace the SFP. Follow Procedure 3-7 “Replacing a Small Form Factor Pluggable (SFP) module” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Contact your next level of support.

—end—

Procedure 17-50
MOTRSFP—Client Service Mismatch

Probable cause

This alarm becomes active against the client-side Tx facility when there is a mismatch in the protocol provisioning between the local client port and the remote client port or when the preambleCtrl field is provisioned differently between the far-end and the near-end MOTR.

The alarm point is identified at the generic framing procedure (GFP) level, and it indicates when the local client port is expecting GE or FC-100/FICON traffic, and that the remote client port is not provisioned with the same traffic or protocol.

In the interoperable model, this alarm can also be raised if traffic in a SONET/SDH network is misconnected. For example, this alarm is raised if GFP traffic from another vendor's equipment is assigned to the Optical Metro 5100/5200 traffic.

Impact

Critical, service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-50 (continued)
MOTRSFP—Client Service Mismatch

Action

Step	Action
1	Make sure that the preambleCtrl field is enable or disable on both the near end or far end Muxponder.

If the preambleCtrl	**Then**
is the same	go to step 3
otherwise	Follow Procedure 3-10 “Putting a circuit pack or SFP facility in-service” in *Provisioning and Operating Procedures*, 323-1701-310. go to the next step

2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

3	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the client port at the near-end shelf and note the protocol specified in the Bit Rate field.
4	Perform the same query for the client port at the far-end shelf and make sure the protocol specified is the same as the one noted in step 3.

5	**If** the specified protocol	**Then**
	is different	follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310, and modify the Bit rate field so that the specified protocols are the same. Go to the next step.
	is the same	go to the next step

6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

7	**If** the channel assignment is	**Then**
	Gigabit Ethernet	contact your next level of support
	FC-100 or FICON	go to the next step

—continued—

Procedure 17-50 (continued)
MOTRSFP—Client Service Mismatch

Step	Action	
8	**If** the topology is	**Then**
	bookended	contact your next level of support
	interoperable	go to the next step
9	Check that there are no incorrect connections with the cross-connects that have been put in place in the SONET/SDH network.	
10	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-51
MOTRSFP—Facility Loopback

Probable cause

This alarm becomes active on the client side when a loopback is enabled by a user.

A Facility Loopback alarm on the client side means the optical signal received at the SFP client Rx input is being looped back to the client Tx output without continuing through the circuit pack.

This is a normal indication when the loopback is on for testing or maintenance purposes. Loopback is only allowed when the facility is out-of-service.

Impact

Minor, non-service-affecting.

Action

Step	Action	
1	Determine if a facility loopback is active for testing or maintenance purposes.	
2	**If** the loopback is	**Then**
	necessary for testing or maintenance activities	you have completed this procedure
	not necessary	go to the next step
3	Release the loopback if it is not necessary. Refer to Procedure 3-60 "Removing a loopback using the System Manager" in *Provisioning and Operating Procedures*, 323-1701-310.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-52
MOTRSFP—Far End Client Rx Signal Fail

Probable cause

This alarm becomes active on the near-end client side because of a problem at the far-end, such as loss of signal, loss of synchronization, or SFP-related problems (SFP missing, SFP fail).

Impact

Warning, non-service-affecting.

Action

Step	Action	
1	In System Manager, open the Fault–Active Alarms window and examine the alarms that are raised at the far-end Muxponder.	
2	Follow the appropriate procedures in *Trouble Clearing and Alarm Reference Guide,* 323-1701-542, to clear the alarms.	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-53
MOTRSFP—GFP Remote Defect Indication

Probable cause

This alarm occurs on the client side when the GFP on the line side is reporting a far-end GFP problem.

Impact

Warning, non-service-affecting.

Action

Step	Action	
1	In System Manager, open the Fault–Active Alarms window and examine the GFP alarms that are raised at the far-end Muxponder.	
2	Follow the appropriate procedures in *Trouble Clearing and Alarm Reference Guide,* 323-1701-542, to clear the alarms.	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-54
MOTRSFP—Incompatible Provisioning- Pluggable

Probable cause

This alarm becomes active on the SFP port when a protocol is provisioned for the port but the SFP inserted does not support this protocol but is of the correct wavelength. For example: The Fiber Channel protocol is provisioned on a port but a GE SFP is inserted in this port.

Impact

Critical, service-affecting

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-54 (continued)
MOTRSFP—Incompatible Provisioning- Pluggable

Action

Step	Action	
1	Use System Manager to identify the circuit pack and port that are raising the alarm.	
2	Check if the SFP can carry the same protocol as the one provisioned on the port	
	If the SFP	**Then**
	can carry the same protocol as the one provisioned on the port	Call your next level of support
	can not carry the same protocol as the one provisioned on the port	replace it with a compatible SFP. Follow Procedure 3-7 “Replacing a Small Form Factor Pluggable (SFP) module” in *Maintenance and Replacement Procedures,* 323-1701-546. Go to the next step
3	**If**	**Then**
	the alarm clears	You have completed this procedure.
	the alarm remains	Contact your next level of support.

—end—

Procedure 17-55
MOTRSFP—Insufficient Link Capacity

Probable cause

This alarm becomes active on the Muxponder 10 Gbit/s GE/FC V-CAT SFP client Rx facility when the configured bandwidth is insufficient for bit-rate selected. If the protocol is Gigabit Ethernet, this alarm is not raised since subrate is permitted. If the protocol is FC-100/FICON, six STS-3c/VC-4 are required. If the protocol is FC-200/FICON Express, twelve STS-3c/VC-4 are required.

The alarm can also be raised after traffic has been established and an STS-3c/VC-4 connection is accidentally removed by a TL1 command or through System Manager.

Impact

Critical, service-affecting.

Action

Step	Action	
1	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the Muxponder 10 Gbit/s GE/FC V-CAT and and verify that the Bit rate and Transport structure are consistent at the near-end and the far-end. ***Note:*** The Transport field indicates the number of paths (STS-3c/VC-4) that have been provisioned.	
2	**If**	**Then**
	the channel assignments need to be modified	follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310, and select the correct number of paths in the Transport field. Go to the next step.
	if the channel assignments do not need to be modified	contact your next level of support
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-56
MOTRSFP—Inter-card Communication Failure - Pluggable

Probable cause

This alarm becomes active on the client side when the SP circuit pack cannot communicate with the specified SFP module.

Note: If the Intercard Failed alarm is raised against SFP equipment, and you replace the SFPs on the circuit pack, the SFP inventory displayed in the Equipment & Facility Provisioning window is not updated. To correctly display the SFP inventory, clear the alarm first, then replace the SFPs.

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-56 (continued)
MOTRSFP—Inter-card Communication Failure - Pluggable

Action

Step	Action
1	Using the Fault—Active Alarms window in System Manger, check to see if the Inter-card Communication Failure alarm is raised by more than one SFP in the shelf.

If	Then go to
the alarm is raised by only this SFP	the next step
the alarm is raised on multiple SFPs on the same circuit pack	step 4
the alarm is raised on multiple SFPs on multiple Muxponders on the same plane	step 4

2	If	Then
	the path is protected and the alarm is against the Working Muxponder	go to the next step
	the path is protected and the alarm is against the Protection Muxponder	switch traffic off of the Protection Muxponder. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	the path is unprotected	go to the next step. Performing the next step may affect traffic.

3	Replace the SFP. Refer to Procedure 3-7 “Replacing a Small Form Factor Pluggable (SFP) module” in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Go to step 4.

—continued—

Procedure 17-56 (continued)
MOTRSFP—Inter-card Communication Failure - Pluggable

Step	Action
4	Reseat the SP. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

Step	Action
5	Replace the SP. Refer to Procedure 3-13 “Replacing an SP circuit pack” in *Maintenance and Replacement Procedures* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Contact your next level of support.

ATTENTION
If you set a forced switch on the path, make sure you remove the switch when the procedure is completed. Follow Procedure 3-49 “Removing a manual, force, or lockout switch from a protection path” in *Provisioning and Operating Procedures*, 323-1701-310.

—end—

Procedure 17-57
MOTRSFP—LAN Link Down

Probable cause

This alarm becomes active against the client-side Rx facility when one of the following conditions exists:

- the channel assignment is Gigabit Ethernet using GFP-F and auto-negotiation is enabled on the Muxponder 10 Gbit/s GE/FC V-CAT and disabled on the subtending equipment

  Note: On some models of client subtending equipment, the LAN Link Down alarm is not raised when auto-negotiation is enabled on the Muxponder 10Gbit/s GE/FC V-CAT and disabled on the subtending equipment.

- one fiber between the Muxponder 10 Gbit/s GbE/FC V-CAT SFP Tx and the subtending equipment is broken
- the channel assignment is Gigabit Ethernet and auto-negotiation has completed, but no resolution is possible. For example, the client advertises half-duplex.
- the Muxponder 10 Gbit/s GbE/FC V-CAT SFP is defective
- the subtending equipment is defective
- this alarm may be raised for information purposes, indicating a fault between the MOTR SFP and the subtending equipment.

Impact

Critical, Non service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-57 (continued)
MOTRSFP—LAN Link Down

Action

Step	Action
1	Verify that the auto-negotiation attributes between the subtending equipment and the Muxponder 10Gbit/s GE/FC V-CAT are consistent.

If	Then
the auto-negotiation attributes are consistent	go to step 3
the auto-negotiation attributes are inconsistent	modify the auto-negotiation attributes at the subtending equipment. Go to the next step.

Step	If	Then
2	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

3 Make sure the optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the Muxponder 10Gbit/s GE/FC V-CAT and the subtending equipment.

4 Use an optical power meter to measure the transmit power level at the Tx port of the affected SFP. Check if the Tx power level is within the operational threshold. Write down the value. Refer to Table 2-2 (to be updated) in *Technical Specifications*, 323-1701-180 for the correct values.

CAUTION
Risk of recovery procedures affecting traffic
Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another 10 Gbit/s GE/FC V-CAT, fiber, or system).

5 Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.

—continued—

Procedure 17-57 (continued)
MOTRSFP—LAN Link Down

Step	Action	
6	**If**	**Then**
	there is a VOA attached to the fiber between the Muxponder 10Gbit/s GE/FC V-CAT SFP and the subtending equipment	re-adjust, check for proper functionality, and, if necessary, replace the VOA. ***Note:*** Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another Muxponder 10Gbit/s GE/FC V-CAT, fiber, or system). Go to the next step.
	there is no VOA attached to the fiber between the OCI and the subtending equipment	go to step 9
7	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
8	Use the proper cleaning kit to clean all the connectors between the subtending equipment and the SFP Tx port. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. — Clean each connector separately. — Record the operating power level after you clean each connector and compare it to the value you wrote down in step 4, this will allow you to see if there is any improvement to the Tx power.	
9		
	If	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	call your next level of support

—end—

Procedure 17-58
MOTRSFP—Loss of Alignment

Probable cause

This alarm becomes active against the client-side Rx facility when in interoperable configurations, the SONET/SDH system has a v-cat differential delay between v-cat groups that is greater than or equal to 14 ms.

Impact

Critical, service-affecting.

Action

Step	Action
1	Traffic patterns of the v-cat groups in the SONET/SDH system must be changed so that the differential delay between v-cat groups is less than 14 ms. Follow the appropriate trouble clearing procedure for the SONET/SDH equipment.
2	

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

Step	Action
3	Make sure that there are no incorrect connections with the cross-connects that have been put in place in the SONET/SDH network.
4	

If	Then
the alarm clears	you have completed this procedure
the alarm remains	contact your next level of support

—end—

Procedure 17-59
MOTRSFP—Loss of Frame Delineation

Probable cause

This alarm becomes active when the generic framing procedure (GFP) layer cannot detect valid GFP frames.

Impact

Critical, service-affecting.

Action

Step	Action	
1	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the line port and make sure that the path assignment is similar on the near end and far end.	
2	**If** the path assignment	**Then**
	tis different	follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	the same	go to step 4
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
4	Make sure that the circuit pack at the far-end is a Muxponder circuit pack.	
5	**If**	**Then**
	the circuit pack is a Muxponder	contact your next level of support
	the circuit pack is not a Muxponder	replace the circuit pack with a Muxponder circuit pack. Go to the next step.
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-60
MOTRSFP—Loss of Signal

Probable cause

This alarm becomes active on the client side when the SFP is not detecting an input signal. One of the following conditions exists:

- an optical fiber is cut
- the optical fiber is the wrong type
- an optical fiber is bent or coiled too tightly
- the received optical power is lower than the Rx Fail Threshold of the Rx Power Low parameter
- no optical signal is present at the circuit pack
- the connector is dirty at the receiving SFP or on the transmitting circuit pack
- an optical patch cord is damaged
- the receiving Muxponder is defective
- the transmitting subtending equipment is defective
- the subtending equipment is not connected
- the connected subtending equipment is not transmitting
- if there is a miniature VOA on the fiber to attenuate the signal, it may not be operating correctly
- an SFP failure

Impact

Table 17-17 lists the impact that the alarm has under different conditions.

—continued—

Procedure 17-60 (continued)
MOTRSFP—Loss of Signal

Table 17-17
Loss of Signal alarm impact

Alarm	Conditions	Severity	Impact
Loss of Signal	The alarm will be critical for a Muxponder circuit pack with a port channel assignment.	Critical	Service-affecting
	The alarm will be major for a Muxponder circuit pack without a port channel assignment.	Major	Non-service-affecting

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-60 (continued)
MOTRSFP—Loss of Signal

ATTENTION

If a fiber break occurs and is being repaired when automatic laser shutdown (ALS) or automatic laser recovery (ALR) is active on a fiber, there are impacts on the behavior of the alarms in the system. If you use light to test the broken fiber (with a light source or an optical time domain reflectometer (OTDR)), you clear the ALS alarms. This is because the shelf detects light and clears the Loss of Signal (LOS) condition. As a result, the shelf and the remote shelf power up the laser (depending on whether both Tx and Rx fibers are cut or only one of them is cut). If a Remote Automatic Laser Shutdown alarm is raised on the shelf when the light is removed, the alarm is replaced by an LOS alarm.

If all the channels impacted by the fiber break detect light when the laser is powered up, the Automatic Laser Shutdown alarm is cleared This is an expected behavior because a shelf cannot distinguish between a light source from an optical test set or a light source from a remote shelf.

Action

Step	Action
1	Make sure the client-side optical fiber is correctly connected at both ends and that there is no problem with the optical fiber plant between the Muxponder client port and the subtending equipment.

CAUTION
Risk of recovery procedures affecting traffic
Disconnecting the fiber will drop traffic. If necessary, route traffic to an alternate path (on another Muxponder circuit pack, fiber, or system).

2	Use an optical power meter to measure the optical power at the client-side Rx port of the affected circuit pack. Check if the Rx power level is within the operational threshold. Write down the value. Refer to Table 2-43 for client-side specifications in *Technical Specifications*, 323-1701-180.	
3	Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

—continued—

Procedure 17-60 (continued)
MOTRSFP—Loss of Signal

Step	Action	
5	**If**	**Then**
	there is a VOA attached to the fiber between the circuit pack and the subtending equipment	re-adjust, check for proper functionality, and, if necessary, replace the VOA. ***Note:*** Adjusting the VOA may drop traffic. If necessary route traffic to an alternate path (on another circuit pack, fiber, or system). Go to the next step.
	there is no VOA attached to the fiber between the circuit pack and the subtending equipment	go to step 7

6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

7 Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the Rx port. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201.

— Clean each connector separately.

— Record the operating power level after you clean each connector and compare it to the value you wrote down in step 2, this will allow you to see if there is any improvement to the Rx power.

If	**Then**
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

8 Replace the SFP. Follow Procedure 3-7 "Replacing a Small Form Factor Pluggable (SFP) module" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	**Then**
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Contact your next level of support.

—continued—

Procedure 17-60 (continued)
MOTRSFP—Loss of Signal

Step	Action

9

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder. Follow Procedure 3-7 “Putting a circuit pack or SFP in-service” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

10

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	the circuit pack is not the problem. Reseat the original circuit pack. Go to the next step.

—end—

Procedure 17-61
MOTRSFP—Loss of Synchronization

Probable cause

This alarm becomes active on the client port when one of the following conditions exists:

- there is an inconsistent bit rate provisioning between the client port and the subtending equipment
- the signal is corrupted between the subtending equipment and the MOTR
- the optical fiber is the wrong type

Impact

Critical, service-affecting.

Precautions

CAUTION

Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must have a network topology diagram and a list of the channel assignments provisioned in your network.

—continued—

Procedure 17-61 (continued)
MOTRSFP—Loss of Synchronization

Action

Step	Action	
1	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the client port and make sure that the bit rate matches the bit rate of the subtending equipment.	
2	**If**	**Then**
	the bit rate needs to be modified	follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	the bit rates match	go to step 4
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
4	Using the System Manager, or a power meter, record the Rx power on the client-side Rx port. Check that the power level received is within the operational threshold. Refer to Table 2-43 for client-side specifications in *Technical Specifications*, 323-1701-180 for minimum and maximum Rx/Tx power levels. Write down the Rx power. ***Note:*** You can record the power level from the Equipment—Facility window in the System Manager.	
5	Make sure the transmitting subtending equipment is functioning correctly and transmitting a valid signal.	

—continued—

Procedure 17-61 (continued)
MOTRSFP—Loss of Synchronization

Step	Action
6	Use the an optical power meter to measure the transmit power on the subtending equipment. Make sure it is working correctly and that the power of the transmitted signal is at the correct power level according to the manufacturer's specifications.

If	Then
the subtending equipment Tx laser is out of specification	repair or replace the subtending equipment. Go to the next step.
the subtending equipment Tx laser is within specification	go to step 8

Step	If	Then
7	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

Step	If	Then
8	there is a VOA attached to a the fiber between the client port and the subtending equipment	re-adjust, check for proper functionality, and, if necessary, replace the VOA. Go to the next step.
	there is no VOA attached to a fiber between the client port and the subtending equipment	go to step 10

Step	If	Then
9	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

—continued—

Procedure 17-61 (continued)
MOTRSFP—Loss of Synchronization

Step	Action
10	Use the proper cleaning kit to clean all the connectors between the subtending equipment Tx port and the SFP Rx port, and visa-versa. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. — Clean each connector separately. — Record the operating power level after you clean each connector and compare it to the value you wrote down in step 5, this will allow you to see if there is any improvement to the Rx power.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

Step	Action
11	Replace the SFP. Follow Procedure 3-7 "Replacing a Small Form Factor Pluggable (SFP) module" in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Contact your next level of support.

—end—

Procedure 17-62
MOTRSFP—Summary Alarm Indication Signal

Probable cause

This alarm becomes active on the SFP client-side when one of the following conditions exists:

- the far-end SFP client port is out-of-service
- the subtending equipment sends the SONET/SDH Alarm Indication Signal

This alarm indicates that there is an identified problem at the subtending equipment or facility.

Impact

Warning, non-service-affecting.

Action

Step	Action
1	Before you start the troubleshooting steps, note the following: To help troubleshoot summary path alarms, the System Manager Alarm Details screen includes a Path field that displays the affected client-side paths and is only applicable to summary path alarms raised by the Muxponder circuit pack. However, when a user double-clicks on the summary alarm in the Active Alarms list, the software polls the circuit pack to determine the existing faulty paths and this information is displayed in the Path field of the Alarm Details window. Next to the path field is the Mappings button. When pressed, this button brings up the Client to Line Side Path Mappings screen so that client-side paths can be correlated to line-side paths.Also, the Show Circuit Pack Event button in the Event Details screen lets the user tunnel deeper into the circuit pack to trace outstanding events against the circuit pack that contributed to the existing or historical event. The events are stored and retrieved from the circuit pack.
2	Check the entry in the Port column on the Fault–Active Alarms window to determine where the alarm is raised.
3	Make sure that the subtending equipment is functioning properly and transmitting a valid signal.

—continued—

Procedure 17-62 (continued)
MOTRSFP—Summary Alarm Indication Signal

Step	Action
4	Make sure that **a.** both the line facility and client facility on the far-end Muxponder are in-service. Refer to Procedure 3-10 “Putting a circuit pack or SFP facility in-service” in *Provisioning and Operating Procedures*, 323-1701-310. Use a network topology diagram to determine the far-end site. **b.** there is channel assignment on the far-end Muxponder. Follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310. **c.** there is no Loss of Signal, Loss of Frame, or Loss of Lock alarm on the client facility on the far-end Muxponder. Follow Procedure 17-20 “MOTR—Loss of Frame”, Procedure 17-21 “MOTR—Loss of Lock”, and Procedure 17-22 “MOTR—Loss of Signal”.

5	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-63
MOTRSFP—Summary Loss of Multiframe

Probable cause

This alarm becomes active against the client-side SFP port on the Muxponder 10Gbit/s GE/FC V-CAT when the multi-frame indicator received at the path of one or more ports is out of sequence.

Impact

Critical, service-affecting.

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

Action

Step	Action
1	Before you start the troubleshooting steps, note the following: To help troubleshoot summary path alarms, the System Manager Alarm Details screen includes a Path field that displays the affected client-side paths and is only applicable to summary path alarms raised by the Muxponder circuit pack. However, when a user double-clicks on the summary alarm in the Active Alarms list, the software polls the circuit pack to determine the existing faulty paths and this information is displayed in the Path field of the Alarm Details window. Next to the path field is the Mappings button. When pressed, this button brings up the Client to Line Side Path Mappings screen so that client-side paths can be correlated to line-side paths.Also, the Show Circuit Pack Event button in the Event Details screen lets the user tunnel deeper into the circuit pack to trace outstanding events against the circuit pack that contributed to the existing or historical event. The events are stored and retrieved from the circuit pack.
2	**If** the topology is — **Then** go to bookended — step 3 interoperable — step 6
3	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the Muxponder 10 Gbit/s GE/FC V-CAT at the near-end shelf and note the transport type in the Transport field.

—continued—

Procedure 17-63 (continued)
MOTRSFP—Summary Loss of Multiframe

Step	Action
4	Perform the same query for the Muxponder 10 Gbit/s GE/FC V-CAT at the far-end shelf and make sure the transport type specified is the same as the one noted in step 3.
5	**If** the specified transport mode **Then**
	is different — follow Procedure 3-3 "Making or modifying channel assignments" in *Provisioning and Operating Procedures*, 323-1701-310, and modify the transport type field so that the specified transport types are the same. Go to the next step.
	is the same — contact your next level of support
6	Check that there are no incorrect connections with the cross-connects that have been put in place in the SONET/SDH network.
	If — **Then**
	the alarm clears — you have completed this procedure
	the alarm remains — contact your next level of support

—end—

Procedure 17-64
MOTRSFP—Summary Loss of Pointer

Probable cause

This alarm becomes active against the client-side SFP port when one or more of the port's corresponding paths are affected by a path Loss of Pointer. One of the following conditions exists:

- the near-end and far-end network elements are provisioned differently. For example, the local NE is provisioned as two STS-24c, but the remote NE is sending an STS-48c.
- the pointer value in the SONET overhead is out of a valid range
- the pointer value in the SONET overhead is not stable because of network synchronization

Impact

Critical, service-affecting.

Action

Step	Action
1	Before you start the troubleshooting steps, note the following: To help troubleshoot summary path alarms, the System Manager Alarm Details screen includes a Path field that displays the affected client-side paths and is only applicable to summary path alarms raised by the Muxponder circuit pack. However, when a user double-clicks on the summary alarm in the Active Alarms list, the software polls the circuit pack to determine the existing faulty paths and this information is displayed in the Path field of the Alarm Details window. Next to the path field is the Mappings button. When pressed, this button brings up the Client to Line Side Path Mappings screen so that client-side paths can be correlated to line-side paths.Also, the Show Circuit Pack Event button in the Event Details screen lets the user tunnel deeper into the circuit pack to trace outstanding events against the circuit pack that contributed to the existing or historical event. The events are stored and retrieved from the circuit pack.
2	**If** the topology is — **Then** go to bookended — step 3 interoperable — step 7
3	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the SFP at the near-end shelf and note the transport structure specified in the Transport field.

—continued—

Procedure 17-64 (continued)
MOTRSFP—Summary Loss of Pointer

Step	Action	
4	Perform the same query for the SFP at the far-end shelf and make sure the transport structure specified in the Transport field is the same as the one noted in step 3.	
5	**If**	**Then**
	the specified transport structure is different	follow Procedure 3-3 "Making or modifying channel assignments" in *Provisioning and Operating Procedures*, 323-1701-310, and modify the Transport field so that the specified transport structures are the same. Go to the next step.
	otherwise	contact your next level of support
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
7	Make sure that the payload configuration is consistent between the SFP and the first line terminating equipment (LTE) in the SONET/SDH network.	
8	**If**	**Then**
	the payload configurations are inconsistent	follow the SONET/SDH LTE equipment procedures to change the payload configuration. Go to the next step.
	otherwise	go to step 10
9	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
10	In the SONET/SDH network, make sure that there are no alarms related to synchronization.	
11	If the problem persists, contact your next level of support.	

—end—

Procedure 17-65
MOTRSFP—Summary Loss of Sequence

Probable cause

This alarm becomes active on the client-side of a Muxponder 10Gbit/s GE/FC V-CAT when in v-cat mode, when the sequence number received on one or more ports is different than the expected sequence number.

This alarm can be raised on the both the near end and the far end at the same time

Impact

Critical, Service Affecting

Action

Step	Action
1	Before you start the troubleshooting steps, note the following: To help troubleshoot summary path alarms, the System Manager Alarm Details screen includes a Path field that displays the affected client-side paths and is only applicable to summary path alarms raised by the Muxponder circuit pack. However, when a user double-clicks on the summary alarm in the Active Alarms list, the software polls the circuit pack to determine the existing faulty paths and this information is displayed in the Path field of the Alarm Details window. Next to the path field is the Mappings button. When pressed, this button brings up the Client to Line Side Path Mappings screen so that client-side paths can be correlated to line-side paths.Also, the Show Circuit Pack Event button in the Event Details screen lets the user tunnel deeper into the circuit pack to trace outstanding events against the circuit pack that contributed to the existing or historical event. The events are stored and retrieved from the circuit pack.
2	**If** the topology is — **Then** go to bookended — step 3 interoperable — step 6
3	In the Connection—Channel Assignments window in System Manager, query the channel assignment for the Muxponder 10 Gbit/s GE/FC V-CAT at the near-end shelf and note the transport type in the Transport field.
4	Perform the same query for the Muxponder 10 Gbit/s GE/FC V-CAT at the far-end shelf and make sure the transport type specified is the same as the one noted in step 3.

—continued—

Procedure 17-65 (continued)
MOTRSFP—Summary Loss of Sequence

Step	Action	
5	**If** the specified transport mode	**Then**
	is different	follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310, and modify the transport type field so that the specified transport types are the same. Go to the next step.
	is the same	contact your next level of support
6	Check that there are no incorrect connections with the cross-connects that have been put in place in the SONET/SDH network.	
	If	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-66
MOTRSFP—Summary Payload Label Mismatch

Probable cause

This alarm becomes active against the client-side SFP port when one or more of the port's corresponding paths are affected by a path Payload Label Mismatch. This alarm becomes active when the signal label of a received STS-nc/VC-n, does not match the expected signal label.

Impact

Critical, service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-66 (continued)
MOTRSFP—Summary Payload Label Mismatch

Action

Step	Action
1	Before you start the troubleshooting steps, note the following: To help troubleshoot summary path alarms, the System Manager Alarm Details screen includes a Path field that displays the affected client-side paths and is only applicable to summary path alarms raised by the Muxponder circuit pack. However, when a user double-clicks on the summary alarm in the Active Alarms list, the software polls the circuit pack to determine the existing faulty paths and this information is displayed in the Path field of the Alarm Details window. Next to the path field is the Mappings button. When pressed, this button brings up the Client to Line Side Path Mappings screen so that client-side paths can be correlated to line-side paths.Also, the Show Circuit Pack Event button in the Event Details screen lets the user tunnel deeper into the circuit pack to trace outstanding events against the circuit pack that contributed to the existing or historical event. The events are stored and retrieved from the circuit pack.
2	Trace the STS-nc/VC-n that is reporting the alarm in the SONET/SDH system.
3	In the SONET system, verify that all cross-connects are applied properly and make any necessary changes.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

Step	Action
4	Replace the SFP. Follow Procedure 3-7 “Replacing a Small Form Factor Pluggable (SFP) module” in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Contact your next level of support.

—end—

Procedure 17-67
MOTRSFP—Summary Remote Defect Indication

Probable cause

This alarm becomes active on the client-side SFP port when there is an error at the far-end shelf, such as a Path AIS, Path Unequipped or LOP is received or a failure has occurred.

Impact

Warning, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-67 (continued)
MOTRSFP—Summary Remote Defect Indication

Action

Step	Action
1	Before you start the troubleshooting steps, note the following: To help troubleshoot summary path alarms, the System Manager Alarm Details screen includes a Path field that displays the affected client-side paths and is only applicable to summary path alarms raised by the Muxponder circuit pack. However, when a user double-clicks on the summary alarm in the Active Alarms list, the software polls the circuit pack to determine the existing faulty paths and this information is displayed in the Path field of the Alarm Details window. Next to the path field is the Mappings button. When pressed, this button brings up the Client to Line Side Path Mappings screen so that client-side paths can be correlated to line-side paths.Also, the Show Circuit Pack Event button in the Event Details screen lets the user tunnel deeper into the circuit pack to trace outstanding events against the circuit pack that contributed to the existing or historical event. The events are stored and retrieved from the circuit pack.
2	In the Active Alarms window, determine if Alarm Indication Signal alarms are present on the far-end network elements. **If** this alarms is — **Then** go to present — step 3 not present — step 4
3	Clear the Alarm Indication Signal alarms. Follow Procedure 17-62 "MOTRSFP—Summary Alarm Indication Signal" in this chapter. **If** the Remote Defect Indication alarm — **Then** clears — you have completed this procedure remains — go to the next step
4	In the Active Alarms window, determine if Loss of Pointer alarms are present on the far-end network elements. **If** this alarms is — **Then** go to present — step 5 not present — step 6

—continued—

Procedure 17-67 (continued)
MOTRSFP—Summary Remote Defect Indication

Step	Action	
5	Clear the Loss of Pointer alarms. Follow Procedure 17-64 "MOTRSFP—Summary Loss of Pointer" in this chapter.	
	If the Remote Defect Indication alarm	**Then**
	clears	you have completed this procedure
	remains	go to the next step
6	**If** the topology used is	**Then**
	bookended	contact your next level of support
	interoperable	go to the next step
7	Make sure that all path circuits are correctly cross-connected.	
	If the alarm	**Then**
	clears	you have completed this procedure
	remains	contact your next level of support

—end—

Procedure 17-68
MOTRSFP—Summary Unequipped

Probable cause

This alarm becomes active against the path on the client side when there is an incomplete connection. For example, this alarm becomes active when there are no provisioned channel assignments at the remote site, or no provisioned cross-connects in the SONET/SDH network if the Muxponder circuit pack is part of an interoperable topology.

Impact

Critical, service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-68 (continued)
MOTRSFP—Summary Unequipped

Action

Step	Action
1	Before you start the troubleshooting steps, note the following: To help troubleshoot summary path alarms, the System Manager Alarm Details screen includes a Path field that displays the affected client-side paths and is only applicable to summary path alarms raised by the Muxponder circuit pack. However, when a user double-clicks on the summary alarm in the Active Alarms list, the software polls the circuit pack to determine the existing faulty paths and this information is displayed in the Path field of the Alarm Details window. Next to the path field is the Mappings button. When pressed, this button brings up the Client to Line Side Path Mappings screen so that client-side paths can be correlated to line-side paths.Also, the Show Circuit Pack Event button in the Event Details screen lets the user tunnel deeper into the circuit pack to trace outstanding events against the circuit pack that contributed to the existing or historical event. The events are stored and retrieved from the circuit pack.
2	Use the System Manager to verify that there is a channel assignment configured for the corresponding far-end SFP port. **If** — **Then** there is no channel assignment — follow Procedure 3-3 “Making or modifying channel assignments” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step. there is a channel assignment — go to step 4
3	**If** — **Then** the alarm clears — you completed this procedure the alarm remains — go the next step
4	Delete and then reprovision the channel assignments. Follow the procedures in the “Provisioning circuit packs and managing traffic” chapter in *Provisioning and Operating Procedures*, 323-1701-310. **If** — **Then** the alarm clears — you completed this procedure the alarm remains — go to the next step
5	**If** the topology is — **Then** go to bookended — step 9 interoperable — the next step

—continued—

Procedure 17-68 (continued)
MOTRSFP—Summary Unequipped

Step	Action
6	If the Muxponder circuit packs are part of a SONET/SDH interoperable topology, make sure that all the cross-connects are present in the SONET/SDH network. ***Note:*** The removal of cross-connects in the SONET/SDH network can send unequipped conditioning in to the Optical Metro 5100/5200 system.

7

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

8 Replace the SFP module. Follow Procedure 3-7 “Replacing a Small Form Factor Pluggable (SFP) module” in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed SFP is faulty. You have completed this procedure.
the alarm remains	the SFP is not the problem. Reseat the original SFP. Go to the next step.

9

CAUTION
Risk of recovery procedures affecting traffic
Reseating the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Reseat the Muxponder circuit pack. Follow Procedure 3-68 “Reseating a circuit pack” in *Provisioning and Operating Procedures,* 323-1701-310.

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

—continued—

Procedure 17-68 (continued)
MOTRSFP—Summary Unequipped

Step	Action

10

CAUTION
Risk of recovery procedures affecting traffic
Replacing the circuit pack drops traffic on all of the ports. If necessary, route traffic to an alternate path (on another Muxponder, fiber, or system).

Replace the Muxponder circuit pack. Follow Procedure 3-6 “Replacing a Muxponder circuit pack” in *Maintenance and Replacement Procedures,* 323-1701-546.

If	Then
the alarm clears	the removed circuit pack is faulty. You have completed this procedure.
the alarm remains	contact your next level of support

—end—

Procedure 17-69
MOTRSFP—Terminal Loopback

Probable cause

This alarm becomes active on the client side against the SFP when the client-side port has been placed in terminal loopback mode.

A Terminal Loopback alarm means the signal being received at the line receiver is being looped back at the client side and sent to the line transmitter.

> ***Note:*** This is a normal indication when the loopback is on for testing purposes. Loopback is only allowed when the facility is out-of-service.

Impact

Minor, non-service-affecting.

Action

Step	Action	
1	Determine if the terminal loopback is active for testing or maintenance purposes.	
2	**If**	**Then**
	the loopback is necessary for testing or maintenance activities	you have completed this procedure
	otherwise	go to the next step
3	Release the loopback if it is not necessary. Refer to Procedure 3-60 "Removing a loopback using the System Manager" in *Provisioning and Operating Procedures*, 323-1701-310.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 17-70
MOTRSFP—Unknown Circuit Pack - Pluggable

Probable cause

This alarm becomes active on the SFP port when

- the SP circuit pack fails to retrieve the manufacturing data on the SFP (data may be missing or may be incorrect)
- the circuit pack type cannot be recognized by the software (the Release version of the circuit pack is not supported by the Release version of the shelf)

If the slot is provisioned for an SFP, the System Manager displays MOTRSFP in the Card column of the Fault–Active Alarms window.

Impact

Major, non-service-affecting

Precautions

CAUTION
Risk of recovery procedures affecting traffic
This alarm may not be service-affecting, however the recovery action can be service-affecting.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Make sure that all fiber adaptor housings are cleaned before you make the connections described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 17-70 (continued)
MOTRSFP—Unknown Circuit Pack - Pluggable

Action

Step	Action
1	Use System Manager to identify the circuit pack and port that are raising the alarm.
2	Read the latest Baseline Report to see if the SFP is compatible with the Release version of the shelf. ***Note:*** Baseline Reports are available through Nortel Networks. Refer to the "Technical assistance service telephone numbers" section in "About this document" at the beginning of this book.
3	**If** the circuit pack / **Then** is compatible — go to the next step. is incompatible — replace it with a compatible SFP. Follow Procedure 3-7 "Replacing a Small Form Factor Pluggable (SFP) module" in *Maintenance and Replacement Procedures,* 323-1701-546. If the alarm clears, you have completed this procedure. If the alarm remains, go to the next step.
4	Replace the SFP. Refer to Procedure 3-7 "Replacing a Small Form Factor Pluggable (SFP) module" in *Maintenance and Replacement Procedures* 323-1701-546. **If** / **Then** the alarm clears — the removed SFP is faulty. You have completed this procedure. the alarm remains — the SFP is not the problem. Reseat the original SFP. Contact your next level of support.

—end—

Clearing C&L splitter/coupler alarms

Use the procedures in this chapter to clear C&L splitter/coupler alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of C&L splitter/couplers, see the "C&L splitter/coupler" chapter in *Hardware Description*, 323-170-102.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 18-1 lists the procedure in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 18-1
Procedures for clearing C&L splitter/coupler alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
18-1 C&L splitter/coupler—Optical Signal Failure (Rx) or (Tx)	18-3	Not applicable

Procedure 18-1
C&L splitter/coupler—Optical Signal Failure (Rx) or (Tx)

An Optical Signal Failure alarm is raised against the equipment at both ends of the suspect fiber span. The beginning of the suspect span is identified by an Optical Signal Failure Tx alarm, while the end of the suspect span is identified by a corresponding Optical Signal Failure Rx alarm.

Depending on the network and site topology, several Optical Signal Failure alarms are possible. The intrasite fault sectionalization (IFS) feature raises Optical Signal Failure alarms at all the sites where a broken fiber would cause the observed service failures.

Probable cause

This alarm becomes active when the IFS feature identifies a failed WDM fiber at a C&L splitter/coupler. This alarm indicates that there is a failed fiber between this C&L splitter/coupler and a connected component to the east or west. This alarm is raised against the OTS, C-band, or L-Band (Rx or Tx) port of the east or west C&L splitter/coupler.

> ***Note:*** Refer to "Fault sectionalization" in *Software and User Interface*, 323-1701-101, for detailed information about intrasite fault sectionalization.

Impact

Critical, service-affecting.

Requirements

If an Intrasite Communication Failure alarm is active anywhere in the ring, clear this alarm before performing this procedure. Follow Procedure 15-10 "OSC—Intrasite Communication Failure" or Procedure 13-21 "SP—Intrasite Communication Failure".

After clearing the Intrasite Communication Failure alarm, the IFS alarms may change. Follow the appropriate procedure for the identified optical signal failures.

Perform the following steps at each site where an Optical Signal Failure alarm is raised until all Optical Signal Failure alarms are cleared.

—continued—

Procedure 18-1 (continued)
C&L splitter/coupler—Optical Signal Failure (Rx) or (Tx)

You must be logged into the System Manager to perform this procedure. To log into the network, follow Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

You must have a network topology diagram and a list of the channel assignments provisioned in your network.

Precautions

CAUTION
Risk of service interruption in an unprotected network
The recovery action detailed in this procedure can affect service if the network is unprotected. To verify if you can add path protection to you network, refer to Chapter 3, "Supported configurations" in *Network Planning and Link Engineering*, 323-1701-110. To add path protection to an unprotected network, see Procedure 3-47, "Adding path protection to an unprotected path" in *Provisioning and Operating Procedures*, 323-1701-310.

—continued—

Procedure 18-1 (continued)
C&L splitter/coupler—Optical Signal Failure (Rx) or (Tx)

CAUTION
Risk of laser radiation
The Optical Metro 5100/5200 operates up to a Hazard Level of k x 3A (IEC 60825-2:2000) or 1M (IEC 60825-2:2004). Use only viewing instruments with proper optical attenuation.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

CAUTION
Possible risk of damage to equipment and fiber
Make sure that the bulkhead connectors are lowered and snapped into place before closing the drawer. Failure to do so could cause damage to the connector unit, the fibers attached to the connector unit, or both.

Observe the minimum bend radius of 1.18-inches (30-mm) for the patch cords. Always use the fiber management components in the drawer to route the fiber.

Allow for sufficient slack in the fibers entering and exiting the drawer. If sufficient slack is not left, the fibers can become stretched and damaged when the drawer is opened.

—continued—

Procedure 18-1 (continued)
C&L splitter/coupler—Optical Signal Failure (Rx) or (Tx)

Action

Step	Action
1	In the Active Alarms window, determine if the OSC—Intrasite Communication Failure alarm is present on the network.

If this alarms is	**Then** go to
present on the network	step 2
not present on the network	step 4

Step	Action
2	Clear the OSC—Intrasite Communication Failure alarm. Follow "OSC—Intrasite Communication Failure" on page 15-25. ***Note:*** It takes a minimum of 10 seconds for the alarms to clear.

If the Intrasite Communication Failure alarm	**Then**
clears	you have completed this procedure
remains	go to the next step

Step	Action
3	Clearing the Intrasite Communication Failure alarm can change the Optical Signal Failure alarms.

If clearing the Intrasite Communication alarm	**Then**
cleared all the optical signal failure alarms in the system	you have completed this procedure
otherwise	go to the next step

Step	Action
4	Make sure that both ends of the optical fiber are physically connected to the equipment. Refer to the appropriate procedures in Chapter 3, "Connecting components" in *Connection Procedures*, 323-1701-221.
5	Disconnect the fiber at the Tx equipment and use an optical power meter and a patch cord to measure the optical power coming from the equipment. Refer to tables in *Technical Specifications,* 323-1701-180, for the operational power levels that are acceptable for the type of equipment being measured.

Step	**If** the optical power	**Then** go to
6	is above the operational threshold	the next step
	is below the operational threshold	step 9

—continued—

Procedure 18-1 (continued)
C&L splitter/coupler—Optical Signal Failure (Rx) or (Tx)

Step	Action
7	Disconnect the fiber at the Rx equipment and use an optical power meter to measure the optical power coming from the Tx equipment. Refer to tables in *Technical Specifications,* 323-1701-180, for the operational power levels that are acceptable for the type of equipment being measured.
8	**If** the optical power — **Then** go to is above the operational threshold — step 12 is below the operational threshold — step 15
9	Use the proper cleaning kit to clean the connectors. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. — Clean each connector. — Record the operating power level after you clean each connector and compare it to the value you wrote down, this will allow you to see if there is any improvement to the power levels.
10	Reconnect the fiber that was disconnected in step 5. Go to the next step.
11	**If** — **Then** the alarm clears — you have completed the procedure the alarm remains — go to step 20
12	Use the proper cleaning kit to clean the connectors. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. — Clean each connector. — Record the operating power level after you clean each connector and compare it to the value you wrote down, this will allow you to see if there is any improvement to the power levels.
13	Reconnect the fiber that was disconnected in step 7. Go to the next step.
14	**If** — **Then** the alarm clears — you have completed the procedure the alarm remains — go to step 18
15	Replace the fiber. Clean the new fiber and the optical connectors on the equipment. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201. ***Note:*** It will take at least 10 seconds for the alarms to clear after the problem is resolved.

—continued—

Procedure 18-1 (continued)
C&L splitter/coupler—Optical Signal Failure (Rx) or (Tx)

Step	Action	
16	**If**	**Then**
	the alarm clears	you have completed the procedure
	the alarm remains	clean all the optical connectors for the Tx and Rx equipment again. Go to the next step. For information on cleaning, see "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components,* 323-1701-201.
17	**If**	**Then**
	the alarm clears	you have completed the procedure
	the alarm remains	go to the next step
18	Check for an optical signal failure at a downstream site. Go to the next step.	
19	**If** at a downstream site	**Then**
	there is an optical signal failure	repeat this procedure, beginning with step 4, at that site
	otherwise	go to step 20
20	Check for an optical signal failure at an upstream site. Go to the next step.	
21	**If** at an upstream site	**Then**
	there is an optical signal failure	repeat this procedure, beginning with step 4, at that site
	otherwise	contact your next level of support
		—end—

Clearing equipment inventory unit alarms

Use the procedures in this chapter to clear equipment inventory unit (EIU) alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of EIUs, see the "Equipment Inventory Unit" chapter in *Hardware Description*, 323-1701-102.

Table 19-1 lists the meaning of the indicator lamps on the EIU.

Table 19-1
EIU indicator lamps

Indicator lamp	Color	State	Meaning
Power A Power B	red/ green	red	The EIU has power.
		yellow	The EIU has power and is switched on.
		off	The EIU has no power.
Output ports	green/ yellow	green	The passive device is connected to the EIU and there are no alarms associated with the passive device.
		yellow	The Optical Tray missing alarm is raised or the passive device is unknown.
		off	There is no passive device connected to the port.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 19-2 lists the procedure in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 19-2
Procedures for clearing EIU alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
19-1 EIU—Equipment Inventory Unit Mismatch	19-4	Equipment
19-2 EIU—Equipment Inventory Unit Missing/Failed	19-6	Equipment
19-3 EIU—Unknown Circuit Pack	19-8	Equipment

Procedure 19-1
EIU—Equipment Inventory Unit Mismatch

Probable cause

The Equipment Inventory Unit Mismatch alarm becomes active when a component other than an equipment inventory unit (EIU) is connected to a port that is provisioned for an EIU.

Impact

Minor, non-service-affecting.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

Action

Step	Action
1	Make sure the component connected to the port on the maintenance panel is an EIU.

If	**Then** go to
the connected component is an EIU and is suppose to be an EIU	step 4
the connected component is not an EIU and is suppose to be an EIU	the next step

2	Remove the component connected to the port that is provisioned for an EIU.
3	Wait one minute and connect the EIU to the port on the maintenance panel.

If	**Then**
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

—continued—

Procedure 19-1 (continued)
EIU—Equipment Inventory Unit Mismatch

Step	Action
4	Put the EIU out of service. In the System Manager Equipment-Inventory screen, right-click on the EIU and choose the “Modify” option from the pop-up menu.
5	In the State area of the Optical Metro Inventory dialog box, select OOS from the Administrative drop-down list.
6	Click **OK** to close the dialog box. *The Confirm Inventory OOS dialog box appears.*
7	Click **Yes** to confirm the change.
8	In the System Manager Equipment-Inventory screen, right-click on the EIU you just took OOS, and choose the “Delete” option from the pop-up menu. *A confirmation window appears. Click “Yes”.*
9	Manually provision the EIU. Follow Procedure 3-32 “Manually provisioning an equipment inventory unit (EIU)” in *Provisioning and Operating Procedures*, 323-1701-310.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

Step	Action
10	Replace the EIU. Follow Procedure 2-36 “Replacing an Equipment Inventory Unit” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed EIU has faults. You have completed this procedure.
the alarm remains	the EIU is not the problem. Replace the original EIU. Contact your next level of support.

—end—

Procedure 19-2
EIU—Equipment Inventory Unit Missing/Failed

Probable cause

This alarm becomes active when one of the following conditions exists:

- the EIU is missing or defective
- the EIU RJ45 cable is not connected correctly to the port on the maintenance panel or is defective

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action	
1	Determine whether the EIU is present and properly connected.	
2	**If** the EIU	**Then**
	is present and properly connected	go to the next step
	is not present or is not properly connected	follow Procedure 6-10 "Connecting passive devices to the Equipment Inventory Unit in new installations" and Procedure 6-12 "Connecting the Equipment Inventory Unit to the maintenance panel" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 19-2 (continued)
EIU—Equipment Inventory Unit Missing/Failed

Step	Action	
3	Determine which equipment inventory port (EIP1 to EIP4) on the maintenance panel raised the alarm.	
4	Disconnect the RJ45 cable from the EIP port in the maintenance panel.	
5	Wait one minute and then reconnect the cable.	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
7	Disconnect the RJ45 cable from the port on the equipment inventory unit.	
8	Wait one minute and then reconnect the cable.	
9	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
10	Replace the cable.	
11	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
12	Replace the EIU. Follow Procedure 2-36 “Replacing an Equipment Inventory Unit” in *Maintenance and Replacement Procedures,* 323-1701-546.	
13	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 19-3
EIU—Unknown Circuit Pack

Probable cause

This alarm becomes active when the SP circuit pack fails to retrieve the manufacturing data from the EIU (the data may be missing or may be incorrect).

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Actions

Step	Action	
1	Replace the EIU. Follow Procedure 2-36 "Replacing an Equipment Inventory Unit" in *Maintenance and Replacement Procedures,* 323-1701-546.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Clearing 1310 nm splitter/coupler alarms

Use the procedures in this chapter to clear 1310 nm splitter/coupler alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of 1310 nm splitter/couplers, see the "1310 nm splitter/coupler" chapter in *Hardware Description*, 323-1701-102.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 20-1 lists the procedure in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 20-1
Procedures for clearing 1310 nm splitter/coupler alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
20-1 1310 nm S/C—Optical Tray Mismatch	20-3	Equipment
20-2 1310 nm S/C—Optical Tray Missing	20-6	Equipment
20-3 1310 nm S/C—Unknown Circuit Pack	20-8	Equipment

Procedure 20-1
1310 nm S/C—Optical Tray Mismatch

Probable cause

The Optical Tray Mismatch alarm becomes active when one of the two following conditions is met:

- the type of 1310 nm splitter/coupler is different from the type of 1310 nm splitter/coupler that is provisioned
- a component other than a 1310 nm splitter/coupler is connected to a port on the maintenance panel or equipment inventory unit that is provisioned for a 1310 nm splitter/coupler

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 20-1 (continued)
1310 nm S/C—Optical Tray Mismatch

Action

Step	Action
1	Make sure the component connected to the port on the maintenance panel or the EIU is a 1310 nm splitter/coupler.

If	**Then** go to
the connected component is a 1310 nm splitter/coupler and is suppose to be a 1310 nm splitter/coupler	step 4
the connected component is not a 1310 nm splitter/coupler and is suppose to be a 1310 nm splitter/coupler	the next step

2	Remove the component connected to the port that is provisioned for a 1310 nm splitter/coupler.
3	Wait one minute and connect the 1310 nm splitter/coupler to the port on the maintenance panel or EIU.

If	**Then**
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

4	Put the 1310 nm splitter/coupler out of service. In the System Manager Equipment-Inventory screen, right-click on the 1310 nm splitter/coupler and choose the “Modify” option from the pop-up menu.
5	In the State area of the Optical Metro Inventory dialog box, select OOS from the Administrative drop-down list.
6	Click **OK** to close the dialog box. *The Confirm Inventory OOS dialog box appears.*
7	Click **Yes** to confirm the change.

—continued—

Procedure 20-1 (continued)
1310 nm S/C—Optical Tray Mismatch

Step	Action
8	In the System Manager Equipment-Inventory screen, right-click on the 1310 nm splitter/coupler you just took OOS, and choose the “Delete” option from the pop-up menu. *A confirmation window appears. Click “Yes”.*
9	Manually provision the 1310 nm splitter/coupler. Follow Procedure 3-28 “Manually provisioning a 1310 nm splitter/coupler” in *Provisioning and Operating Procedures*, 323-1701-310.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

Step	Action
10	Replace the 1310 nm splitter/coupler. Follow Procedure 2-33 “Replacing a 1310 nm splitter/coupler drawer” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed 1310 nm splitter/coupler has faults. You have completed this procedure.
the alarm remains	the 1310 nm splitter/coupler is not the problem. Replace the original 1310 nm splitter/coupler. Contact your next level of support.

—end—

Procedure 20-2
1310 nm S/C—Optical Tray Missing

Probable cause

This alarm becomes active when one of the following conditions occurs:

- the 1310 nm splitter/coupler is not present in the shelf but it is provisioned in the slot
- the 1310 nm splitter/coupler cable is not connected to the port in the maintenance panel
- the 1310 nm splitter/coupler cable is not connected to the port in the equipment inventory unit (EIU)

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 20-2 (continued)
1310 nm S/C—Optical Tray Missing

Action

Step	Action	
1	Make sure the cable connecting the 1310 nm splitter/coupler to the maintenance panel or the EIU is installed in the correct port and is connected properly. Check for loose connections.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
3	Disconnect the cable from the maintenance panel or EIU and the 1310 nm splitter/coupler, wait one minute, and then reconnect the cable.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
5	Replace the 1310 nm splitter/coupler cable.	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
7	Replace the 1310 nm splitter/coupler. Follow Procedure 2-33 “Replacing a 1310 nm splitter/coupler drawer” in *Maintenance and Replacement Procedures*, 323-1701-546.	
8	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
		—end—

Procedure 20-3
1310 nm S/C—Unknown Circuit Pack

Probable cause

This alarm becomes active when the SP circuit pack fails to retrieve the manufacturing data from the 1310 nm splitter/coupler (the data may be missing or may be incorrect).

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Actions

Step	Action
1	Replace the 1310 nm splitter/coupler. Follow Procedure 2-33 "Replacing a 1310 nm splitter/coupler drawer" in *Maintenance and Replacement Procedures*, 323-1701-546.
2	**If** / **Then** the alarm clears / you have completed this procedure the alarm remains / contact your next level of support

—end—

Clearing transponder protection tray alarms

Use the procedures in this chapter to clear transponder protection tray alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of the transponder protection tray, see the "Transponder Protection Tray" chapter in *Hardware Description*, 323-1701-102.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 21-1 lists the procedure in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 21-1
Procedures for clearing transponder protection tray alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
21-1 TPT—Optical Tray Mismatch	21-3	Equipment
21-2 TPT—Optical Tray Missing	21-6	Equipment
21-3 TPT—Unknown Circuit Pack	21-8	Equipment

Procedure 21-1
TPT—Optical Tray Mismatch

Probable cause

The Optical Tray Mismatch alarm becomes active when one of the two following conditions is met:

- the type of transponder protection tray (TPT) is different from the type of TPT that is provisioned
- a component other than a TPT is connected to a port on the maintenance panel or equipment inventory unit that is provisioned for a TPT

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 21-1 (continued)
TPT—Optical Tray Mismatch

Action

Step	Action
1	Make sure the component connected to the port on the maintenance panel or the EIU is a TPT.

If	**Then** go to
the connected component is a TPT and is suppose to be a TPT	step 4
the connected component is not a TPT and is suppose to be a TPT	the next step

2	Remove the component connected to the port that is provisioned for a TPT.
3	Wait one minute and connect the TPT to the port on the maintenance panel or EIU.

If	**Then**
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

4	Put the TPT out of service. In the System Manager Equipment-Inventory screen, right-click on the TPT and choose the “Modify” option from the pop-up menu.
5	In the State area of the Optical Metro Inventory dialog box, select OOS from the Administrative drop-down list.
6	Click **OK** to close the dialog box. *The Confirm Inventory OOS dialog box appears.*
7	Click **Yes** to confirm the change.

—continued—

Procedure 21-1 (continued)
TPT—Optical Tray Mismatch

Step	Action
8	In the System Manager Equipment-Inventory screen, right-click on the TPT you just took OOS, and choose the “Delete” option from the pop-up menu. *A confirmation window appears. Click “Yes”.*
9	Manually provision the TPT. Follow Procedure 3-31 “Manually provisioning a transponder protection tray” in *Provisioning and Operating Procedures*, 323-1701-310.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

10	Replace the TPT. See Procedure 2-18 “Replacing a Transponder Protection Tray” in *Maintenance and Replacement Procedures*, 323-1701-546.
11	

If	Then
the alarm clears	the removed TPT has faults. You have completed this procedure.
the alarm remains	the TPT is not the problem. Replace the original TPT. Contact your next level of support.

—end—

Procedure 21-2
TPT—Optical Tray Missing

Probable cause

This alarm becomes active when one of the following conditions occurs:

- the transponder protection tray (TPT) is not present in the shelf but it is provisioned in the slot
- the TPT cable is not connected to the port in the maintenance panel
- the TPT cable is not connected to the port in the equipment inventory unit (EIU)

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 21-2 (continued)
TPT—Optical Tray Missing

Action

Step	Action	
1	Make sure the cable connecting the TPT to the maintenance panel or the EIU is installed in the correct port and is connected properly. Check for loose connections.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
3	Disconnect the cable from the maintenance panel or EIU and the TPT, wait one minute, and then reconnect the cable.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
5	Replace the TPT cable.	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
7	Replace the TPT. See Procedure 2-18 “Replacing a Transponder Protection Tray” in *Maintenance and Replacement Procedures*, 323-1701-546.	
8	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
		—end—

Procedure 21-3
TPT—Unknown Circuit Pack

Probable cause

This alarm becomes active when the SP circuit pack fails to retrieve the manufacturing data from the transponder protection tray (TPT) (the data may be missing or may be incorrect).

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Actions

Step	Action	
1	Replace the TPT. See Procedure 2-18 "Replacing a Transponder Protection Tray" in *Maintenance and Replacement Procedures*, 323-1701-546.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
		—end—

Clearing discrete VOA alarms

Use the procedures in this chapter to clear discrete VOA alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of the discrete VOA, see the "Discrete VOA" chapter in *Hardware Description*, 323-1701-102.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 22-1 lists the procedure in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 22-1
Procedures for clearing discrete VOA alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
22-1 VOA—Optical Tray Mismatch	22-3	Equipment
22-2 VOA—Optical Tray Missing	22-6	Equipment
22-3 VOA—Unknown Circuit Pack	22-8	Equipment

Procedure 22-1
VOA—Optical Tray Mismatch

Probable cause

The Optical Tray Mismatch alarm becomes active when one of the two following conditions is met:

- the type of discrete VOA is different from the type of discrete VOA that is provisioned
- a component other than a discrete VOA is connected to a port on the maintenance panel or equipment inventory unit (EIU) that is provisioned for a discrete VOA

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 22-1 (continued)
VOA—Optical Tray Mismatch

Action

Step	Action
1	Make sure the component connected to the port on the maintenance panel or the EIU is a discrete VOA.

If	**Then** go to
the connected component is a discrete VOA and is suppose to be a discrete VOA	step 4
the connected component is not a discrete VOA and is suppose to be a discrete VOA	the next step

2	Remove the component connected to the port that is provisioned for a discrete VOA.
3	Wait one minute and connect the discrete VOA to the port on the maintenance panel or EIU.

If	**Then**
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

4	Put the discrete VOA out of service. In the System Manager Equipment-Inventory screen, right-click on the discrete VOA and choose the “Modify” option from the pop-up menu.
5	In the State area of the Optical Metro Inventory dialog box, select OOS from the Administrative drop-down list.
6	Click **OK** to close the dialog box. *The Confirm Inventory OOS dialog box appears.*
7	Click **Yes** to confirm the change.

—continued—

Procedure 22-1 (continued)
VOA—Optical Tray Mismatch

Step	Action
8	In the System Manager Equipment-Inventory screen, right-click on the discrete VOA you just took OOS, and choose the “Delete” option from the pop-up menu. *A confirmation window appears. Click “Yes”.*
9	Manually provision the discrete VOA. Follow Procedure 3-30 “Manually provisioning a VOA tray” in *Provisioning and Operating Procedures*, 323-1701-310.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

Step	Action
10	Replace the discrete VOA. Follow Procedure 2-35 “Replacing a Discrete VOA drawer” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed discrete VOA has faults. You have completed this procedure.
the alarm remains	the discrete VOA is not the problem. Replace the original discrete VOA. Contact your next level of support.

—end—

Procedure 22-2
VOA—Optical Tray Missing

Probable cause

This alarm becomes active when one of the following conditions occurs:

- the discrete VOA is not present in the shelf but it is provisioned in the slot
- the discrete VOA cable is not connected to the port in the maintenance panel
- the discrete VOA cable is not connected to the port in the equipment inventory unit (EIU)

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 22-2 (continued)
VOA—Optical Tray Missing

Action

Step	Action	
1	Make sure the cable connecting the discrete VOA to the maintenance panel or the EIU is installed in the correct port and is connected properly. Check for loose connections.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
3	Disconnect the cable from the maintenance panel or EIU and the discrete VOA, wait one minute, and then reconnect the cable.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
5	Replace the discrete VOA cable.	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
7	Replace the discrete VOA. Follow Procedure 2-35 “Replacing a Discrete VOA drawer” in *Maintenance and Replacement Procedures*, 323-1701-546.	
8	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 22-3
VOA—Unknown Circuit Pack

Probable cause

This alarm becomes active when the SP circuit pack fails to retrieve the manufacturing data from the discrete VOA (the data may be missing or may be incorrect).

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Actions

Step	Action
1	Replace the discrete VOA. Follow Procedure 2-35 "Replacing a Discrete VOA drawer" in *Maintenance and Replacement Procedures*, 323-1701-546.
2	**If** / **Then** the alarm clears / you have completed this procedure the alarm remains / contact your next level of support **—end—**

Clearing security alarms

Use the procedures in this chapter to clear security alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 23-1 lists the procedure in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 23-1
Procedures for clearing security alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
23-1 Intrusion Attempt	23-3	Not applicable
23-2 Primary RADIUS Server Unavailable	23-5	Not applicable
23-3 RADIUS Server(s) Unavailable	23-6	Not applicable
23-4 Secondary RADIUS Server Unavailable	23-7	Not applicable

Procedure 23-1
Intrusion Attempt

Probable cause

This alarm becomes active when the number of consecutive failed login attempts exceeds the provisioned number of allowed login attempts. This can be the result of an unauthorized person trying to guess userIDs and passwords to gain access to the NE, or an operator incorrectly entering a userID or password consecutively several times (exceeding the provisioned number of allowed failed login attempts).

This alarm can be manually cleared by an administrator. After the administrator has cleared the alarm, the failed login attempt counter will reset and start to count again.

If the alarm is raised frequently and unnecessarily, adjust the maximum number of login attempts. Follow Procedure 2-9 "Setting intrusion attempts handling" in *Provisioning and Operating Procedures*, 323-1701-310.

Note 1: When an Intrusion attempt alarm becomes active, all subsequent login requests are rejected for the duration of the lockout period. The lockout period is provisionable by an administrator. When the lockout period expires, the NE resumes authenticating user login requests. However, the alarm remains active until the administrator clears it.

Note 2: This alarm clears after a reboot of the shelf or the shelf processor.

Impact

Major, non-service-affecting.

Requirements

You must be an admin-level user to clear this alarm.

You must be logged into the System Manager to perform this procedure. To log into the network, follow Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that is raising the alarm.

—continued—

Procedure 23-1 (continued)
Intrusion Attempt

Step	Action
2	From the Security menu, select Clear Security Alarm. *The Security Alarms dialog box appears and lists all the security alarms that are currently raised on the selected shelves.*
3	Highlight the Intrusion Attempt alarm and click **Clear**. ***Note:*** Clearing the intrusion Attempt alarm has no effect on the channel lockout. The port continues to be locked out until the lockout period expires.
4	Click **Yes** in the confirmation dialog box.
5	Click **Close**.
6	Follow your company policy for handling intrusion attempts.

—end—

Procedure 23-2
Primary RADIUS Server Unavailable

Probable cause

This alarm becomes active when both a primary and a secondary RADIUS server are provisioned but the primary RADIUS server is not available.

Note 1: This alarm clears when the next RADIUS request is successful via the primary RADIUS server. You can also clear this alarm manually.

Note 2: This alarm clears after a reboot of the shelf or the shelf processor.

Impact

Minor, non-service-affecting.

Requirements

You must be an admin-level user to manually clear this alarm.

You must be logged into the System Manager to perform this procedure. To log into the network, follow Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

Action

Step	Action
1	From the Security menu, select Clear Security Alarm. *The Security Alarms dialog box appears and lists all the security alarms that are currently raised on the selected shelves.*
2	Highlight the alarm and click **Clear**.
3	Click **Close**.

—end—

Procedure 23-3
RADIUS Server(s) Unavailable

Probable cause

This alarm becomes active under the following conditions:

- only one RADIUS server is provisioned (as the primary server) and it is not available
- both provisioned RADIUS servers are not available

Note 1: This alarm clears when the next RADIUS request is successful. You can also clear this alarm manually.

Note 2: If you have both a primary security gateway and a secondary security gateway provisioned, and both security gateways have the Radius Server(s) Unavailable alarm, the alarm will clear on the primary security gateway when the next RADIUS request is successful. However, the alarm on the secondary security gateway needs to be manually cleared by an administrator.

Note 3: This alarm clears after a reboot of the shelf or the shelf processor.

Impact

Major, non-service-affecting.

Requirements

You must be an admin-level user to manually clear this alarm.

You must be logged into the System Manager to perform this procedure. To log into the network, follow Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

Action

Step	Action
1	From the Security menu, select Clear Security Alarm. *The Security Alarms dialog box appears and lists all the security alarms that are currently raised on the selected shelves.*
2	Highlight the alarm and click **Clear**.
3	Click **Close**.

—end—

Procedure 23-4
Secondary RADIUS Server Unavailable

Probable cause

This alarm becomes active when the following conditions exist:

- both a primary and secondary RADIUS server have been provisioned
- a "RADIUS Server Unavailable" alarm is raised
- the authentication request to the primary RADIUS server is successful
- the request to the secondary RADIUS server times out (there is no response back)

Note 1: This alarm clears when the next RADIUS request to the secondary server is successful. You can also clear this alarm manually.

Note 2: This alarm clears after a reboot of the shelf or the shelf processor.

Impact

Minor, non-service-affecting.

Requirements

You must be an admin-level user to manually clear this alarm.

You must be logged into the System Manager to perform this procedure. To log into the network, follow Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

Action

Step	Action
1	From the Security menu, select Clear Security Alarm. *The Security Alarms dialog box appears and lists all the security alarms that are currently raised on the selected shelves.*
2	Highlight the alarm and click **Clear**.
3	Click **Close**.

—end—

Troubleshooting the Enhanced Trunk Switch

Use the tables and procedures in this chapter to troubleshoot the Enhanced Trunk Switch (ETS). Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of the ETS, see the "Enhanced Trunk Switch" chapter in *Hardware Description*, 323-1701-102. For more information on ETS alarms and events as well as default alarm provisioning, see the *TL1 Interface, Part 4 of 4*, 323-1701-190.

ETS shelf troubleshooting

Tables 24-1, 24-2, and 24-3 list the meaning of the indicator lamps on the ETS shelf. These indicator lamps show the status of the shelf, the fans, and the primary and secondary power supplies.

Table 24-1
Fan alarm relays and indicator lamps

Condition	Fan 1 LED	Fan 2 LED	Fan 1 relay	Fan 2 relay	Description
Fan OK	off	off	open	open	Normal, active unit
Fan 1 failure detected	red	off	close	open	Fan 1 failure or missing
Fan 2 failure detected	off	red	open	close	Fan 2 failure or missing
Both fan failures detected	red	red	close	close	Both fan failures or missing, or 12 V power supply failure

Table 24-2
Power indicator lamps

Condition	LEDs	
	Power A	**Power B**
A (primary) and B (secondary) power supplies are present	on	on
Power supply A is present. Power supply B has failed or is not connected.	on	off
Power supply B is present. Power supply A has failed or is not connected.	off	on
No power supply present.	off	off

Table 24-3
Shelf indicator lamps

Condition	LEDs		
	Shelf 1	**Shelf 2**	**Shelf 3**
Comms module present in slot A.	on	off	off
Comms module present in slot A, and another shelf is connected to this shelf through its SUBTENDING IN 1 port.	off	on	off
Comms module present in slot A, and another shelf is connected to this shelf through its SUBTENDING IN 2 port.	off	off	on
• standalone shelf • no Comms module is present in slot A • the subtending cable is not connected	off	off	off

ETS Comms module troubleshooting

Table 24-4 lists the meaning of the indicator lamps on the ETS Comms module and refers to the procedures (if necessary) to troubleshoot the alarm conditions.

Table 24-4
ETS Comms module indicator lamps

LED type	Color	Description	Go to
CARD	yellow/green (bi-color)	Indicates the operational state of the ETS Comms module.	
	green	The module is operating normally.	No action required.
	yellow	The module failed to initialize. This state can indicate that the ETS Comms module is not fully seated in the slot.	Procedure 24-1
	green/yellow flashing	The ETS Comms module is not mounted in the correct slot of the ETS Shelf.	Procedure 24-2
	off	A loss of power has occurred.	Procedure 24-5
CRIT	red	Indicates that a module managed by the ETS Comms raised a critical alarm.	Procedure 24-3
MAJ	red	Indicates that the module managed by the ETS Comms raised a major alarm or the ETS Comms has lost contact to the monitored module.	Procedure 24-3
MIN	yellow	Indicates that the module managed by the ETS Comms raised a minor alarm or one of the power supplies (A or B) has failed.	Procedure 24-4
ACO	yellow	Indicates that the alarm cut-off (ACO) button was pressed, deactivating the ETS Comms telemetry alarm relays. Alarms are no longer reported through the alarm relays in this case.	No action required.
	turns off	Indicates that the INIT button was pressed while the ACO LED was yellow. The Comms module returns to reporting the current status and the ACO is disabled.	No action required.

ETS Switch module troubleshooting

Troubleshooting using the Comms module

You can troubleshoot the ETS Switch module through the ETS Comms module using TL1. See Procedure 24-6 “Troubleshooting using TL1”.

Troubleshooting using the front panel LEDs

The ETS Switch module front panel has six light emitting diodes (LEDs), which show the status of the module, the path in use, and current operating mode.

Tables 24-5 to 24-8 describe the states of the LEDs depending on the condition and operating mode of the ETS Switch module. Table 24-9 provides a quick reference for troubleshooting the ETS Switch module. The following terms are used in the tables:

- OK indicates that the input power level is within the operational thresholds
- low indicates that the input power level is less than the operational thresholds
- high indicates that the input power level is greater than the operational thresholds

Note 1: Relays for alarms are open when there is no alarm active. Relays are closed when an alarm is active.

Note 2: The LED states described in the following table are based on the factory default values. If you customize the module's alarm notifications, you cannot rely on the MAJ and MIN LEDs to help you troubleshoot the module.

Table 24-5
ETS Switch LED functionality—automatic mode when auto-switch-back is enabled

Condition			LEDs					
Active link	Input power							
	PRI	SEC	CARD	PRI	SEC	AUTO	MAJ	MIN
PRI	OK	OK	green	green	—	green	—	—
	OK	low or high	green	green	—	green	—	yellow
	high	OK, low, or high	green	yellow	—	green	—	yellow
	low	low	green	yellow	—	green	red	yellow

Table 24-5 (continued)
ETS Switch LED functionality—automatic mode when auto-switch-back is enabled

Condition			**LEDs**					
Active link	**Input power**							
	PRI	**SEC**	**CARD**	**PRI**	**SEC**	**AUTO**	**MAJ**	**MIN**
SEC	low	OK	green	—	green	green	—	yellow
	high or OK	***OK***	green	—	green	green	—	—
	high or OK	***high***	green	—	green	green	—	yellow
	low	high	green	—	yellow	green	—	yellow
	low	low	green	—	yellow	green	red	yellow
Note: For the scenarios highlighted in bold/italic, a yellow LED remains lit for only 3 seconds. After 3 seconds, auto-switch-back activates (if enabled) and the LEDs indicate that the primary (PRI) path is active.								

Table 24-6
ETS Switch LED functionality—automatic mode when auto-switch-back is disabled

Condition			**LEDs**					
Active link	**Input power**							
	PRI	**SEC**	**CARD**	**PRI**	**SEC**	**AUTO**	**MAJ**	**MIN**
PRI	OK	OK	green	green	—	green	—	—
	OK	low or high	green	green	—	green	—	yellow
	high	OK, low, or high	green	yellow	—	green	—	yellow
	low	low	green	yellow	—	green	red	yellow
SEC	OK	OK	green	—	green	green	—	—
	low or high	OK	green	—	green	green	—	yellow
	OK, low, or high	high	green	—	yellow	green	—	yellow
	low	low	green	—	yellow	green	red	yellow

Table 24-7
ETS Switch LED functionality—manual mode

Condition			LEDs					
Active link	**Input power**							
	PRI	**SEC**	**CARD**	**PRI**	**SEC**	**AUTO**	**MAJ**	**MIN**
PRI	OK	OK	green	green	—	—	—	—
	OK	low or high	green	green	—	—	—	yellow
	high	OK, low, or high	green	yellow	—	—	—	yellow
	low	OK	green	yellow	—	—	red	—
	low	low or high	green	yellow	—	—	red	yellow
SEC	low	OK	green	—	green	—	—	—
	low or high	OK	green	—	green	—	—	yellow
	OK, low, or high	high	green	—	yellow	—	—	yellow
	OK	low	green	—	yellow	—	red	—
	low or high	low	green	—	yellow	—	red	yellow

Table 24-8
ETS Switch LED functionality—monitoring the electrical power supply

Condition	LEDs						Description
	CARD	**PRI**	**SEC**	**AUTO**	**MAJ**	**MIN**	
-48 V DC supply A and B present	green	—	—	—	—	—	Power from both of the –48V DC supplies is present.
-48 V DC supply A or B present	green	—	—	—	—	yellow	Minor alarm is active when only one of the two –48V DC power supplies is present.
Power failure	—	—	—	—	—	—	Major and Minor alarm relays are closed when there is a total electrical power failure.

Table 24-9
Quick reference for troubleshooting the ETS Switch module

Card	MAJ	MIN	PRI	SEC	AUTO	Manual mode			Auto mode			Auto switch back	See Proc
						PRI	SEC	-48 V	PRI	SEC	-48 V		
green	red	yellow	off	yellow	green or off	OK high low	low	OK or one failed	low	low	OK or one failed	on or off	24-9
green	red	yellow	yellow	off	green or off	low	OK high low	OK or one failed	low	low	OK or one failed	on or off	24-9
green	off	yellow	off	yellow	green or off	OK high low	high	OK or one failed	OK high low	high	OK or one failed	off	24-9
green	off	yellow	off	yellow	green or off	OK high low	high	OK or one failed	OK high	high	OK or one failed	on See Note 1	24-9
green	off	yellow	off	yellow	green or off	OK high low	high	OK or one failed	low	high	OK or one failed	on	24-9
green	off	yellow	yellow	off	green or off	high	OK high low	OK or one failed	high	OK high low	OK or one failed	on or off See Note 2	24-9
green	off	yellow	off	green	green or off	OK high low	OK	One failed	OK high low	OK	One failed	on or off	24-9
green	off	yellow	off	green	green or off	high low	OK	OK	high low	OK	OK	on or off	24-9
green	off	yellow	green	off	green or off	OK	OK high low	One failed	OK	OK high low	One failed	on or off	24-9
green	off	yellow	green	off	green or off	OK	high low	OK	OK	high low	OK	on or off	24-9
off	off	off	off	off	off	—	—	—	—	—	—	—	24-10

Note 1: If switch-back is enabled and the module is in automatic mode, traffic is switched back to the primary path within 3 seconds.

Note 2: If switch-back is enabled, the module is in automatic mode, and the incoming signal on the primary path is OK or high, traffic is switched back to the primary path within 3 seconds.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 24-10 lists the procedures in this chapter.

Table 24-10
Troubleshooting ETS alarms

Procedure	Page
24-1 ETS Comms—Module failed	24-10
24-2 ETS Comms—Module mounted in the wrong slot	24-11
24-3 ETS Comms—Managed module raises a major/critical alarm	24-12
24-4 ETS Comms—Managed module raises a minor alarm, or electrical failure supply A or B	24-13
24-5 ETS Comms—Loss of power	24-14
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Table 24-10 (continued)
Troubleshooting ETS alarms

Procedure	Page
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24-9 ETS Switch—No optical signal is present	24-20
24-10 ETS Switch—Electrical power failure	24-22

Procedure 24-1
ETS Comms—Module failed

Probable cause

This alarm is shown by a yellow CARD LED on the Comms module.

This alarm condition occurs when the Comms module fails to initialize. This state can indicate that the ETS Comms module is not fully seated in the slot.

Action

Step	Action	
1	Make sure that the Comms module is fully engaged in the backplane connector.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
		—end—

Procedure 24-2
ETS Comms—Module mounted in the wrong slot

Probable cause

This alarm is shown by a flashing green/yellow CARD LED on the Comms module.

This alarm condition occurs when the Comms module is mounted in the wrong slot of the ETS shelf.

Action

Step	Action	
1	Remove the Comms module.	
2	Mount the Comms module in slot A (left side of the shelf). See Procedure 4-13 “Installing an Enhanced Trunk Switch shelf” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.	
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
		—end—

Procedure 24-3
ETS Comms—Managed module raises a major/critical alarm

Probable cause

This alarm is shown by a red MAJ or CRIT LED on the Comms module.

This alarm condition occurs when

- one of the modules managed by the Comms module raises a major alarm
- the Comms module loses contact with a managed module because
  - — the managed module is intentionally removed
  - — the slot is occupied but there is no communication with the managed module

Action

Step	Action	
1	Check to see if one of the managed modules is raising a major alarm by issuing a RTRV-ALM command.	
2	**If**	**Then** go to
	a module raised an alarm	the procedure for clearing that alarm
	otherwise	the next step
3	Check to see if a managed module was removed from the shelf.	
4	**If**	**Then** go to
	a module was removed and the slot is going to remain empty	press the INIT button on the front panel to update the Comms configuration file
	otherwise	the next step
5	Make sure the managed module is mounted correctly and fully engages the backplane connector.	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 24-4
ETS Comms—Managed module raises a minor alarm, or electrical failure supply A or B

Probable cause

This alarm is shown by a yellow MIN LED on the Comms module.

This alarm condition occurs when

- one of the modules managed by the Comms module raises a minor alarm
- one of the electrical power supplies (A or B) fails

Action

Step	Action	
1	Check to see if one of the managed modules is raising a minor alarm by issuing a RTRV-ALM command.	
2	**If**	**Then** go to
	a managed module is raising an alarm	the procedure for clearing that alarm
	otherwise	the next step
3	If only the Comms module raises the alarm, follow the appropriate procedure for testing a rack-mounted DC power supply. Take the appropriate actions to restore the failed power supply.	
4	If either the A or B power supply is outside the range -40 to -57 Vdc, correct the problem.	
5	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 24-5
ETS Comms—Loss of power

Probable cause

This alarm is shown by no lit LEDs on the Comms module.

This alarm condition occurs when there is a loss of power.

Action

Step	Action	
1	Make sure that the Comms module is seated correctly in the backplane connector.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
3	Make sure that the power supply to the shelf is within specifications and has the proper polarity. See Table 1-34 in *Technical Specifications*, 323-1701-180, for the ETS specifications.	
4	If the power supply is within specifications and all of the LEDs remain off, contact your next level of support.	

—end—

Procedure 24-6
Troubleshooting using TL1

Use this procedure to troubleshoot the ETS Switch module using TL1 through the ETS Comms module.

> ***Note:*** The module must be using the factory default values for alarm provisioning. If you have changed the default values for the alarm provisioning, substitute the RTRV-COND-ALL command for the RTRV-ALM command, and look for the alarm name instead of the alarm code to clear traffic-affecting alarms.

For more information on ETS default alarm provisioning as well as the supported TL1 commands, see the *TL1 Interface, Part 4 of 4*, 323-1701-190.

Action

Step	Action
1	Establish a TL1 session with the communications module associated with the ETS Switch module. See the "Enhanced Trunk Switch OAM&P" chapter in *Provisioning and Operating Procedures*, 323-1701-310.
2	Retrieve the active alarms using the RTRV-ALM-ALL command. ***Note 1:*** If you have changed the default values for the alarm provisioning, use the RTRV-COND-ALL command and look for the alarm name instead of the alarm code. ***Note 2:*** Always clear the alarms with the highest severity first: CRIT, then MJ, and then MN.
3	**If** / **Then** go to no major alarms are raised — step 6 the active path has alarms — the next step
4	**If** / **Then** go to port 1 (PRI) has an active path failure — Procedure 24-7 to clear physical port D. Go to the next step. port 2 (SEC) has an active path failure — Procedure 24-7 to clear physical port F. Go to the next step.

—continued—

Procedure 24-6 (continued)
Troubleshooting using TL1

Step	Action

5

If	Then
the alarm clears	you have completed this procedure
the alarm remains	go to the next step

6 Retrieve the alarms again and make sure that no other major alarms are raised. If any minor alarms exist (look for an "MN" notification code), go to the next step.

7

If	**Then** go to
the received power on port 1 (PRI) or port 2 (SEC) is low	Procedure 24-7. Go to the next step.
the received power on port 1 (PRI) or port 2 (SEC) is high	Procedure 24-8. Go to the next step.

8 Make sure that the MAJ and MIN LEDs are off. Retrieve the alarms again and make sure that no other alarms are raised.

9

If	Then
all alarms are cleared	you have completed this procedure
alarms remain	contact your next level of support

—end—

Procedure 24-7
ETS Switch—Received Power Low

Probable cause

A minor alarm is raised when the received power level is less than the preset threshold. A major alarm is raised when this condition exists and the port is also the active path and is unable to switch traffic to the alternate path.

The traffic is switched to the secondary path.

Action

Step	Action
1	Disconnect the fiber from the port.
2	Use an optical power meter to measure the power of the received signal on this fiber. Make sure that the power is within the input sensitivity range. See Table 1-34 in *Technical Specifications*, 323-1701-180, for the ETS specifications.
3	

If	**Then** go to
the power level is within the expected sensitivity range	step 4
the received power is too low	step 6

4	**If**	**Then**
	operating in window switching mode	adjust the lower window switching range (LWSR). See Procedure 8-13 "Setting the ETS Switch module operating and switching modes" in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.
	otherwise	contact your next level of support

5	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step

6	Check to see if the fiber is damaged, or is pinched, tied, or coiled too tightly. Resolve the problem.
7	Clean the fiber and the bulkhead. See "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.
8	Reconnect the fiber.

—continued—

Procedure 24-7 (continued)
ETS Switch—Received Power Low

Step	Action
9	If the condition persists, check the operational status of the transmitting equipment at the other end of the link.
10	If the condition continues to persist, contact your next level of support.

—end—

Procedure 24-8
ETS Switch—Received Power High

Probable cause

This minor alarm is raised when the received power is greater than the provisioned upper limit for incoming signals.

Traffic is not switched to the alternate path.

Action

Step	Action	
1	Disconnect the fiber from the port.	
2	Use an optical power meter to measure the power of the received signal on this fiber. Make sure that the received signal power is within the input sensitivity range. See Table 1-34 in *Technical Specifications*, 323-1701-180, for the ETS specifications.	
3	**If**	**Then**
	the power level is within the expected sensitivity range	contact your next level of support
	the received power is too high	go to the next step
4	Use an attenuator to reduce the signal power.	
5	If the condition persists, check the operational status of the transmitting equipment at the other end of the link.	
6	If the condition persists, contact your next level of support.	

—end—

Procedure 24-9
ETS Switch—No optical signal is present

Probable cause

This alarm is shown by the following LEDs on the Switch module:

- CARD: green
- MAJ: red or off
- MIN: yellow or off
- PRI: yellow or off
- SEC: yellow or off
- AUTO: yellow or off

This alarm condition occurs when

- the power from both of the -48 V dc power supplies is present or one power supply has failed
- the power level on one or more fibers is high or low

Action

Step	Action	
1	Make sure that both -48 V DC power supplies are within specification. See Table 1-34 in *Technical Specifications*, 323-1701-180, for the ETS specifications.	
2	**If**	**Then**
	the power supplies are not within specification	correct the power supply problem. Go to the next step.
	otherwise	go to step 4
3	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
4	Check the optical power on the fibers. See Table 24-9 for information on which fiber may be causing the problem.	
5	**If**	**Then**
	there is a problem with the power levels	correct the power level problem. Go to the next step.
	otherwise	contact your next level of support

—continued—

Procedure 24-9 (continued)
ETS Switch—No optical signal is present

Step	Action	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Procedure 24-10
ETS Switch—Electrical power failure

Probable cause

This alarm is shown by no lit LEDs on the Switch module.

This alarm condition occurs when there is no power supply to the module. In the event of a power failure, a major alarm relay is set by default.

Action

Step	Action	
1	Make sure that the Switch module is installed correctly, and that it engages the backplane in the shelf.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
3	Make sure that the power supply to the shelf backplane is present and operational.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Troubleshooting the Optical Trunk Switch

Use the tables and procedures in this chapter to troubleshoot the Optical Trunk Switch (OTS). Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of the OTS, see the "Optical Trunk Switch" chapter in *Hardware Description*, 323-1701-102.

The indicator lamps and alarms of one Optical Trunk Switch (OTS) do not indicate the bidirectional health of a link. You must check the status of the OTS at each end of the path before you perform any action that may be traffic-affecting.

For example, if only one fiber of a pair is cut, one end reports a failed link and the other does not. Although the link cannot be used bidirectionally, one OTS does not report the link failure. If you tried to initiate a switchback from the standby link to the primary link from the OTS that is not reporting the failure, the OTS pair would try to restore traffic to the primary link, but would not be able to. If you request a switch to a failed link, there is an unpredictable traffic disruption of more than 100 ms.

Table 25-1 lists actions to take in response to status changes reported by the Optical Trunk Switch.

Table 25-1
Indicator lamps on the Optical Trunk switch (OTS)

Indicator lamp	Color/ State	Meaning	Action
PRI FAIL	red/ on	The primary path has failed.	
	off	The primary path is functioning normally.	No action required.
PRI ACT	green/ on	The primary path is selected and the receive power is acceptable.	No action required.
	off	The standby path is selected.	No action required.
STNBY FAIL	red/ on	The standby path has failed.	No action required.
	off	The standby path is functioning normally.	No action required.
STNBY ACT	green/ on	The standby path is selected and the receive power is acceptable.	No action required.
	off	The primary path is selected.	No action required.
*AUTO/MAN	green/ on	The Optical Trunk Switch is in automatic mode.	No action required.
	red/ on	The Optical Trunk Switch is in manual mode.	No action required.
PWR A/B FAIL	red/ on	At least one of the two –48V dc power supplies has failed.	• Check the power connection at the OTS. • Check the power at the output for the OTS power supply.
	off	The –48V dc power supplies are functioning normally.	
UNIT ON/FAIL	green/ on	• The OTS is functioning normally. • The boot-up was successful. • The OTS is receiving power.	No action required.
	off	The is no power to the OTS.	Supply power to the OTS.
	red/ on	The OTS has detected an internal card failure.	

Requirements

You must be logged into the System Manager as an Admin level user to configure telemetry alarms. The user must connect the telemetry ports of the Optical Trunk Switch to the Maintenance panel of the Optical Metro shelf for the system to adequately report the provisioned Optical Trunk Switch alarms.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 25-2 lists the procedures in this chapter.

Table 25-2
Troubleshooting OTS alarms

Procedure	Page
25-1 OTS—Opt Trunk Sw operating on Standby link	25-4
25-2 OTS—Opt Trunk Sw Primary link failure	25-7
25-3 OTS—Opt Trunk Sw Power AB fail	25-9
25-4 OTS—Opt Trunk Sw Standby link fail	25-10

Procedure 25-1
OTS—Opt Trunk Sw operating on Standby link

Probable cause

This alarm is shown by a green STNBY ACT indicator lamp on the OTS module. This alarm condition occurs when the Rx is being selected from the standby path.

Bidirectional switching from the primary link to the standby link occurs if:

- there is a failure on one or both of the primary links and the standby link is bidirectionally sound
- there has been a force switch command executed from the maintenance interface from the primary link to the standby link and the standby link is bidirectionally sound

Impact

Major, non-service-affecting.

Precautions

CAUTION
Risk of affecting service
When the OTS is in manual mode and you switch to the primary or standby link, the module switches traffic regardless of whether or not that link is operating normally. This switching is not synchronized with the OTS at the other end of the link and can be service-affecting.

Action

Step	Action
1	Determine the operational mode of the OTS.

If	**Then** go to
in Automatic mode	the next step
in Manual mode	change the OTS to Automatic mode. Follow Procedure 6-3 “Operating the Optical Trunk Switch” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.

2	Determine if a force switch command was executed from the maintenance interface or as a result of pressing the SWBK button on the front panel of the OTS module at either site for maintenance purposes.

—continued—

Procedure 25-1 (continued)
OTS—Opt Trunk Sw operating on Standby link

Step	Action
3	**If** the force switch **Then** is necessary for testing or maintenance activities — you have completed this procedure is not necessary — go to the next step
4	In Automatic mode, make sure that the primary link is bidirectionally sound and then select the “trigger switch back to PRI” menu option from the maintenance interface to switch traffic back to the primary link. Follow Procedure 6-3 “Operating the Optical Trunk Switch” in *Provisioning and Operating Procedures*, 323-1701-310.
5	**If** **Then** the alarm clears — you have completed this procedure the alarm remains — go to the next step
6	Use a network topology diagram to help pinpoint the exact location of the fault.
7	**If** **Then** you find the fault location — go to the next step you cannot find the fault location — contact your next level of support
8	Once you have located where the fault is, use an optical power meter to find the exact cause of the fault. Start at a point on the fiber where there is light, and follow the signal path, making power measurements at each connector, until the cause of the fault is found. Use a site fibering diagram to follow the signal flow. Look for a fiber, fiber connector, or optical filter with exceeding amounts of loss. ***Note:*** See Chapter 7 “Link engineering rules” in *Network Planning and Link Engineering*, 323-1701-110 for signal path and component loss values.

—continued—

Procedure 25-1 (continued)
OTS—Opt Trunk Sw operating on Standby link

Step	Action
9	Fix the problem found in step 8. • if it is a damaged, bent, or kinked fiber, then replace it. • if it is a dirty connector refer to Chapter 9 “Cleaning connectors” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201. • if it is a faulty component or filter refer to Chapter 2 “Replacing shelf components” in *Maintenance and Replacement Procedures* in 323-1701-546.
10	**If** / **Then** the alarm clears / you have completed the procedure the alarm remains / contact your next level of support

—end—

Procedure 25-2
OTS—Opt Trunk Sw Primary link failure

Probable cause

This alarm is shown by a red PRI FAIL indicator lamp on the OTS module, indicating that the primary path has failed.

Bidirectional switching from the primary link to the standby link occurs as a result of a failure on one or both of the primary links and the standby link is bidirectionally sound.

Impact

Major, non-service-affecting.

Action

Step	Action

1 Determine the operational mode of the OTS.

If	**Then** go to
in Automatic mode	the next step
in Manual mode	change the OTS to Automatic mode. Follow Procedure 6-3 “Operating the Optical Trunk Switch” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.

2 Use a network topology diagram to help pinpoint the exact location of the fault.

3

If	**Then**
you find the fault location	go to the next step
you cannot find the fault location	contact your next level of support

4 Once you have located where the fault is, use an optical power meter to find the exact cause of the fault. Start at a point on the fiber where there is light, and follow the signal path, making power measurements at each connector, until the cause of the fault is found. Use a site fibering diagram to follow the signal flow. Look for a fiber, fiber connector, or optical filter with exceeding amounts of loss.

Note: See Chapter 7 “Link engineering rules” in *Network Planning and Link Engineering*, 323-1701-110 for signal path and component loss values.

—continued—

Procedure 25-2 (continued)
OTS—Opt Trunk Sw Primary link failure

Step	Action
5	Fix the problem found in step 4. • if it is a damaged, bent, or kinked fiber, then replace it. • if it is a dirty connector refer to Chapter 9 “Cleaning connectors” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201. • if it is a faulty component or filter refer to Chapter 2 “Replacing shelf components” in *Maintenance and Replacement Procedures*, 323-1701-546.

6	**If**	**Then**
	the alarm clears	you have completed the procedure
	the alarm remains	contact your next level of support

—end—

Procedure 25-3
OTS—Opt Trunk Sw Power AB fail

This alarm is shown by a RED STNBY ACT indicator lamp on the OTS module.

This alarm condition occurs when one of the electrical power supplies (A or B) has failed.

Impact

Major, non-service-affecting.

Action

Step	Action	
1	Check if either the A or B power supply is outside the range –40 to –60 V.	
2	**If**	**Then**
	the power supply is outside the acceptable power range	correct the problem. Go to the next step.
	the power supply is within the acceptable power range	contact your next level of support
3	**If**	**Then**
	the alarm clears	you have completed the procedure
	the alarm remains	contact your next level of support

—end—

Procedure 25-4
OTS—Opt Trunk Sw Standby link fail

Probable cause

This alarm is shown by a green STNBY FAIL indicator lamp on the OTS module.

A bidirectional switch from the standby link to the primary link occurs if there is a failure on one or both of the standby links and the primary link is bidirectionally sound.

Impact

Major, non-service-affecting.

Action

Step	Action

1 Determine the operational mode of the OTS.

If	Then go to
in Automatic mode	the next step
in Manual mode	change the OTS to Automatic mode. Follow Procedure 6-3 “Operating the Optical Trunk Switch” in *Provisioning and Operating Procedures*, 323-1701-310. Go to the next step.

2 Use a network topology diagram to help pinpoint the exact location of the fault.

3

If	Then
you find the fault location	go to the next step
you cannot find the fault location	contact your next level of support

4 Once you have located where the fault is, use an optical power meter to find the exact cause of the fault. Start at a point on the fiber where there is light, and follow the signal path, making power measurements at each connector, until the cause of the fault is found. Use a site fibering diagram to follow the signal flow. Look for a fiber, fiber connector, or optical filter with exceeding amounts of loss.

Note: See Chapter 7 “Link engineering rules” in *Network Planning and Link Engineering*, 323-1701-110 for signal path and component loss values.

—continued—

Procedure 25-4 (continued)
OTS—Opt Trunk Sw Standby link fail

Step	Action
5	Fix the problem found in step 4. • if it is a damaged, bent, or kinked fiber, then replace it. • if it is a dirty connector refer to Chapter 9 “Cleaning connectors” in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201. • if it is a faulty component or filter refer to Chapter 2 “Replacing shelf components” in *Maintenance and Replacement Procedures*, 323-1701-546.

6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support

—end—

Clearing DSCM alarms

Use the procedures in this chapter to clear DSCM alarms. Perform the steps in each procedure in the order that they appear. After you clear the alarm, stop the procedure. If the alarm does not clear, consult your next level of technical support.

For a description of the DSCM, see the "DSCMs" chapter in *Hardware Description*, 323-1701-102.

Before you begin

Read "Troubleshooting the Optical Metro 5100/5200" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide,* for detailed information on how to respond to alarm indicators (audible alarms and lamps). The "Alarm description" chapter in Part 1 of the *Trouble Clearing and Alarm Reference Guide* explains events, warnings, and error messages.

Precautions

CAUTION
Risk of equipment damage
Wear a grounded antistatic wrist strap connected to the shelf maintenance panel or antistatic shoe straps when you handle equipment. Make sure you know how to handle electronic components correctly before you begin trouble clearing procedures. You can damage static-sensitive components if you handle them incorrectly.

CAUTION
Risk of shelf malfunction
Avoid using a cellular phone at any Optical Metro 5100/5200 site. You can cause the Optical Metro 5100/5200 equipment to malfunction if you use a cellular phone in proximity to the shelf.

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Procedure list

Table 26-1 lists the procedure in this chapter and indicates whether or not the alarm is masked if the equipment or facility that raises the alarm is out-of-service.

Table 26-1
Procedures for clearing DSCM alarms

Procedure	Page	Alarm is masked if equipment or facility is OOS
26-1 DSCM—Optical Tray Mismatch	26-3	Equipment
26-2 DSCM—Optical Tray Missing	26-6	Equipment

Procedure 26-1
DSCM—Optical Tray Mismatch

Probable cause

The Optical Tray Mismatch alarm becomes active when one of the two following conditions is met:

- the type of DSCM is different from the type of DSCM that is provisioned
- a component other than a DSCM is connected to a port on the maintenance panel or equipment inventory unit (EIU) that is provisioned for a DSCM

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 26-1 (continued)
DSCM—Optical Tray Mismatch

Action

Step	Action
1	Make sure the component connected to the port on the maintenance panel or the EIU is a DSCM.

If	**Then** go to
the connected component is a DSCM and is suppose to be a DSCM	step 4
the connected component is not a DSCM and is supposed to be a DSCM	the next step

2	Remove the component connected to the port that is provisioned for a DSCM.
3	Wait one minute and connect the DSCM to the port on the maintenance panel or EIU.

If	**Then**
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

4	Put the DSCM out of service. In the System Manager Equipment-Inventory screen, right-click on the DSCM and choose the “Modify” option from the pop-up menu.
5	In the State area of the Optical Metro Inventory dialog box, select OOS from the Administrative drop-down list.
6	Click **OK** to close the dialog box. *The Confirm Inventory OOS dialog box appears.*
7	Click **Yes** to confirm the change.

—continued—

Procedure 26-1 (continued)
DSCM—Optical Tray Mismatch

Step	Action
8	In the System Manager Equipment-Inventory screen, right-click on the DSCM you just took OOS, and choose the “Delete” option from the pop-up menu. *A confirmation window appears. Click “Yes”.*
9	Manually provision the DSCM. Follow Procedure 3-25 “Manually provisioning a DSCM” in *Provisioning and Operating Procedures*, 323-1701-310.

If	Then
the alarm clears	you have completed the procedure
the alarm remains	go to the next step

Step	Action
10	Replace the DSCM. Follow Procedure 2-37 “Replacing a DSCM Tray within a DSCM Tray drawer” in *Maintenance and Replacement Procedures*, 323-1701-546.

If	Then
the alarm clears	the removed DSCM has faults. You have completed this procedure.
the alarm remains	the DSCM is not the problem. Replace the original DSCM. Contact your next level of support.

—end—

Procedure 26-2
DSCM—Optical Tray Missing

Probable cause

This alarm becomes active when one of the following conditions occurs:

- the DSCM is not present in the shelf but it is provisioned in the slot
- the DSCM cable is not connected to the port in the maintenance panel
- the DSCM cable is not connected to the port in the equipment inventory unit (EIU)

Impact

Minor, non-service-affecting.

Precautions

CAUTION
Risk of affecting network reliability
Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter "Cleaning connectors" in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, see Procedure 1-1, "Logging into the network" in *Provisioning and Operating Procedures*, 323-1701-310. To view alarms, click on the Fault tab and then click on the Active Alarms tab.

—continued—

Procedure 26-2 (continued)
DSCM—Optical Tray Missing

Action

Step	Action	
1	Make sure the cable connecting the DSCM to the maintenance panel or the EIU is installed in the correct port and is connected properly. Check for loose connections.	
2	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
3	Disconnect the cable from the maintenance panel or EIU and the DSCM wait one minute, and then reconnect the cable.	
4	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
5	Replace the DSCM cable.	
6	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	go to the next step
7	Replace the DSCM. Follow Procedure 2-37 “Replacing a DSCM Tray within a DSCM Tray drawer” in *Maintenance and Replacement Procedures*, 323-1701-546.	
8	**If**	**Then**
	the alarm clears	you have completed this procedure
	the alarm remains	contact your next level of support
		—end—

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Optical Metro 5100/5200

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