



BTI7800 Series Alarm and Troubleshooting Guide

Release

4.5



Modified: 2019-01-25

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BT17800 Series Alarm and Troubleshooting Guide

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About the Documentation

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Documentation and Release Notes

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Documentation Conventions

Table 1 on page xx defines notice icons used in this guide.

Table 1: Notice Icons







Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

Table 2 on page xx defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the configure command: user@host> configure
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> show chassis alarms No alarms currently active
<i>Italic text like this</i>	<ul style="list-style-type: none"> Introduces or emphasizes important new terms. Identifies guide names. Identifies RFC and Internet draft titles. 	<ul style="list-style-type: none"> A policy <i>term</i> is a named structure that defines match conditions and actions. <i>Junos OS CLI User Guide</i> RFC 1997, <i>BGP Communities Attribute</i>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name: [edit] root@# set system domain-name <i>domain-name</i>

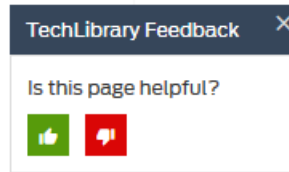
Table 2: Text and Syntax Conventions (continued)

Convention	Description	Examples
Text like this	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none">To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level.The console port is labeled CONSOLE.
< > (angle brackets)	Encloses optional keywords or variables.	stub <default-metric <i>metric</i>>;
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	broadcast multicast (<i>string1</i> <i>string2</i> <i>string3</i>)
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[] (square brackets)	Encloses a variable for which you can substitute one or more values.	community name members [<i>community-ids</i>]
Indentation and braces ({ })	Identifies a level in the configuration hierarchy.	<pre>[edit] routing-options { static { route default { nexthop <i>address</i>; retain; } } }</pre>
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
GUI Conventions		
Bold text like this	Represents graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none">In the Logical Interfaces box, select All Interfaces.To cancel the configuration, click Cancel.
> (bold right angle bracket)	Separates levels in a hierarchy of menu selections.	In the configuration editor hierarchy, select Protocols>Ospf .

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- Click the thumbs-down icon if the information on the page was not helpful to you or if you have suggestions for improvement, and use the pop-up form to provide feedback.
- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable).

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- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <https://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <https://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <https://www.juniper.net/customers/support/>
- Search for known bugs: <https://prsearch.juniper.net/>
- Find product documentation: <https://www.juniper.net/documentation/>
- Find solutions and answer questions using our Knowledge Base: <https://kb.juniper.net/>
- Download the latest versions of software and review release notes: <https://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://kb.juniper.net/InfoCenter/>

- Join and participate in the Juniper Networks Community Forum:
<https://www.juniper.net/company/communities/>
- Create a service request online: <https://myjuniper.juniper.net>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://entitlementsearch.juniper.net/entitlementsearch/>

Creating a Service Request with JTAC

You can create a service request with JTAC on the Web or by telephone.

- Visit <https://myjuniper.juniper.net>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <https://support.juniper.net/support/requesting-support/>.

CHAPTER 1

Fault Monitoring and Reporting

- [Configuring Fault Monitoring and Reporting on page 25](#)
- [Fault Masking and Hierarchies on page 27](#)
- [Maintenance Signaling on page 35](#)

Configuring Fault Monitoring and Reporting

Fault monitoring is enabled by default for all managed entities and is conducted at the physical layer, covering optical signals and channel-specific transceiver faults, and at the protocol layer with specific fault points defined for all supported protocols. Monitoring is also conducted on supporting BT17800 equipment, including the various sensors located throughout the chassis and on the modules.

You can enable or disable the reporting of a fault. When reporting is enabled and fault masking does not occur, the fault is reported as either an alarm (alarmed) or a condition (not alarmed). An alarm generates a notification as the fault becomes active. A condition does not generate a notification and is typically used to report lower-severity faults.

You can also configure whether a fault is an alarm or a condition and change its default severity. For more information, see the description of the **conditions** CLI command in the *BT17800 Command Line Reference Guide*.

Fault Reporting

When reporting is enabled for a fault that becomes active on a managed entity, the reporting behavior of that fault depends on the administrative status (enabled or disabled) of the entity, as described in the following table.

Table 3: Entity Administrative Status and Fault Reporting

Status	Fault-Reporting Behavior
Enabled	<p>When a fault with critical, major, or minor severity (see Table 4 on page 26) becomes active, it is reported with an alarm notification. When the fault is no longer active, a condition-clear alarm is generated.</p> <p>Polling retrieves active faults on enabled entities. The CLI command show conditions retrieves a list of all active faults (both alarms and conditions), and the command show alarms retrieves a list of all active alarms.</p>

Table 3: Entity Administrative Status and Fault Reporting (continued)

Status	Fault-Reporting Behavior
Disabled	When a fault with critical, major, or minor severity either becomes active or is cleared, no reporting is provided. Polling results retrieved with either show conditions or show alarms do not include any active faults (alarms or conditions) on disabled entities.

To retrieve alarms and conditions, use the **show alarms** and **show conditions** CLI commands, respectively. For both alarms and conditions, the information retrieved shows the name of the entity affected, the fault code, the time the fault was reported, the fault severity, the impact on service, and the name of the fault in plain language.

Figure 1: Alarm Information Retrieved Using the CLI

```

bti7800# show alarms
Entity-Name      Code      Time-Stamp      Severity      Service Affecting      Description
-----
cmnn:1/A         firmUpgrdReqd  2016-09-15T11:22:20-04:00  major        false                 Firmware Upgrade Required
cmnn:1/B         firmUpgrdReqd  2016-09-15T11:17:49-04:00  major        false                 Firmware Upgrade Required
ila:1/5         eqptMiss      2016-09-15T11:17:17-04:00  critical      true                  Equipment Missing
ila:1/6         eqptMiss      2016-09-15T11:17:17-04:00  critical      true                  Equipment Missing
roadm:1/3        eqptMiss      2016-09-15T11:17:17-04:00  critical      true                  Equipment Missing
roadm:1/4        eqptMiss      2016-09-15T11:17:17-04:00  critical      true                  Equipment Missing
10ge:1/1/2/1     los          2016-09-15T11:29:14-04:00  critical      true                  Loss of Signal
och:1/2/0/C1/chn150  loLightRx    2016-09-18T03:52:35-04:00  major        true                  Loss of light, receive
och:1/7/0/C1/chn150  loLightRx    2016-09-15T11:30:03-04:00  major        true                  Loss of light, receive

Total : 9, Critical: 5, Major: 4, Minor: 0

```

Fault Severity

Each fault is associated with one of the default severity types listed in the following table.

Table 4: Fault Severities

Severity	Description
Critical	A failure that is likely causing serious loss or interruption of traffic.
Major	A failure that could potentially lead to loss or interruption of traffic.
Minor	A failure that does not significantly affect traffic.
Not alarmed	A fault that results in a standing condition, not an alarm.
Not reported	A non-alarmed fault that is discovered only when standing conditions are polled.

Notifications for raise and clear events are never generated for faults with Not Reported (NR) severity, and active occurrences can be discovered only when the active conditions list is polled.

Fault Impact on Service

In addition to fault severity, reporting indicates whether a fault impacts service (service-affecting true) or not (service-affecting false). Depending on the entity type, the operational status of the entity is reported as **down** when a fault is service-affecting.

Fault Masking and Hierarchies

Fault masking occurs when a service-affecting alarm or condition raised against a monitored entity suppresses the reporting of other alarms or conditions that are raised against the same entity. A fault that masks another fault is in a higher position in the fault hierarchy for a monitored entity and indicates either a higher priority fault or a fault that more accurately identifies the source of a problem. This means that when a fault that masks other faults is cleared, each masked fault will be reported if it was not cleared by the resolution of the masking fault.

The following sections list faults common to specific monitored entities and include fault-hierarchy flow charts that illustrate the masking relationships among those faults.

- [Equipment Fault Hierarchy on page 27](#)
- [Environment Fault Hierarchy on page 28](#)
- [Common Fault Hierarchy - OTN and CBR Ports on page 29](#)
- [OTN Interface Fault Hierarchy on page 30](#)
- [Ethernet Interface Fault Hierarchy on page 31](#)
- [OC192, WAN PHY Over OC192 Interface Fault Hierarchy on page 31](#)
- [STM64, WAN PHY Over STM64 Interface Fault Hierarchy on page 32](#)
- [Fibre Channel Interface Fault Hierarchy on page 32](#)
- [DOL Port Fault Hierarchy on page 33](#)
- [DOL OSC Fault Hierarchy on page 33](#)
- [DOL OMS Fault Hierarchy on page 34](#)
- [DOL OCH Fault Hierarchy on page 34](#)
- [Terminal Amplifier Port Fault Hierarchy on page 35](#)

Equipment Fault Hierarchy

Table 5: Equipment Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"EqptMiss" on page 76	<pre> graph LR EqptMiss --> EqptMism EqptMism --> EqptComm EqptComm --> EqptFail EqptFail --> EqptDgrd </pre> <p>Higher priority faults mask faults connected on the right</p>
"EqptMism" on page 74	
"EqptComm" on page 69	
"EqptFail" on page 72	
"EqptDgrd" on page 70	

Environment Fault Hierarchy

Table 6: Environment Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	<pre> graph LR EF[Equipment Fault] --- ECHTh[EnvCurrentHighTh] EF --- ECLTh[EnvCurrentLowTh] EF --- ETPHTh[EnvTempHighTh] EF --- ETLTh[EnvTempLowTh] EF --- EVHTh[EnvVoltHighTh] EF --- EVLTh[EnvVoltLowTh] </pre> <p>Higher priority faults mask faults connected on the right</p>
"EnvCurrentHighTh" on page 57	
"EnvCurrentLowTh" on page 58	
"EnvTempHighTh" on page 60	
"EnvTempLowTh" on page 62	
"EnvVoltHighTh" on page 64	
"EnvVoltLowTh" on page 66	

Common Fault Hierarchy - OTN and CBR Ports

Table 7: Common Fault Hierarchy - OTN and CBR Ports

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	<pre> graph LR EF[Equipment Fault] --- LOS EF --- LPBK EF --- PRBS EF --- LaserFail EF --- LaserTempHighTh EF --- LaserTempLowTh EF --- ModTempShutdown LOS --- OprHighTh LOS --- OprLowTh LPBK --- LoLock LoLock --- LOF LOF --- PreFecBerTh LOF --- TransmitterDegrade LOF --- ProtocolFaults[Protocol Faults] ModTempShutdown --- OptHighTh ModTempShutdown --- OptLowTh ModTempShutdown --- ModTempHighTh ModTempShutdown --- ModTempLowTh </pre> <p>Higher priority faults mask faults connected on the right</p>
"LOS" on page 113	
"LPBK" on page 119	
"PRBS" on page 161	
"LaserTempHighTh" on page 95	
"LaserTempLowTh" on page 98	
"LaserFail" on page 92	
"ModTempShutdown" on page 124	
"OptHighTh" on page 147	
"OprLowTh" on page 145	
"LoLock" on page 106	
"LOF" on page 104	
"PreFecBerTh" on page 163	
"TransmitterDegrade" on page 176	
Protocol Faults:	
<ul style="list-style-type: none"> OTN Interface Fault Hierarchy on page 30 Ethernet Interface Fault Hierarchy on page 31 OC192, WAN PHY Over OC192 Interface Fault Hierarchy on page 31 STM64, WAN PHY Over STM64 Interface Fault Hierarchy on page 32 	
"OptHighTh" on page 147	
"OptLowTh" on page 150	
"ModTempHighTh" on page 122	
"ModTempLowTh" on page 123	

OTN Interface Fault Hierarchy



NOTE: In the OTN fault hierarchy, a service-affecting fault raised against an OTN OTU interface will mask all faults raised against each OTU ODU interface it contains.

Table 8: OTN Interface Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	<p>The diagram illustrates the OTN fault hierarchy. It starts with 'Equipment Fault' on the left. A bracket above the flow from 'Equipment Fault' to 'TIM' is labeled 'OTN OTU Faults'. Another bracket above the flow from 'TIM' to 'PyldMism' is labeled 'OTN ODU Faults'. The sequence of faults is: Equipment Fault → LOS → LOF → (SD, LOM, BDI) → TIM → ODU-AIS → LCK → OCI → (OduMism, OdtgMism, PyldMism). A large blue arrow points from left to right across the diagram with the text 'Higher priority faults mask faults connected on the right'. To the right of the final faults, 'Release 4.2' is noted twice.</p>
"LOS" on page 113	
"LOF" on page 104	
"SD" on page 171	
"LOM" on page 112	
"BDI" on page 53	
"TIM" on page 172	
"ODU-AIS" on page 137	
"LCK" on page 100	
"OCI" on page 134	
"OduMism" on page 138	
"OdtgMism" on page 136	
"PyldMism" on page 164	

Ethernet Interface Fault Hierarchy

Table 9: Ethernet Interface Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	<pre> graph LR EF[Equipment Fault] --> LOS[LOS] LOS --> LoSync[LoSync] LoSync --> HighBer[HighBer] LoSync --> LF[LF] LF --> RF[RF] </pre> <p>Higher priority faults mask faults connected on the right</p>
"LOS" on page 113	
"LoSync" on page 118	
"HighBer" on page 87	
"LF" on page 102	
"RF" on page 167	

OC192, WAN PHY Over OC192 Interface Fault Hierarchy

Table 10: OC192, WAN PHY Over OC192 Interface Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	<pre> graph LR EF[Equipment Fault] --> LOS[LOS] LOS --> LOF[LOF] LOF --> SD[SD] LOF --> TIM[TIM] LOF --> AISL[AIS-L] AISL --> RDI_L[RDI-L] </pre> <p>Higher priority faults mask faults connected on the right</p>
"LOS" on page 113	
"LOF" on page 104	
"SD" on page 171	
"TIM" on page 172	
"AIS-L" on page 47	
"RDI-L" on page 166	

STM64, WAN PHY Over STM64 Interface Fault Hierarchy

Table 11: STM64, WAN PHY Over STM64 Interface Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	<pre> graph LR EF[Equipment Fault] --> LOS[LOS] LOS --> LOF[LOF] LOF --> SD[SD] LOF --> TIM[TIM] LOF --> MS-AIS[MS-AIS] MS-AIS --> MS-RDI[MS-RDI] </pre> <p>Higher priority faults mask faults connected on the right</p>
"LOS" on page 113	
"LOF" on page 104	
"SD" on page 171	
"TIM" on page 172	
"MS-AIS" on page 126	
"MS-RDI" on page 127	

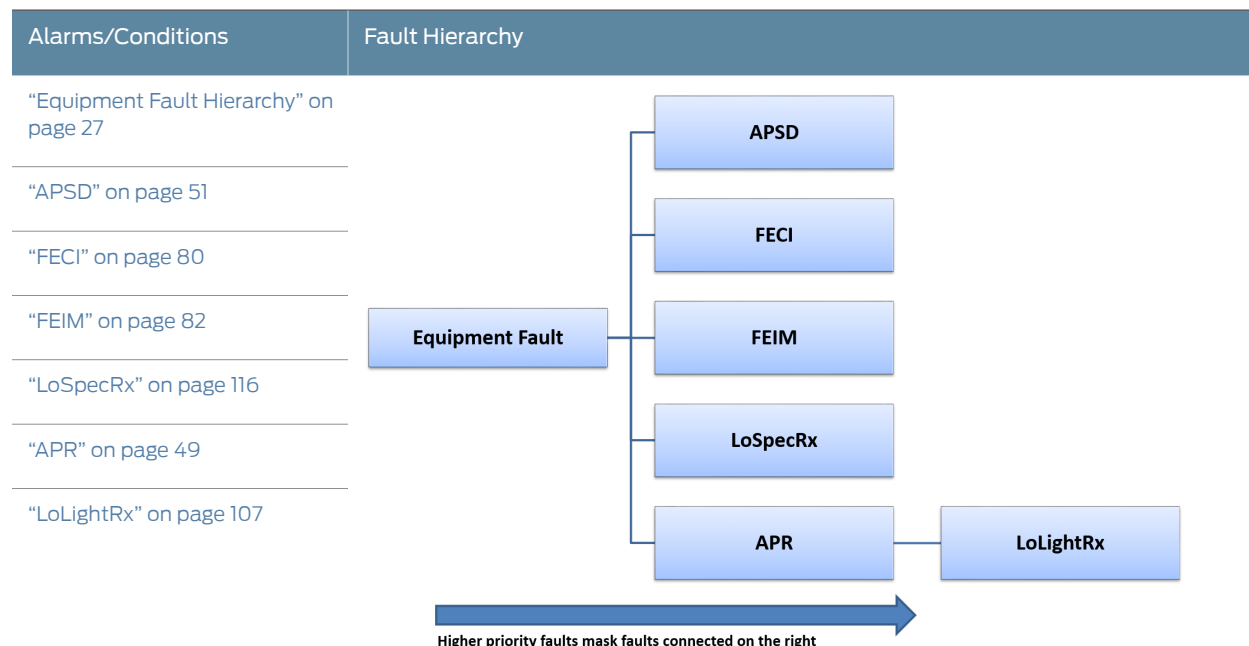
Fibre Channel Interface Fault Hierarchy

Table 12: Fibre Channel Interface Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	<pre> graph LR EF[Equipment Fault] --> LOS[LOS] LOS --> LoSync[LoSync] LoSync --> HighBer[HighBer] </pre>
"LOS" on page 113	
"LoSync" on page 118	
"HighBer" on page 87	

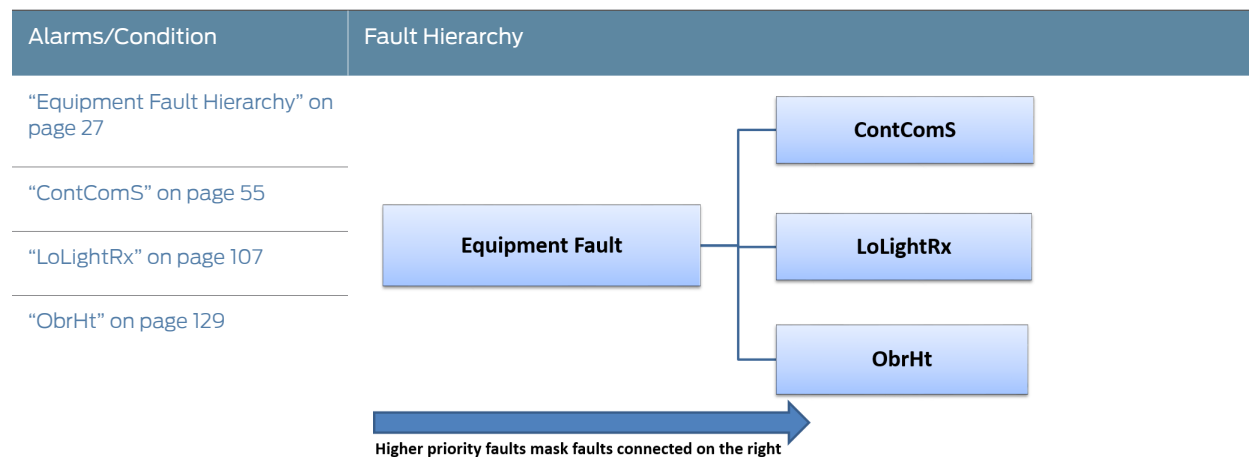
DOL Port Fault Hierarchy

Table 13: DOL Port Fault Hierarchy



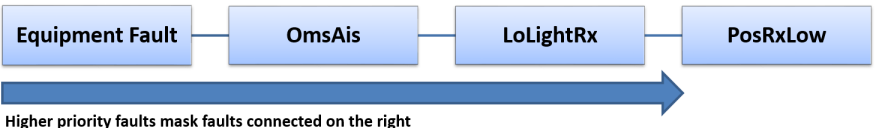
DOL OSC Fault Hierarchy

Table 14: DOL OSC Fault Hierarchy



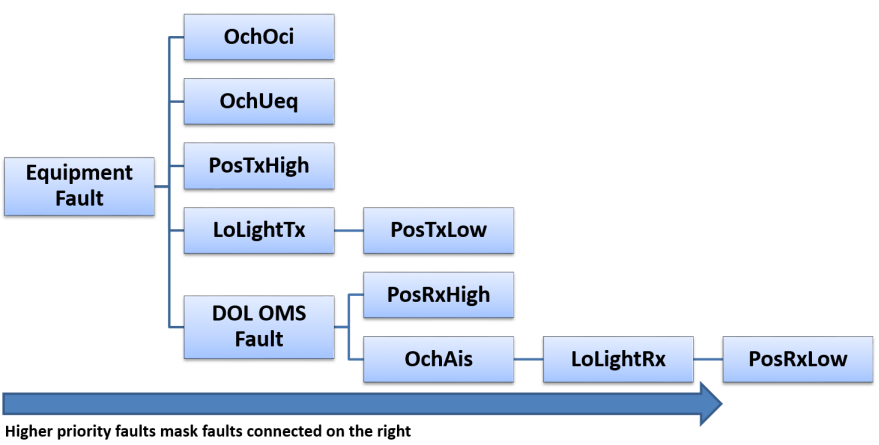
DOL OMS Fault Hierarchy

Table 15: DOL OMS Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	Equipment Fault — OmsAis — LoLightRx — PosRxLow
"OmsAis" on page 140	 <p>Higher priority faults mask faults connected on the right</p>
"LoLightRx" on page 107	
"PosRxLow" on page 156	

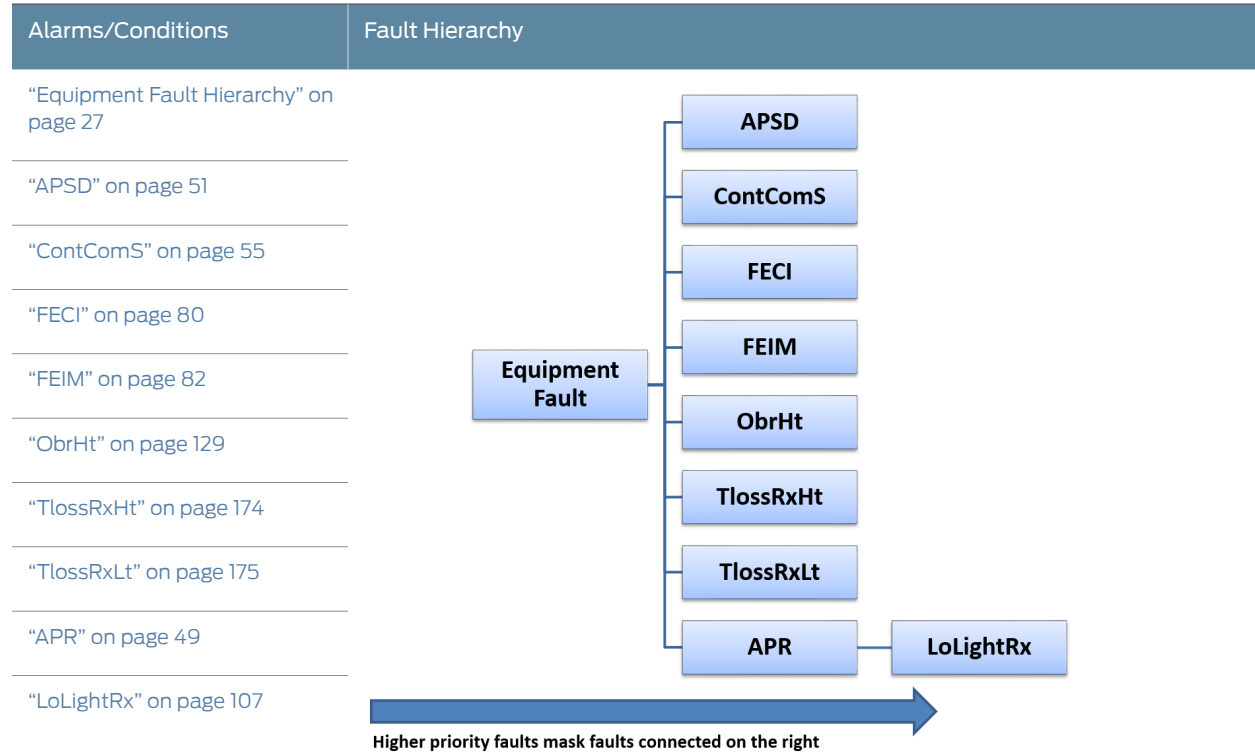
DOL OCH Fault Hierarchy

Table 16: DOL OCH Fault Hierarchy

Alarms/Conditions	Fault Hierarchy
"Equipment Fault Hierarchy" on page 27	 <p>Higher priority faults mask faults connected on the right</p>
"OchOci" on page 132	
"OchUeq" on page 133	
"PosTxHigh" on page 158	
"LoLightTx" on page 111	
"DOL OMS Fault Hierarchy" on page 34	
"PosTxLow" on page 159	
"PosRxHigh" on page 154	
"OchAis" on page 130	
"LoLightRx" on page 107	
"PosRxLow" on page 156	

Terminal Amplifier Port Fault Hierarchy

Table 17: Terminal Amplifier Port Fault Hierarchy



Maintenance Signaling

When normal traffic cannot be transmitted from a port, for example, when a received signal is in a failed state or when a port is administratively disabled and traffic is disrupted, the BT17800 Series will usually forward a maintenance signal from the transmit port to indicate to the downstream node that a local outage exists. For all interface protocols, the default maintenance signal ([Table 18 on page 35](#)) enables the receiving node to conclude that the link to the adjacent upstream node is intact.

Table 18: Default Maintenance Signals - Interface Protocols

Protocol	Default Maintenance Signal
OTN OTU	"ODU-AIS" on page 137
OTN ODU	"ODU-AIS" on page 137
Ethernet	"LF" on page 102
OC192, WAN PHY over OC192	"AIS-L" on page 47
STM64, WAN PHY over STM64	"MS-AIS" on page 126

CHAPTER 2

Alarms and Conditions

- [Alarm and Condition Summary on page 39](#)
- [AirFilterAbsence on page 46](#)
- [AIS–L on page 47](#)
- [APR on page 49](#)
- [APSD on page 51](#)
- [BDI on page 53](#)
- [CfgFail on page 54](#)
- [ContComS on page 55](#)
- [DiskHighUsage on page 56](#)
- [EnvCurrentHighTh on page 57](#)
- [EnvCurrentLowTh on page 58](#)
- [EnvTempHighTh on page 60](#)
- [EnvTempLowTh on page 62](#)
- [EnvVoltHighTh on page 64](#)
- [EnvVoltLowTh on page 66](#)
- [EqptBrownout on page 68](#)
- [EqptComm on page 69](#)
- [EqptDgrd on page 70](#)
- [EqptFail on page 72](#)
- [EqptMism on page 74](#)
- [EqptMiss on page 76](#)
- [FanSpeedLowTh on page 78](#)
- [FECl on page 80](#)
- [FEIM on page 82](#)
- [FirmUpgrdInProg on page 84](#)
- [FirmUpgrdFail on page 85](#)
- [FirmUpgrdReqd on page 86](#)
- [Forced on page 87](#)

- [HighBer on page 87](#)
- [InvUnknown on page 89](#)
- [InventoryUnsupp on page 90](#)
- [IsisAdjDown on page 91](#)
- [LaserFail on page 92](#)
- [LaserTempHighTh on page 95](#)
- [LaserTempLowTh on page 98](#)
- [LCK on page 100](#)
- [LF on page 102](#)
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- [Lolck on page 106](#)
- [LoLightRx on page 107](#)
- [LoLightTx on page 111](#)
- [LOM on page 112](#)
- [LOS on page 113](#)
- [LoSpecRx on page 116](#)
- [LoSync on page 118](#)
- [LPBK on page 119](#)
- [MemHighUsage on page 121](#)
- [ModTempHighTh on page 122](#)
- [ModTempLowTh on page 123](#)
- [ModTempShutdown on page 124](#)
- [MS-AIS on page 126](#)
- [MS-RDI on page 127](#)
- [NonCoLocatedController on page 128](#)
- [ObrHt on page 129](#)
- [OchAis on page 130](#)
- [OchOci on page 132](#)
- [OchUeq on page 133](#)
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- [OdtgMism on page 136](#)
- [ODU-AIS on page 137](#)
- [OduMism on page 138](#)
- [OmsAis on page 140](#)
- [OneCableDisconnected on page 141](#)
- [OprHighTh on page 142](#)

- [OprLowTh](#) on page 145
- [OptHighTh](#) on page 147
- [OptLowTh](#) on page 150
- [OTU-AIS](#) on page 152
- [PartitionFault](#) on page 153
- [PosRxHigh](#) on page 154
- [PosRxLow](#) on page 156
- [PosTxHigh](#) on page 158
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- [ScmNmiDown](#) on page 169
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- [TlossRxHt](#) on page 174
- [TlossRxLt](#) on page 175
- [TransmitterDegrade](#) on page 176
- [UPGRD](#) on page 179

Alarm and Condition Summary

Table 19: BT17800 Alarms and Conditions

Code	Entities Affected	Default Severity	Service Affecting
"AirFilterAbsence" on page 46 (Air Filter Absent)	BT17814 chassis	Major	No (false)
"AIS-L" on page 47 (Alarm Indication Signal - Line, SONET)	SONET interfaces	Not alarmed	Yes (true)
"APR" on page 49 (Automatic Power Reduction)	<ul style="list-style-type: none"> • DOL ports • Terminal amplifier client ports • Terminal amplifier DCM ports 	Critical	Yes (true)

Table 19: BT17800 Alarms and Conditions (continued)

Code	Entities Affected	Default Severity	Service Affecting
"APSD" on page 51 (Automatic Power Shutdown)	<ul style="list-style-type: none"> DOL ports Terminal amplifier line ports 	Critical	Yes (true)
"BDI" on page 53 (Backward Defect Indication, OTN)	OTN OTU interfaces	Not alarmed	No (false)
"CfgFail" on page 54	UFM6	Not alarmed	Yes (true)
"ContComS" on page 55 (Control Communications Failure, Span Section)	<ul style="list-style-type: none"> DOL optical service channels Terminal amplifier Optical Supervisory Channels 	Major	Yes (true)
"DiskHighUsage" on page 56 (Disk High Usage)	<ul style="list-style-type: none"> Management modules Traffic modules 	Major	No (false)
"EnvCurrentHighTh" on page 57 (Current Above High Temperature)	AC PEM	Major	Yes (true)
"EnvCurrentLowTh" on page 58 (Current Below Low Temperature)	AC PEM	Major	Yes (true)
"EnvTempHighTh" on page 60 (Environment Temperature Above High Threshold)	<ul style="list-style-type: none"> PEMs Fan modules Management modules Traffic modules 	Major	Yes (true)
"EnvTempLowTh" on page 62 (Environment Temperature Above Low Threshold)	<ul style="list-style-type: none"> PEMs Fan modules Management modules Traffic modules 	Not alarmed	Yes (true)
"EnvVoltHighTh" on page 64 (Environment Voltage Above High Threshold)	<ul style="list-style-type: none"> AC PEMs Traffic modules 	Major	Yes (true)
"EnvVoltLowTh" on page 66 (Environment Voltage Below Low Threshold)	<ul style="list-style-type: none"> AC PEMs Traffic modules 	Major	Yes (true)
"EqptBrownout" on page 68 (Equipment Brownout)	UFM6 modules	Major	Yes (true)
"EqptComm" on page 69 (Equipment Management Communications Failure)	Traffic modules	Major	Depends on cause of alarm
"EqptDgrd" on page 70 (Equipment Degrade)	<ul style="list-style-type: none"> UFM modules BIC modules 	Major	Yes (true)

Table 19: BT17800 Alarms and Conditions (continued)

Code	Entities Affected	Default Severity	Service Affecting
"EqptFail" on page 72 (Equipment Failure)	<ul style="list-style-type: none"> Equipment Management modules Traffic modules Pluggable transceivers 	Critical	Yes (true)
"EqptMism" on page 74 (Equipment Mismatch)	<ul style="list-style-type: none"> Equipment Management modules Traffic modules Pluggable transceivers 	Critical	Yes (true)
"EqptMiss" on page 76 (Equipment Missing)	<ul style="list-style-type: none"> Equipment Management modules Traffic modules Pluggable transceivers 	Critical	Yes (true)
"FanSpeedLowTh" on page 78 (Fan Speed Below Threshold)	Fan module	Major	Yes (true)
"FECl" on page 80 (Far-End Node Configuration Mismatch)	<ul style="list-style-type: none"> DOL ports Terminal amplifier Optical Supervisory Channels 	Major	Yes (true)
"FEIM" on page 82 (Far-End Node Identification Mismatch)	<ul style="list-style-type: none"> DOL ports Terminal amplifier Optical Supervisory Channels 	Major	Yes (true)
"FirmUpgrdInProg" on page 84 (Firmware Upgrade in Progress)	<ul style="list-style-type: none"> Management modules UFM6 modules UFM6 dual-mode ports 	Not alarmed	No (false)
"FirmUpgrdFail" on page 85 (Firmware Upgrade Failed)	<ul style="list-style-type: none"> Management modules UFM6 dual-mode ports 	Major	No (false)
"FirmUpgrdReqd" on page 86 (Firmware Upgrade Required)	<ul style="list-style-type: none"> Management modules Chassis 	Major	No (false)
"Forced" on page 87 (Forced Protection Switch Active)	Wavelength protection ports	Not alarmed	No (false)
"HighBer" on page 87 (High Bit-Error Rate)	<ul style="list-style-type: none"> Ethernet interfaces Fibre channel interfaces 	Major	No (false)
"InvUnknown" on page 89 (Inventory Unknown)	Pluggable transceivers	Major	No (false)
"InventoryUnsupp" on page 90 (Inventory Unsupported)	QSFP28 pluggable transceivers	Major	No (false)

Table 19: BT17800 Alarms and Conditions (continued)

Code	Entities Affected	Default Severity	Service Affecting
"IsisAdjDown" on page 91 (IS-IS AdjacencyDown:)	<ul style="list-style-type: none"> • Management modules • DOL optical service channels 	Major	Yes (true)
"LaserFail" on page 92 (Laser Fail)	<ul style="list-style-type: none"> • Optical channel interfaces • OTN OTU interfaces • Ethernet interfaces • SONET/SDH interfaces • Wavelength channels 	Critical	Yes (true)
"LaserTempHighTh" on page 95 (Laser Temperature Above High Temperature Threshold)	<ul style="list-style-type: none"> • Optical channel interfaces • OTN OTU interfaces • Ethernet interfaces • SONET/SDH interfaces • Wavelength channels 	Major	No (false)
"LaserTempLowTh" on page 98 (Laser Temperature Below Low Temperature Threshold)	<ul style="list-style-type: none"> • Optical channel interfaces • OTN OTU interfaces • Ethernet interfaces • SONET/SDH interfaces • Wavelength channels 	Major	No (false)
"LCK" on page 100 (Locked, ODU)	OTN ODU interfaces	Critical	Yes (true)
"LF" on page 102 (Local Fault)	Ethernet interfaces	Not alarmed	No (false)
"Lockout" on page 103 (Lockout of Protection)	Wavelength protection ports	Not alarmed	No (false)
"LOF" on page 104 (Loss of Frame)	<ul style="list-style-type: none"> • Optical channel interfaces • OTN OTU interfaces • SONET/SDH interfaces 	Critical	Yes (true)
"Lolck" on page 106 (Loss of Lock)	Optical channel interfaces	Critical	Yes (true)
"LoLightRx" on page 107 (Loss of Light, Receive)	<ul style="list-style-type: none"> • DOL PRE ports • DOL optical service channels • DOL optical multiplex sections • DOL optical channels • Wavelength protection ports • Terminal amplifier ports 	Critical	Yes (true)

Table 19: BT17800 Alarms and Conditions (continued)

Code	Entities Affected	Default Severity	Service Affecting
"LoLightTx" on page 111 (Loss of Light, Transmit)	DOL optical channels	Major	Yes (true)
"LOM" on page 112 (Loss of Multiframe)	OTN OTU interfaces	Critical	Yes (true)
"LOS" on page 113 (Loss of Signal)	<ul style="list-style-type: none"> Optical channel interfaces OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces Wavelength channels Fibre channel interfaces 	Critical	Yes (true)
"LoSpecRx" on page 116 (Loss out of Specification, Receive)	DOL ports	Critical	Yes (true)
"LoSync" on page 118 (Loss of Synchronization)	<ul style="list-style-type: none"> Ethernet interfaces Fibre channel interfaces 	Critical	Yes (true)
"LPBK" on page 119 (Loopback Operated)	<ul style="list-style-type: none"> OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces 	Not alarmed	No (false)
"MemHighUsage" on page 121 (Memory High Usage)	<ul style="list-style-type: none"> Management modules Traffic modules 	Major	No (false)
"ModTempHighTh" on page 122 (Module Temperature Above High Threshold)	<ul style="list-style-type: none"> 400G Coherent MSA XCVR OTN OTU4 line interfaces 	Major	No (false)
"ModTempLowTh" on page 123 (Module Temperature Below Low Threshold)	<ul style="list-style-type: none"> 400G Coherent MSA XCVR OTN OTU4 line interfaces 	Major	No (false)
"ModTempShutdown" on page 124 (Module Temperature Shutdown)	<ul style="list-style-type: none"> 400G Coherent MSA XCVR OTN OTU4 line interfaces 	Critical	Yes (true)
"MS-AIS" on page 126 (Multiplex Section Alarm Indication Signal, SDH)	SDH interfaces	Not alarmed	Yes (true)
"MS-RDI" on page 127 (Multiplex Section Remote Defect Indication, SDH)	SDH interfaces	Not alarmed	No (false)
"NonCoLocatedController" on page 128 (Controllers are in Different Chassis)	<ul style="list-style-type: none"> BT17814 chassis BT17802 chassis 	Critical	Yes (true)

Table 19: BT17800 Alarms and Conditions (continued)

Code	Entities Affected	Default Severity	Service Affecting
"ObrHt" on page 129 (Optical Backreflection High Threshold Exceeded)	<ul style="list-style-type: none"> DOL optical service channels Terminal amplifier Optical Supervisory Channels 	Minor	Yes (true)
"OchAis" on page 130 (Alarm Indication Signal, OCH)	DOL optical channels	Not alarmed	Yes (true)
"OchOci" on page 132 (Open Connection Indication, OCH)	DOL optical channels	Critical	Yes (true)
"OchUeq" on page 133 (OCH Unequipped)	DOL optical channels	Critical	Yes (true)
"OCI" on page 134 (Open Connection Indication, ODU)	OTN ODU interfaces	Critical	Yes (true)
"ODU-AIS" on page 137 (ODU Alarm Indication Signal)	OTN interfaces	Not alarmed	Yes (true)
"OmsAis" on page 140 (Alarm Indication Signal, OMS)	DOL optical multiplex sections	Not alarmed	Yes (true)
"OneCableDisconnected" on page 141 (One Multi-Chassis Cable Disconnected)	<ul style="list-style-type: none"> BT17814 chassis BT17802 chassis 	Major	Yes (true)
"OprHighTh" on page 142 (Optical Power Received Above High Threshold)	<ul style="list-style-type: none"> Optical channel interfaces OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces Wavelength channels 	Major	No (false)
"OprLowTh" on page 145 (Optical Power Received Below Low Threshold)	<ul style="list-style-type: none"> Optical channel interfaces OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces Wavelength channels 	Major	No (false)
"OptHighTh" on page 147 (Optical Power Transmitted Above High Threshold)	<ul style="list-style-type: none"> Optical channel interfaces OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces Wavelength channels 	Major	No (false)

Table 19: BT17800 Alarms and Conditions (continued)

Code	Entities Affected	Default Severity	Service Affecting
"OptLowTh" on page 150 (Optical Power Transmitted Below Low Threshold)	<ul style="list-style-type: none"> Optical channel interfaces OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces Wavelength channels 	Major	No (false)
"OTU-AIS" on page 152 (OTU Alarm Indication Signal)	OTN OTU interfaces	Not alarmed	Yes (false)
"PartitionFault" on page 153 (Disk Partition Fault Detected)	<ul style="list-style-type: none"> Management modules Traffic modules 	Major	No (false)
"PosRxHigh" on page 154 (Receive Power Out of Specification, High)	DOL optical channels	Minor	Yes (true)
"PosRxLow" on page 156 (Receive Power Out of Specification, Low)	<ul style="list-style-type: none"> DOL optical multiplex sections DOL optical channels 	Major	Yes (true)
"PosTxHigh" on page 158 (Transmit Power Out of Specification, High)	DOL optical channels	Critical	Yes (true)
"PosTxLow" on page 159 (Transmit Power Out of Specification, Low)	DOL optical channels	Critical	Yes (true)
"PowerAbsent" on page 160 (No Power Available)	PEM	Critical	Yes (true)
"PRBS" on page 161 (PRBS Test Activated)	<ul style="list-style-type: none"> OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces 	Not alarmed	No (false)
"PreFecBerTh" on page 163 (Pre-FEC Bit Error Rate Above High Threshold)	Optical channel interfaces	Minor	No (false)
"PyldMism" on page 164 (Payload Mismatch)	OTN ODU interfaces	Critical	Yes (true)
"RDI-L" on page 166 (Remote Defect Indication, Line)	SONET interfaces	Not alarmed	No (false)
"RF" on page 167 (Remote Fault)	Ethernet interfaces	Not alarmed	No (false)
"ScmNmiDown" on page 169 (System Controller Management Interface Down)	Management modules	Major	Yes (true)
"ScmNoNmConn" on page 170 (No Network Management Connectivity on SCM)	Management modules	Critical	Yes (true)

Table 19: BT17800 Alarms and Conditions (continued)

Code	Entities Affected	Default Severity	Service Affecting
"SD" on page 171 (Signal Degrade)	<ul style="list-style-type: none"> OTN OTU interfaces SONET/SDH interfaces 	Minor	No (false)
"TIM" on page 172 (Trace Identifier Mismatch)	<ul style="list-style-type: none"> OTN OTU interfaces SONET/SDH interfaces 	Critical	No (false)
"TlossRxHt" on page 174 (Loss Above High Threshold, Receive)	Terminal amplifier line ports	Minor	Yes (true)
"TlossRxLt" on page 175 (Loss Below Low Threshold, Receive)	Terminal amplifier line ports	Minor	Yes (true)
"TransmitterDegrade" on page 176 (Transmitter Degrade)	<ul style="list-style-type: none"> Optical channel interfaces OTU4 interfaces 	Major	No (false)
"UPGRD" on page 179 (Upgrade in Progress)	<ul style="list-style-type: none"> Management modules Traffic modules 	Minor	Yes (true)

AirFilterAbsence

Table 20: Alarm Details

Parameter	Description
Code	AirFilterAbsence
Description/Cause	Air Filter Absent: The air filter required for operation of the chassis has not been detected in the chassis.
Entities Affected	BT17800 chassis (see table below). NOTE: This alarm is supported on the BT17814 chassis only.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See "Clearing an AirFilterAbsence Alarm" on page 47.
Related Fault Hierarchy	—

Table 21: BT17800 Chassis

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
chassis:<1 2>	BT17814	See equipment specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Clearing an AirFilterAbsence Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before installing equipment in the chassis.

1. Confirm whether an air filter is present in the chassis.
 - If an air filter is present, go to 2.
 - If an air filter is not present, go to 3.
2. Ensure that the air filter is properly seated in the chassis, and then go to 4.
3. Install an air filter in the chassis.
4. Check for alarms on the chassis.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

AIS-L

Table 22: Condition Details

Parameter	Description
Code	ais-l

Table 22: Condition Details (continued)

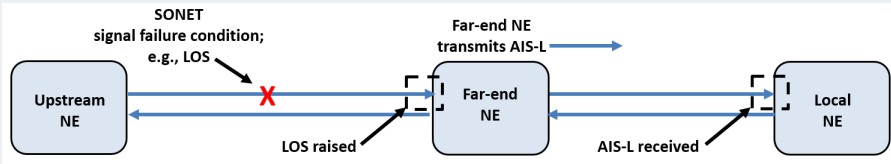
Parameter	Description
Description	<p>Alarm Indication Signal–Line (AIS-L), SONET: The local interface has received an AIS-L signal from the NE at the far end of the fiber, indicating that no SONET signal is being transmitted upstream of (and toward) the local NE. See also “Maintenance Signaling” on page 35.</p> 
Entities Affected	SONET (OC192, WAN PHY OC192) interfaces (see table below).
Default Severity	Not alarmed.
Service Affecting	Yes (true).
Condition Clearing	See “Clearing an AIS-L Condition” on page 48.
Related Fault Hierarchy	See “OC192, WAN PHY Over OC192 Interface Fault Hierarchy” on page 31.

Table 23: SONET (OC192, WAN PHY OC192) Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	—	—
wanoc192:<chassis>/<slot>/<subslot>/<port>			

Clearing an AIS-L Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms upstream of the local NE.
2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

APR

Table 24: Alarm Details

Parameter	Description
Code	apr
Description	Automatic Power Reduction: For safety reasons, the local port has automatically reduced laser power. For more information about APR, see the <i>BT17800 Series Software Configuration Guide</i> .
Entities Affected	<ul style="list-style-type: none"> DOL ports (see respective table below). Terminal amplifier client and DCM ports (see respective table below).
Possible Cause	A fiber cut has been detected.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See: <ul style="list-style-type: none"> Clearing an APR Alarm (PRE Port) on page 50 Clearing an APR Alarm (terminal Amplifier Port) on page 50
Related Fault Hierarchy	See: <ul style="list-style-type: none"> DOL Port Fault Hierarchy on page 33 Terminal Amplifier Port Fault Hierarchy on page 35

Table 25: DOL Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
port:<chassis>/<slot>/1/PRE	PRE	Fault LED, PRE port	On

Table 26: Terminal Amplifier Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
client:<chassis>/<slot>/1/<portNum>	AMP1	Fault LED, DCM port	On
dcm:<chassis>/<slot>/1/<portNum>		Fault LED, C1 port	

Clearing an APR Alarm (PRE Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for a “LoLightRx” on page 107 alarm on the host module's PRE In port.
2. Inspect the fiber at the following locations, and ensure that the fiber is intact, thoroughly clean, and correctly connected:
 - Between the PRE module's Out port and the host module's PRE In port.
 - Between the host module's PRE Out port and the PRE module's In port.
3. Check for alarms on the PRE port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

Clearing an APR Alarm (terminal Amplifier Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Do one of the following:
 - If the alarm is raised against the client Out port, retrieve statistics for the port to view the values of the **APR optical backreflection** and **Optical power transmitted** counters.

show statistics current client:identifier
 - If the alarm is raised against the DCM Out port, check for a “LoLightRx” on page 107 alarm on the DCM In port.
2. Inspect the fiber, and ensure that it is intact, thoroughly clean, and correctly connected.
3. Check for alarms on the terminal amplifier line port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

APSD

Table 27: Alarm Details

Parameter	Description
Code	apsd
Description	<p>Automatic Power Shutdown: The local port has automatically shut down its laser because either the optical power received has dropped below the Loss of Light, Receive threshold or APSD has been triggered on the NE at the far end of the fiber.</p> <p>For more information about APSD, see the <i>BT17800 Series Software Configuration Guide</i>.</p>
Entities Affected	<ul style="list-style-type: none"> DOL ports (see respective table below). Terminal amplifier line ports (see respective table below).
Possible Causes	<ul style="list-style-type: none"> The fiber connection is poor. There is a problem with the fiber. There is a problem at the far-end transmitter.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	<p>See:</p> <ul style="list-style-type: none"> Clearing an APSD Alarm (DOL Port) on page 52 Clearing an APSD Alarm (terminal Amplifier Line Port) on page 52
Related Fault Hierarchy	<p>See:</p> <ul style="list-style-type: none"> DOL Port Fault Hierarchy on page 33 Terminal Amplifier Port Fault Hierarchy on page 35

Table 28: DOL Ports

Entity Name		Fault Indicator	
	Module	Indicator	Status
port:<chassis>/<slot>/O/L1	ROADM2 or ILA	Fault LED, L1 port	On
port:<chassis>/<slot>/O/C<n>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Table 29: Terminal Amplifier Line Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
line:<chassis>/<slot>/1/<portNum>	AMP1	Fault LED, Line port	On

Clearing an APSD Alarm (DOL Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear the following alarms and conditions:
 - “LoLightRx” on page 107 raised against the DOL OSC and the DOL OMS
 - “ContComS” on page 55 raised against the DOL OSC
 - “OmsAis” on page 140 raised against the DOL OMS
2. Check for alarms on the DOL port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
3. Check for and clear an APSD alarm on the NE at the far-end of the fiber.
4. Check for alarms on the local DOL port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

Clearing an APSD Alarm (terminal Amplifier Line Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check whether an “LoLightRx” on page 107 alarm has been raised against the input amplifier Optical Supervisory Channel on the line port, and clear the alarm if it exists.
2. Check for alarms on the terminal amplifier line port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.

3. Check for and clear an APSD alarm on the far-end NE.
4. Check for alarms on the local terminal amplifier line port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

BDI

Table 30: Condition Details

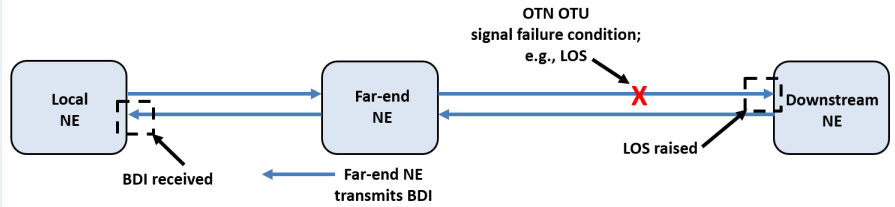
Parameter	Description
Code	bdi
Description/Cause	<div>Backward Defect Indication, OTN: The local interface has received a BDI signal from the NE at the far end of the fiber, indicating that no OTN OTU signal is being transmitted downstream of (and away from) the local NE. (See also “Maintenance Signaling” on page 35.)</div> <div></div>
Entities Affected	OTN OTU interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	No (false).
Condition Clearing	See “Clearing a BDI Condition” on page 54.
Related Fault Hierarchy	See “OTN Interface Fault Hierarchy” on page 30.

Table 31: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	Fault LED, 200G line port	On

Table 31: OTN OTU Interfaces (continued)

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Clearing a BDI Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms downstream of the local NE.
2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

CfgFail

Table 32: Condition Details

Parameter	Description
Code	cfgFail
Description/Cause	Configuration failed: A 40ge interface has been provisioned on a client port on a UFM6, but the UFM6 cannot accept the provisioning because the correct SERDES configuration has not been applied.
Entities Affected	UFM6
Default Severity	Not alarmed.
Service Affecting	Yes (true).
Condition Clearing	See "Clearing a cfgFail Condition" on page 55 .

Table 32: Condition Details (continued)

Parameter	Description
Related Fault Hierarchy	—

Clearing a cfgFail Condition

1. To apply the SERDES configuration, reseal or perform a cold reload of the UFM.

ContComS

Table 33: Alarm Details

Parameter	Description
Code	contComS
Description	Control Communications Failure, Span Section: Control communications with the NE at either end of the span section have failed.
Possible Cause	There are alarms on the far-end OSC.
Entities Affected	<ul style="list-style-type: none"> • DOL optical service channels (see respective table below). • Terminal amplifier Optical Supervisory Channels (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a ContComS Alarm” on page 56.
Related Fault Hierarchy	See: <ul style="list-style-type: none"> • DOL OSC Fault Hierarchy on page 33 • Terminal Amplifier Port Fault Hierarchy on page 35

Table 34: DOL Optical Service Channels (OSCs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
<code>osc:<chassis>/<slot>/O/L1</code>	ROADM2 or ILA	Fault LED, L1 port	On
<code>osc:<chassis>/<slot>/O/C<n></code>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Table 35: Terminal Amplifier Optical Supervisory Channels (OSCs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
osc:<chassis>/<slot>/1/<portNum>.<oscNum>	AMP1	—	—

Clearing a ContComS Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear alarms on OSC entities at both the local and far-end NEs.
2. Check the far-end NE for conditions indicating a module reset.
3. Check for alarms on the local OSC.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

DiskHighUsage

Table 36: Alarm Details

Parameter	Description
Code	diskHighUsage
Description	Disk High Usage. This alarm indicates that disk usage on the module has exceeded 90%.
Entities Affected	Management and traffic modules (see respective table below).
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	This alarm clears when disk usage falls below 70%. See “Clearing a DiskHighUsage Alarm” on page 57 .
Related Fault Hierarchy	—

Table 37: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Clearing a DiskHighUsage Alarm

1. If the alarm is raised against the CMM, clear up disk space by using the following commands to show and remove log files:

```
logging logarchives show
logging logarchives remove
```

- If the alarm has cleared, you have completed this procedure.
- If the alarm does not clear or if the alarm is raised against a traffic module, contact your next level of support.

EnvCurrentHighTh

Table 38: Alarm Details

Parameter	Description
Code	envCurrentHighTh
Description/Cause	Current Above High Threshold: The output current at the AC power entry module (PEM) is above the high-current threshold. For information, see “ Output-current Thresholds ” on page 184.
Entities Affected	Equipment (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “ Clearing an EnvCurrentHighTh Alarm ” on page 58.
Related Fault Hierarchy	See “ Environment Fault Hierarchy ” on page 28.

Table 39: Equipment

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
pem:<chassis>/<slot>	AC PEM	See the PEM specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Clearing an EnvCurrentHighTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment.

1. Retrieve environment information to view output-current readings for the PEM:

show environment current

2. Reseat the PEM.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
3. Replace the PEM.
4. Check for alarms on the PEM.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EnvCurrentLowTh

Table 40: Alarm Details

Parameter	Description
Code	envCurrentLowTh
Description/Cause	Current Below Low Threshold: The output current at the AC power entry module (PEM) is below the low-current threshold. For information, see “Output-current Thresholds” on page 184.
Entities Affected	Equipment (see respective table below).
Default Severity	Major

Table 40: Alarm Details (continued)

Parameter	Description
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing an EnvCurrentLowTh Alarm" on page 59.
Related Fault Hierarchy	See "Environment Fault Hierarchy" on page 28.

Table 41: Equipment

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
pem:<chassis>/<slot>	AC PEM	See the PEM specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Clearing an EnvCurrentLowTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment.

1. Retrieve environment information to view current readings for the PEM:

```
show environment current
```

2. Reseat the PEM.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
3. Replace the PEM.
4. Check for alarms on the PEM.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EnvTempHighTh

Table 42: Alarm Details

Parameter	Description
Code	envTempHighTh
Description/Cause	Environment Temperature Above High Threshold: The temperature at the equipment or module has exceeded the high temperature threshold. For information, see “Temperature Thresholds - Equipment and Traffic Modules” on page 181.
Entities Affected	<ul style="list-style-type: none"> Equipment (see respective table below). Management and traffic modules (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an EnvTempHighTh Alarm” on page 61.
Related Fault Hierarchy	See “Environment Fault Hierarchy” on page 28.

Table 43: Equipment

Entity Name	Fault Indicator	
	Equipment	Status
pem:<chassis>/<slot>	PEM	See equipment specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .
fan:<chassis>/<slot>	Cooling module	

Table 44: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
bic:<chassis>/<slot>/<subslot>	BIC		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Clearing an EnvTempHighTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before rebooting a traffic module or to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment or traffic modules.

1. Retrieve environment information to view the temperature reading for the equipment or traffic module:

show environment temperature

2. Check for and clear a “FanSpeedLowTh” on page 78 alarm on each cooling module installed in the chassis.
3. Check for alarms on the affected equipment or traffic module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Ensure that the ambient temperature is within the specified range for chassis operation. For information, see the *BT17800 Series Hardware Overview and Installation Guide*.
5. Check for alarms on the affected equipment or traffic module.

- If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
6. Do the following:
 - If the alarm is raised against equipment, reseal the equipment.
 - If the alarm is raised against a traffic module, perform a warm reboot of the module.
 7. Check for alarms on the equipment or module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
 8. Replace the equipment or module.
 9. Check for alarms on the equipment or module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EnvTempLowTh

Table 45: Condition Details

Parameter	Description
Code	envTempLowTh
Description/Cause	Environment Temperature Above Low Threshold: The temperature at the equipment or module is higher than the temperature at the low end of the high-temperature threshold range. For information, see “Temperature Thresholds - Equipment and Traffic Modules” on page 181.
Entities Affected	<ul style="list-style-type: none"> • Equipment (see respective table below). • Management and traffic modules (see respective table below).
Default Severity	Not alarmed.
Service Affecting	Yes (true).
Condition Clearing	See “Clearing an EnvTempLowTh Condition” on page 63.
Related Fault Hierarchy	See “Environment Fault Hierarchy” on page 28.

Table 46: Equipment

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
pem:<chassis>/<slot>	PEM	—	—
fan:<chassis>/<slot>	Cooling module		

Table 47: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
bic:<chassis>/<slot>/<subslot>	BIC		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Clearing an EnvTempLowTh Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before rebooting a traffic module or to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment or traffic modules.

1. Retrieve environment information to view the temperature reading for the equipment or traffic module:

show environment temperature

2. Ensure that the ambient temperature is within the specified range for chassis operation. For information, see the *BT17800 Series Hardware Overview and Installation Guide*.

3. Check for alarms on the equipment or module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Do the following:
 - If the alarm is raised against equipment, reseal the equipment.
 - If the alarm is raised against a traffic module, perform a warm reboot of the module.
5. Check for alarms on the equipment or module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EnvVoltHighTh

Table 48: Alarm Details

Parameter	Description
Code	envVoltHighTh
Description/Cause	Environment Voltage Above High Threshold: The voltage on the equipment (PEM) or module exceeds the high-voltage threshold. For information, see “Voltage Thresholds” on page 184 . CAUTION: Continued operation might cause equipment damage.
Entities Affected	<ul style="list-style-type: none"> • Equipment (see respective table below). • Traffic modules (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an EnvVoltHighTh Alarm” on page 65 .
Related Fault Hierarchy	See “Environment Fault Hierarchy” on page 28 .

Table 49: Equipment

Entity Name	Fault Indicator	
	Equipment	Status
pem:<chassis>/<slot>	AC PEM	See the PEM specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .

Table 50: Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
ufm:<chassis>/<slot>	UFM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Clearing an EnvVoltHighTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before rebooting a traffic module or to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment or traffic modules.

1. Retrieve environment information to view voltage readings for the equipment or traffic module:

show environment voltage

2. Do the following:
 - If the alarm is raised against the equipment, go to step 5.
 - If the alarm is raised against a traffic module, go to the next step.
3. Perform a warm reload of the traffic module.

system reload warm module

- If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Perform a cold reload of the traffic module.

system reload cold module

- If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
5. Reseat the equipment or module.
 - If the alarm has cleared, you have completed this procedure.

- If the alarm does not clear, go to the next step.
6. Replace the equipment or module.
 7. Check for alarms on the equipment or module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EnvVoltLowTh

Table 51: Alarm Details

Parameter	Description
Code	envVoltLowTh
Description/Cause	<p>Environment Voltage Below Low Threshold: The voltage on the equipment (PEM) or module is below the low-voltage threshold. For information, see “Voltage Thresholds” on page 184.</p> <p>CAUTION: Continued operation might cause equipment damage.</p>
Entities Affected	<ul style="list-style-type: none"> • Equipment (see respective table below). • Traffic modules (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an EnvVoltLowTh Alarm” on page 67.
Related Fault Hierarchy	See “Environment Fault Hierarchy” on page 28.

Table 52: Equipment

Entity Name	Fault Indicator		
	Equipment	Indicator	Status
pem:<chassis>/<slot>	AC PEM	See the PEM specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Table 53: Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
ufm:<chassis>/<slot>	UFM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Clearing an EnvVoltLowTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before rebooting a traffic module or to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment or traffic modules.

1. Retrieve environment information to view voltage readings for the equipment or traffic module:

show environment voltage

2. Do the following:
 - If the alarm is raised against the equipment, go to step 5.
 - If the alarm is raised against a traffic module, go to the next step.
3. Perform a warm reload of the traffic module.

system reload warm module

- If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Perform a cold reload of the traffic module.

system reload cold module

- If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
5. Reseat the equipment or module.
 - If the alarm has cleared, you have completed this procedure.

- If the alarm does not clear, go to the next step.
6. Replace the equipment or module.
 7. Check for alarms on the equipment or module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EqptBrownout

Table 54: Alarm Details

Parameter	Description
Code	eqptBrownout
Description	<p>Equipment Brownout: A brownout condition has been detected on a UFM that is installed in a BT17800 Series chassis powered by a DC power entry module (PEM).</p> <p>CAUTION: Continued operation might cause equipment damage.</p>
Entities Affected	<p>UFM modules (see table below)</p> <p>NOTE: For UFM3 and UFM4 modules, this alarm results in an automatic cold reload of the UFM.</p>
Possible Cause	The supply voltage to a UFM is lower than the minimum normal voltage threshold for the module, but not lower than the power-off threshold.
Default Severity	Major
Service Affecting	Yes (true)
Alarm Clearing	See "Clearing an EqptBrownout Alarm" on page 69.
Related Fault Hierarchy	–

Table 55: UFM Modules

Entity Name	Fault Indicator		
	Module	Indicator	Status
ufm:<chassis>/<slot>	UFM	See "BT17800 Series Module and BIC LED Behavior" on page 193.	

Clearing an EqptBrownout Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve environment information to view voltage data for the UFM and each PEM installed in the chassis:

show environment voltage
2. Check for and clear alarms raised against the PEMs, and ensure that they are properly seated and connected to power.
3. Check for alarms on the UFM.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EqptComm

Table 56: Alarm Details

Parameter	Description
Code	eqptComm
Description/Cause	Equipment Management Communications Failure: The CMM is not able to communicate with the equipment.
Entities Affected	Traffic modules (see respective table below).
Default Severity	Major
Service Affecting	Depends on reason alarm has been raised.
Alarm Clearing	See "Clearing an EqptComm Alarm" on page 70.
Related Fault Hierarchy	See "Equipment Fault Hierarchy" on page 27.

Table 57: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Clearing an EqptComm Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before rebooting an active CMM.

1. Perform a warm reboot of the active CMM, and then check for alarms on the affected module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
2. Perform a cold reboot of the active CMM, and then check for alarms on the affected module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EqptDgrd

Table 58: Alarm Details

Parameter	Description
Code	eqptDgrd
Description/Cause	Equipment Degrade: Initialization of a module has failed.

Table 58: Alarm Details (continued)

Parameter	Description
Entities Affected	Traffic modules (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an EqptDgrd Alarm” on page 71.
Related Fault Hierarchy	See “Equipment Fault Hierarchy” on page 27.

Table 59: Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
ufm:<chassis>/<slot>	UFM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
bic:<chassis>/<slot>/<subslot>	1x CFP BIC or 12x SFP+ BIC		

Clearing an EqptDgrd Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before either rebooting or changing the administrative status of equipment.

- Do the following:
 - For a UFM module, perform a cold reboot of the module.
 - For a BIC module, administratively disable the module, and then administratively enable it.
- Check for alarms on the module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EqptFail

Table 60: Alarm Details.

Parameter	Description
Code	eqptFail
Description/Cause	Equipment Failure: <ul style="list-style-type: none"> A hardware self-test has detected faulty equipment. An automatic upgrade of the re-timer firmware has failed on a UFM6.
Entities Affected	<ul style="list-style-type: none"> Equipment (see respective table below). Management and traffic modules (see respective table below). Pluggable transceivers (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing an EqptFail Alarm" on page 73.
Related Fault Hierarchy	See "Equipment Fault Hierarchy" on page 27.

Table 61: Equipment

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
cap:<chassis>/<slot>	CAP	See equipment specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	
fan:<chassis>/<slot>	Cooling module		
esl:<chassis>/<slot>	ESL		
pem:<chassis>/<slot>	PEM		

Table 62: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
bic:<chassis>/<slot>/<subslot>	BIC		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Table 63: Pluggable Transceivers

Entity Name	Transceiver	Fault Indicator	
		Indicator	Status
<transceiver-type>:<chassis>/<slot>/<subslot>/<port> where <i>transceiver-type</i> corresponds to the type of transceiver installed in the port; for example, cfp, qsfp, qsfp28, or sfpPlus.	CFP, QSFP+, QSFP28, SFP+	Fail LED, transceiver port	On
pre:<chassis>/<slot>	PRE	Fail LED, PRE port	

Clearing an EqptFail Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment.

1. Perform a cold reload (**system reload cold**) of the failed equipment.
2. Check for alarms.
 - If the alarm has cleared, you have completed this procedure.

- If the alarm does not clear, go to the next step.
- 3. Reseat the equipment (equipment, traffic module, or pluggable transceiver).
- 4. Check for alarms.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
- 5. Replace the equipment.
- 6. Check for alarms on the equipment.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EqptMism

Table 64: Alarm Details

Parameter	Description
Code	eqptMism
Description/Cause	Equipment Mismatch: The installed equipment does not match the equipment provisioned for the slot or subslot.
Entities Affected	<ul style="list-style-type: none"> • Equipment (see respective table below). • Traffic modules (see respective table below). • Pluggable transceivers (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an EqptMism Alarm” on page 75.
Related Fault Hierarchy	See “Equipment Fault Hierarchy” on page 27.

Table 65: Equipment

Entity Name	Fault Indicator		
	Equipment	Indicator	Status
fan:<chassis>/<slot>	Cooling module	See equipment specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	
esl:<chassis>/<slot>	ESL		
pem:<chassis>/<slot>	PEM		

Table 66: Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
ufm:<chassis>/<slot>	UFM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
bic:<chassis>/<slot>/<subslot>	BIC		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Table 67: Pluggable Transceivers

Entity Name	Transceiver	Fault Indicator	
		Indicator	Status
<transceiver-type>:<chassis>/<slot>/<subslot>/<port>	CFP, QSFP+, QSFP28, SFP+	Fail LED, transceiver port	On
where <i>transceiver-type</i> corresponds to the type of transceiver installed in the port; for example, cfp, qsfp, qsfp28, or sfpPlus.			

Clearing an EqptMism Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing equipment.

1. Retrieve equipment-provisioning information:

show equipment

2. Do one of the following:

- Modify the provisioned settings so that they match those of the installed equipment (equipment, traffic module, or pluggable transceiver). For information, see the *BT17800 Software Configuration Guide*.
- Replace the equipment with equipment that matches the provisioned settings.

3. Check for alarms on the equipment.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

EqptMiss

Table 68: Alarm Details

Parameter	Description
Code	eqptMiss
Description/Cause	Equipment Missing: Provisioned equipment is not physically present in a slot or subslot.
Entities Affected	<ul style="list-style-type: none"> • Equipment (see respective table below). • Management and traffic modules (see respective table below). • Pluggable transceivers (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm clearing	See "Clearing an EqptMiss Alarm" on page 77.
Related Fault Hierarchy	See "Equipment Fault Hierarchy" on page 27.

Table 69: Equipment

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
fan:<chassis>/<slot>	Cooling module	–	–
esl:<chassis>/<slot>	ESL		
pem:<chassis>/<slot>	PEM		

Table 70: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	—	—
ufm:<chassis>/<slot>	UFM		
bic:<chassis>/<slot>/<subslot>	BIC		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Table 71: Pluggable Transceivers

Entity Name	Transceiver	Fault Indicator	
		Indicator	Status
<transceiver-type>:<chassis>/<slot>/<subslot>/<port> where <i>transceiver-type</i> corresponds to the type of transceiver installed in the port; for example, cfp, qsfp, qsfp28, or sfpPlus.	CFP, QSFP+, QSFP28, SFP+	—	—
pre:<chassis>/<slot>	PRE	—	—

Clearing an EqptMiss Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before installing equipment.

1. Retrieve inventory and provisioned-equipment information:

```
show inventory
show equipment
```

2. Confirm whether the equipment (equipment, traffic module, or pluggable transceiver) is present in the slot or subslot.
 - If the equipment is present in the slot or subslot, go to [3](#).
 - If the equipment is not present in the slot or subslot, go to [4](#).
3. Ensure that the equipment is properly seated in the slot or subslot, and then go to [5](#).
4. Install the missing equipment, ensuring that its attributes match the attributes of the equipment provisioned for the slot or subslot. For information, see the *BT17800 Hardware Overview and Installation Guide*.
5. Check for alarms on the equipment.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

FanSpeedLowTh

Table 72: Alarm Details

Parameter	Description
Code	fanSpeedLowTh
Description	Fan Speed Below Threshold: The fan speed of the cooling module is below the low threshold. For information, see “Fan-speed Thresholds” on page 184 .
Entities Affected	Equipment (see respective table below).
Possible Cause	<ul style="list-style-type: none"> • The cooling module is faulty. • The power entry module is faulty.
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a FanSpeedLowTh Alarm” on page 79 .
Related Fault Hierarchy	—

Table 73: Equipment

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
fan:<chassis>/<slot>	Cooling module	See cooling module specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Clearing a FanSpeedLowTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before reseating (removing and reinstalling) or replacing equipment.

1. Retrieve fan-speed information for the cooling modules installed in the chassis:

```
show environment fanspeed
```

2. Ensure that the ambient temperature is within the specified range for chassis operation.



NOTE: See the *BT17800 Series Hardware Overview and Installation Guide* for information about environmental site requirements.

3. Check for and clear alarms raised against each PEM, and then check for alarms on the cooling module.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Reseat the cooling module, and then check for alarms.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
5. Replace the cooling module, and then check for alarms.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

FECI

Table 74: Alarm Details

Parameter	Description
Code	feci
Description/Cause	Far-End Node Configuration ID Mismatch: Either the configuration of the DOL fiber-connection is not supported or the expected far-end degree and group values provisioned on a terminal amplifier Optical Supervisory Channel do not match the actual (far-end) degree and group values.
Entities Affected	<ul style="list-style-type: none"> DOL ports (see respective table below). Terminal amplifier Optical Supervisory Channels (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See: <ul style="list-style-type: none"> Clearing a FECI Alarm (DOL Port) on page 81 Clearing a FECI Alarm (terminal Amplifier OSC) on page 81
Related Fault Hierarchy	See: <ul style="list-style-type: none"> DOL Port Fault Hierarchy on page 33 Terminal Amplifier Port Fault Hierarchy on page 35

Table 75: DOL Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
port:<chassis>/<slot>/0/L1	ROADM2 or ILA	Fault LED, L1 port	On
port:<chassis>/<slot>/0/C<n>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Table 76: Terminal Amplifier Optical Supervisory Channels (OSCs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
osc:<chassis>/<slot>/1/<portNum>.<oscNum>	AMP1	–	–

Clearing a FECI Alarm (DOL Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve DOL fiber-connection information to identify the unsupported fiber-connection configuration:

```
show dol fiber-conn
```

2. Delete the unsupported fiber connection, and reprovision the fiber connection using a supported configuration. For information, see the *BT17800 Series Software Configuration Guide*.
3. Check for alarms on the DOL port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

Clearing a FECI Alarm (terminal Amplifier OSC)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve information for the OSC:

```
show amp
```

2. Compare the values of the following pairs of attributes:
 - Expected Far-end Degree / Actual Far-end Degree
 - Expected Far-end Group / Actual Far-end Group
3. Delete the OSC at either the local or far-end NE, and reprovision the OSC so that the expected and actual degree and/or group values are the same. For information, see the *BT17800 Series Software Configuration Guide*.
4. Check for alarms on the OSC.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

FEIM

Table 77: Alarm Details

Parameter	Description
Code	feim
Description/Cause	Far-End Node Identification Mismatch: Either the provisioned endpoints of a DOL fiber connection do not match the actual endpoints or the expected far-end system information provisioned on a terminal amplifier Optical Supervisory Channel does not match the actual (far-end) system information
Entities Affected	<ul style="list-style-type: none"> DOL ports (see respective table below). Terminal amplifier Optical Supervisory Channels (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See: <ul style="list-style-type: none"> Clearing a FEIM Alarm (DOL Port) on page 83 Clearing a FEIM Alarm (terminal Amplifier OSC) on page 83
Related Fault Hierarchy	See: <ul style="list-style-type: none"> DOL Port Fault Hierarchy on page 33 Terminal Amplifier Port Fault Hierarchy on page 35

Table 78: DOL Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
port:<chassis>/<slot>/O/L1	ROADM2 or ILA	Fault LED, L1 port	On
port:<chassis>/<slot>/O/C<n>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Table 79: Terminal Amplifier Optical Supervisory Channels (OSCs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
osc:<chassis>/<slot>/1/<portNum>.<oscNum>	AMP1	–	–

Clearing a FEIM Alarm (DOL Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve DOL fiber-connection information to determine whether the provisioned endpoints or the actual endpoints of the fiber connection are incorrect:

```
show dol fiber-conn
```

2. Delete the incorrect fiber connection, and reprovision the fiber-connection so that the mismatch is resolved. For information, see the *BT17800 Series Software Configuration Guide*.
3. Check for alarms on the DOL port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

Clearing a FEIM Alarm (terminal Amplifier OSC)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve information for the OSC:

```
show amp
```

2. Compare the values of the following pairs of attributes:
 - Expected Far-end System ID / Actual Far-end System ID
 - Expected Far-end IP Address / Actual Far-end IP Address
3. Delete the OSC at either the local or far-end NE, and reprovision the OSC so that the expected and actual system ID and/or IP address values are the same. For information, see the *BT17800 Series Software Configuration Guide*.
4. Check for alarms on the OSC.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

FirmUpgrdInProg

Table 80: Condition Details

Parameter	Description
Code	firmUpgrdInProg
Description/Cause	Firmware Upgrade in Progress: <ul style="list-style-type: none"> A shelf management (SHMM) firmware upgrade is in progress on a CMM. A re-timer firmware upgrade is in progress on a UFM6. If an automatic upgrade is in progress, the alarm is raised against the UFM6 module. If a manual upgrade is in progress, the alarm is raised against the port being upgraded.
Entities Affected	<ul style="list-style-type: none"> Management modules UFM6 modules UFM6 dual-mode ports See respective tables below.
Default Severity	Not alarmed
Service Affecting	No (false)
Condition Clearing	This condition clears when the firmware is successfully upgraded. For information, see the <i>BT17800 Series Software Configuration Guide</i> .
Related Fault Hierarchy	—

Table 81: Management Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	

Table 82: UFM6 Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
ufm:<chassis>/<slot>	UFM6	—	—

Table 83: UFM6 Dual-Mode Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
rtmr:<chassis>/<slot>/1/[1 2 6 7]	UFM6	–	–

FirmUpgrdFail

Table 84: Alarm Details

Parameter	Description
Code	firmUpgrdFail
Description/Cause	Firmware Upgrade Failed: <ul style="list-style-type: none"> • A shelf management (SHMM) firmware upgrade (manual or automatic) has failed. • A manual re-timer firmware upgrade has failed.
Entities Affected	<ul style="list-style-type: none"> • Management modules • UFM6 dual-mode ports See respective tables below.
Default Severity	Major
Service Affecting	No (false)
Alarm Clearing	See “Clearing a FirmUpgrdFail Alarm” on page 86.
Related Fault Hierarchy	–

Table 85: Management Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	

Table 86: UFM6 Dual-Mode Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
ufm:<chassis>/<slot>/1/[1 2 6 7]	UFM6	See “BT17800 Series Module and BIC LED Behavior” on page 193.	

Clearing a FirmUpgrdFail Alarm

1. Reattempt the firmware upgrade. For information, see the *BT17800 Series Software Configuration Guide*.
2. Check for alarms on the CMM.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

FirmUpgrdReqd

Table 87: Alarm Details

Parameter	Description
Code	firmUpgrdReqd
Description/Cause	Firmware Upgrade Required: <ul style="list-style-type: none"> • The version of Shelf Management (SHMM) firmware running on the CMM does not match the version required by the currently running software. This alarm is raised against the CMM. • The version of re-timer firmware running on one or more UFM6 modules does not match the version required by the currently running software. This alarm is raised against the chassis.
Entities Affected	<ul style="list-style-type: none"> • Management modules • Chassis See respective tables below.
Default Severity	Major
Service Affecting	No (false)
Alarm Clearing	This alarm clears when the firmware is upgraded successfully. For the re-timer firmware, this alarm clears when the re-timer firmware on all UFM6 modules is upgraded successfully. For information, see the <i>BT17800 Series Software Configuration Guide</i> .
Related Fault Hierarchy	—

Table 88: Management Modules

Entity Name	Fault Indicator		
	Module	Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	

Table 89: Chassis

Entity Name	Module	Fault Indicator	
		Indicator	Status
chassis:1	—	—	—

Forced

Table 90: Condition Details

Parameter	Description
Code	forced
Description/Cause	Forced Protection Switch Active: The operator has forced a protection switch.
Entities Affected	Wavelength protection ports (see respective table below).
Default Severity	Not alarmed.
Service Affecting	No (false).
Condition Clearing	This condition clears when the protection switch is released. For information, see the <i>BT17800 Series Software Configuration Guide</i> .
Related Fault Hierarchy	—

Table 91: Wavelength Protection Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
wpsport:<chassis>/<slot>/L<n>	WPS4	—	—
where <i>n</i> is in the range of 1A to 4A or 1B to 4B.			

HighBer

Table 92: Alarm Details

Parameter	Description
Code	highBer
Description	High Bit-Error Rate: The local port has detected a bit-error rate in the received signal that is 10^{-4} or greater.

Table 92: Alarm Details (continued)

Parameter	Description
Entities Affected	<ul style="list-style-type: none"> Ethernet interfaces Fibre channel interfaces <p>See respective tables below.</p>
Possible Causes	<ul style="list-style-type: none"> Either the fiber link or the optical connection is degraded. There is excessive attenuation of the signal, causing high a signal-to-noise ratio.
Default Severity	Major
Service Affecting	No (false)
Alarm Clearing	See “Clearing a HighBer Alarm” on page 89.
Related Fault Hierarchy	<p>See “Ethernet Interface Fault Hierarchy” on page 31.</p> <p>See “Fibre Channel Interface Fault Hierarchy” on page 32.</p>

Table 93: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 94: Fibre Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
8gfc:<chassis>/<slot>/1/<port>/subport	UFM6	Fault LED, 10-Gbps port	On
10gfc:<chassis>/<slot>/1/<port>/subport	UFM6	Fault LED, 10-Gbps port	On

Clearing a HighBer Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve detailed information for the interface to determine whether the value of the **Optical Power Rx** counter is within the range indicated by the **Optical Power Received Minimum Threshold** and **Optical Power Received Maximum Threshold** values.

show interface name:identifier detail



NOTE: For detailed transceiver specifications, see the *BT17800 Series Hardware Overview and Installation Guide*.

2. Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
3. Ensure that no unintentional attenuation has been added to the fiber.
4. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

InvUnknown

Table 95: Alarm Details

Parameter	Description
Code	invUnknown
Description/Cause	Inventory Unknown: The installed pluggable transceiver is not readable.
Entities Affected	Pluggable transceivers (see respective table below).
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See “Clearing an InvUnknown Alarm” on page 90.
Related Fault Hierarchy	—

Table 96: Pluggable Transceivers

Entity Name	Transceiver	Fault Indicator	
		Indicator	Status
<code><transceiver-type>;<chassis>/<slot>/<subslot>/<port></code> where <i>transceiver-type</i> corresponds to the type of transceiver installed in the port; for example, cfp, qsfp, qsfp28, or sfpPlus.	CFP, QSFP+, QSFP28, SFP+	Fail LED, transceiver port	On

Clearing an InvUnknown Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing a transceiver.

1. Replace the unknown transceiver with a readable transceiver.
2. Check for alarms on the port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

InventoryUnsupp

Table 97: Alarm Details

Parameter	Description
Code	inventoryUnsupp
Description/Cause	Inventory Unsupported: A QSFP28 transceiver is installed in a transceiver port that supports only QSFP+ transceivers.
Entities Affected	Pluggable transceivers (see respective table below).
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See "InvUnknown" on page 89.
Related Fault Hierarchy	—

Table 98: Pluggable Transceivers

Entity Name	Transceiver	Fault Indicator	
		Indicator	Status
<code><qsfp28>:<chassis>/<slot>/<subslot>/<port></code>	QSFP28 pluggable transceiver	Fail LED, 10G port	On

Clearing an InventoryUnsupp Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing a transceiver.

1. Replace the QSFP28 transceiver with a supported QSFP+ transceiver.
2. Check for alarms on the port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

IsisAdjDown

Table 99: Alarm Details

Parameter	Description
Code	isisAdjDown
Description	IS-IS AdjacencyDown: An IS-IS adjacency is down and no longer being considered for routing. NOTE: This alarm can be raised only after an adjacency (neighbor) has been established.
Entities Affected	Management interfaces (see respective table below).
Possible Causes	<ul style="list-style-type: none"> • A fiber is either cut or disconnected. • Equipment (for example, the router or module) on the neighbor side is down; for example, it is being restarted.
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an IsisAdjDown Alarm” on page 92.

Table 99: Alarm Details (continued)

Parameter	Description
Related Fault Hierarchy	—

Table 100: Management Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
mgt: <i>n</i>	ROADM2, ILA	Fault LED, L1 port	On
where <i>n</i> is an alphanumeric string.		Fault LED, C< <i>n</i> > port	
sysmgt	CMM	See "BT17800 Series Module and BIC LED Behavior" on page 193.	

Clearing an IsisAdjDown Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

- Do the following:
 - Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
 - Check the equipment on the neighbor side and ensure that it is powered on and operating.
- Check for alarms on the management interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LaserFail

Table 101: Alarm Details

Parameter	Description
Code	laserFail
Description/Cause	Laser Fail: The transmit laser of the transceiver has failed.

Table 101: Alarm Details (continued)

Parameter	Description
Entities Affected	<ul style="list-style-type: none"> Optical channel interfaces (see respective table below.) OTN OTU interfaces (see respective table below). Ethernet interfaces (see respective table below). SONET/SDH interfaces (see respective table below). Wavelength channels (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a LaserFail Alarm” on page 94.
Related Fault Hierarchy	See “Common Fault Hierarchy - OTN and CBR Ports” on page 29.

Table 102: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 103: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			
NOTE: Supported on UFM3 only.			

Table 104: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 105: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 106: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On

¹ Reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.

Clearing a LaserFail Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before rebooting a traffic module or to the *BT17800 Series Hardware Overview and Installation Guide* replacing a traffic module or transceiver.

1. Perform a cold reboot:
 - If the alarm is raised against a line-port interface provisioned on an integrated MSA transceiver, reboot the UFM that contains the integrated MSA.
 - If the alarm is raised against a client-port interface provisioned on a pluggable transceiver installed in a BIC, reboot the UFM in which the BIC is installed.
2. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
3. Replace the either the UFM or the pluggable transceiver:
 - If the alarm is raised against a line-port interface provisioned on an integrated MSA transceiver, replace the UFM.
 - If the alarm is raised against a client-port interface provisioned on a pluggable transceiver, replace the pluggable transceiver.
4. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LaserTempHighTh

Table 107: Alarm Details

Parameter	Description
Code	laserTempHighTh
Description	Laser Temperature Above High Temperature Threshold: The transmit laser temperature has exceeded the high temperature threshold.
Entities Affected	<ul style="list-style-type: none"> • Optical channel interfaces (see respective table below). • OTN OTU interfaces (see respective table below). • Ethernet interfaces (see respective table below). • SONET/SDH interfaces (see respective table below). • Wavelength channels (see respective table below).
Possible Causes	The transmit laser is malfunctioning.
Default Severity	Major
Service Affecting	No (false).

Table 107: Alarm Details (continued)

Parameter	Description
Alarm Clearing	See "Clearing a LaserTempHighTh Alarm" on page 97.
Related Fault Hierarchy	See "OTN Interface Fault Hierarchy" on page 30.

Table 108: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 109: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 110: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 111: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 112: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On
¹ Reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.			

Clearing a LaserTempHighTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing a traffic module or a transceiver.

1. Optionally, retrieve detailed information for the interface to view the **Laser Temperature** and **Laser Temperature Max. Threshold** values:


```
show interface name:identifier detail
```
2. Replace either the pluggable transceiver installed in the port or, if the alarm is raised against an interface provisioned on an integrated MSA, the UFM.
3. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LaserTempLowTh

Table 113: Alarm Details

Parameter	Description
Code	laserTempLowTh
Description	Laser Temperature Below Low Temperature Threshold: The transmit laser temperature has fallen below the low temperature threshold.
Entities Affected	<ul style="list-style-type: none"> Optical channel interfaces (see respective table below). OTN OTU interfaces (see respective table below). Ethernet interfaces (see respective table below). SONET/SDH interfaces (see respective table below). Wavelength channels (see respective table below).
Possible Causes	The transmit laser is malfunctioning.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See "Clearing a LaserTempLowTh Alarm" on page 99.
Related Fault Hierarchy	See "Fault Masking and Hierarchies" on page 27.

Table 114: Optical Channel Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 115: OTN OTU Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 116: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 117: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 118: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On

¹ Reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.

Clearing a LaserTempLowTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing a traffic module or a transceiver.

1. Optionally, retrieve detailed information for the interface to view the **Laser Temperature** and **Laser Temperature Min. Threshold** values:

show interface name:identifier detail

2. Replace either the pluggable transceiver installed in the port or, if the alarm is raised against a line-port interface provisioned on an integrated MSA, the UFM.
3. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LCK

Table 119: Alarm Details

Parameter	Description
Code	lck
Description	Locked, ODU: The local interface has received an ODU-LCK signal from the NE at the far end of the fiber, indicating that the connection at the transmitting interface is locked.
Entities Affected	OTN ODU interfaces (see respective table below).
Possible Causes	The transmitting OTN OTU interface at an upstream NE is either administratively disabled or in loopback mode.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an LCK Alarm” on page 101 .
Related Fault Hierarchy	See “OTN Interface Fault Hierarchy” on page 30 .

Table 120: OTN ODU Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
odu4:<chassis>/<slot>/2/1/<subport.och.tributary>	UFM6	Fault LED, 200-Gbps port, 400G Coherent MSA XCVR	On
odu3:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2e:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu4:<chassis>/<slot>/1/1	UFM4	Fault LED, 100-Gbps port, 100G Coherent MSA XCVR	
odu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100-Gbps port	
odu2:<chassis>/<slot>/<subslot>/<port.sub-interface>			
odu2e:<chassis>/<slot>/<subslot>/<port.sub-interface>			
NOTE: Supported on UFM3 only.			
odu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10-Gbps port	
odu2e:<chassis>/<slot>/<subslot>/<port>			
NOTE: Supported on UFM3 only.			

Clearing an LCK Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve data for the transmitting OTU interface at the upstream NE to determine whether it is either administratively disabled (**Admin State = disabled**) or in loopback mode (**Loopback = loopback**)

show interface name:identifier

2. Do one of the following, referring to the *BT17800 Series Software Configuration Guide* for more information:
 - If the transmitting interface is administratively disabled, enable the interface.
 - If the transmitting interface is in loopback mode, release the loopback.
3. Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.

- If the alarm does not clear, contact your next level of support.

LF

Table 121: Condition Details

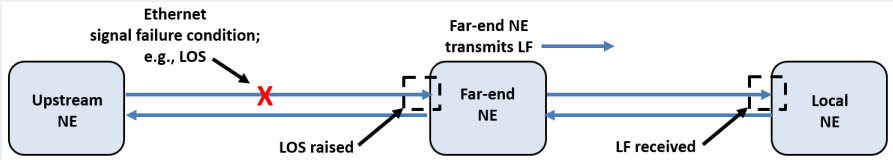
Parameter	Description
Code	lf
Description	<p>Local Fault: The local interface has received a local-fault signal from the NE at the far end of the fiber, indicating that no Ethernet signal is being transmitted upstream of (and toward) the local NE. (See also “Maintenance Signaling” on page 35.)</p> 
Entities Affected	Ethernet interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	No (false).
Condition Clearing	See “ Clearing an LF Condition ” on page 103.
Related Fault Hierarchy	See “ Ethernet Interface Fault Hierarchy ” on page 31.

Table 122: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	—	—
100ge:<chassis>/<slot>/<1>/<port>	UFM6		
40ge:<chassis>/<slot>/<1>/<port>	UFM6		
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6		
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC		

Clearing an LF Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms upstream of the local NE.
2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

Lockout

Table 123: Condition Details

Parameter	Description
Code	lockout
Description/Cause	Lockout of Protection: The operator has locked out a line port for protection.
Entities Affected	Wavelength protection ports (see respective table below).
Default Severity	Not alarmed.
Service Affecting	No (false).
Condition Clearing	This condition clears when the protection switch is released. For information, see the <i>BT17800 Series Software Configuration Guide</i> .
Related Fault Hierarchy	—

Table 124: Wavelength Protection Ports

Entity Name	Fault Indicator		
	Module	Indicator	Status
wpsport:<chassis>/<slot>/L<n>	WPS4	—	—
where <i>n</i> is in the range of 1A to 4A or 1B to 4B.			

LOF

Table 125: Alarm Details

Parameter	Description
Code	lof
Description	Loss of Frame: Either the frame-alignment process is in the out-of-frame (OOF) state or a severely-errored-frame defect is present on an incoming signal.
Entities Affected	<ul style="list-style-type: none"> Optical channel interfaces (see respective table below). OTN OTU interfaces (see respective table below). SONET/SDH interfaces (see respective table below).
Possible Causes	<ul style="list-style-type: none"> Either the fiber link or the optical connection is severely degraded. The far-end optical transmitter is faulty.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing an LOF Alarm" on page 105.
Related Fault Hierarchy	See: <ul style="list-style-type: none"> Common Fault Hierarchy - OTN and CBR Ports on page 29 OTN Interface Fault Hierarchy on page 30 OC192, WAN PHY Over OC192 Interface Fault Hierarchy on page 31 STM64, WAN PHY Over STM64 Interface Fault Hierarchy on page 32

Table 126: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 127: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	Fault LED, 200G line port	On

Table 127: OTN OTU Interfaces (continued)

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 128: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Clearing an LOF Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
2. Check for and clear all alarms raised against the far-end optical transmitter.
3. Check for alarms on the local interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

Lolck

Table 129: Alarm Details

Parameter	Description
Code	lolck
Description	Loss of Lock: The optical channel cannot lock on to the encoded signal received.
Entities Affected	Optical channel interfaces (see respective table below).
Possible Causes	<ul style="list-style-type: none"> The encoding, modulation, or other configured parameter on the interface at the far-end NE does not match the configuration of the same parameter of the interface at the local NE. The signal-to-noise ratio is below specification.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a Lolck Alarm” on page 106 .
Related Fault Hierarchy	See “Common Fault Hierarchy - OTN and CBR Ports” on page 29 .

Table 130: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Clearing a Lolck Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve information for both the local and far-end optical channel interfaces to view configuration data:

show interface och:identifier detail

2. Correct the configuration settings where required. For information, see the *BT17800 Series Software Configuration Guide*.

- Retrieve statistics for the local and far-end optical channel interfaces to view the values of all optical signal-to-noise ratio counters, and ensure that the OSNR is within specification.

show statistics current och:identifier

- If required, improve the signal-to-noise ratio.
- Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LoLightRx

Table 131: Alarm Details

Parameter	Description
Code	loLightRx
Description/Cause	Loss of Light, Receive: The optical power received has dropped below the loss-of-light threshold.
Entities Affected	<ul style="list-style-type: none"> DOL PRE Ports (see respective table below). DOL optical service channels (see respective table below). DOL optical multiplex sections (see respective table below). DOL optical channels (see respective table below). Wavelength protection ports (see respective table below). Terminal amplifier ports (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See: <ul style="list-style-type: none"> Clearing a LoLightRx Alarm (DOL Entity) on page 109 Clearing a LoLightRx Alarm (wavelength Protection Port) on page 110 Clearing a LoLightRx Alarm (terminal Amplifier Port) on page 110
Related Fault Hierarchy	See: <ul style="list-style-type: none"> DOL Port Fault Hierarchy on page 33 DOL OSC Fault Hierarchy on page 33 DOL OMS Fault Hierarchy on page 34 DOL OCH Fault Hierarchy on page 34 Terminal Amplifier Port Fault Hierarchy on page 35 <p>NOTE: For wavelength protection ports, this alarm is not masked by any other alarm.</p>

Table 132: DOL PRE Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
port:<chassis>/<slot>/0/PRE	PRE	Fault LED, PRE port	On
port:<chassis>/<slot>/1/PRE			

Table 133: DOL Optical Service Channels (OSCs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
osc:<chassis>/<slot>/0/L1	ROADM2 or ILA	Fault LED, L1 port	On
osc:<chassis>/<slot>/0/C<n>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Table 134: DOL Optical Multiplex Sections (OMSs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
oms:<chassis>/<slot>/0/L1<>	ROADM2 or ILA	Fault LED, L1 port	On
oms:<chassis>/<slot>/0/C<n>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Table 135: DOL Optical Channels (OCHs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/0/C<n>/<channel>	ROADM2	—	—
where the range of <i>n</i> depends on the module and <i>channel</i> is an alphanumeric string.			

Table 136: Wavelength Protection Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
wpsport:<chassis>/<slot>/L<n>	WPS4	Fault LED, Line<n> port	On
where <i>n</i> is in the range of 1A to 4A or 1B to 4B.			

Table 137: Terminal Amplifier Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
osc:<chassis>/<slot>/1/<portNum>.<oscNum>	AMP1	–	–
line:<chassis>/<slot>/1/<portNum>		Fault LED, Line port	On
dcm:<chassis>/<slot>/1/<portNum>		Fault LED, DCM port	
client:<chassis>/<slot>/1/<portNum>		Fault LED, C1 port	

Clearing a LoLightRx Alarm (DOL Entity)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: In some ROADM network topologies with ILAs deployed, amplified spontaneous emissions (ASE) might accumulate sufficiently to cause this alarm to clear on provisioned but unoccupied optical channels. (The ASE will not be high enough to affect optical performance, however.)

1. Retrieve statistics for the affected entity to view the value of the **Optical power received** counter:

```
show statistics current name:identifier
```

2. Do the following:
 - If the alarm is raised against a PRE port, refer to “[DOL Port Power Alarm Thresholds](#)” on page 189, and then go to 3.
 - If the alarm is raised against a DOL OSC, DOL OMS, or DOL OCH, refer to “[DOL OSC Power and Optical Backreflection Alarm Thresholds](#)” on page 186, “[DOL OMS Power Alarm Thresholds](#)” on page 187, or “[DOL OCH Power Alarm Thresholds](#)” on page 189, and then go to 4.

3. Check for and resolve any of the following problems, and then go to 4:
 - The span fiber or patch panel fiber is cut or disconnected or has excessive loss.
 - The amplifier transmitting into the patch fiber has shut down.
 - There is excessive loss on each module that is connected to the alarmed port.
 - There is excessive loss on upstream patch fibers.
4. Check for and resolve any of the following problems:
 - The far-end ROADM2 or ILA is not provisioned.
 - The far-end DOL OMS, DOL OSC, or DOL OCH is administratively disabled.
 - A fiber is either cut or disconnected.
5. Check for alarms on the local DOL entity.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

Clearing a LoLightRx Alarm (wavelength Protection Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve information for the wavelength protection port to view the values of the received-loss-of-light threshold (**LoLightRx Th**) and the optical power received **Opt.Pw.Rx** counter:

`show protection wavelength port name:identifier`
2. Do the following:
 - Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
 - Check for and clear all alarms on the upstream NE.
3. Check for alarms on the local port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

Clearing a LoLightRx Alarm (terminal Amplifier Port)



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve statistics for the port to view the value of the **Optical power received** counter:

show statistics current name:identifier

2. Check for and resolve any of the following problems:
 - The span fiber or patch panel fiber is cut or disconnected or has excessive loss.
 - The amplifier transmitting into the patch fiber has shut down.
 - There is excessive loss on each module that is connected to the alarmed port.
 - There is excessive loss on upstream patch fibers.
 - The far-end port is administratively disabled.
3. Check for alarms on the local port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LoLightTx

Table 138: Alarm Details

Parameter	Description
Code	loLightTx
Description/Cause	Loss of Light, Transmit: The optical power transmitted has dropped below the loss-of-light threshold.
Entities Affected	DOL optical channels (see respective table below).
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing a LoLightTx Alarm" on page 112.
Related Fault Hierarchy	See "DOL OCH Fault Hierarchy" on page 34.

Table 139: DOL Optical Channels (OCHs)

Entity Name	Fault Indicator		
	Module	Indicator	Status
och:<chassis>/<slot>/O/L1/<channel>	ROADM2	—	—
where <i>channel</i> is an alphanumeric string.			
och:<chassis>/<slot>/O/C<n>/<channel>			
where the range of <i>n</i> depends on the module and <i>channel</i> is an alphanumeric string.			

Clearing a LoLightTx Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: In some ROADM network topologies with ILAs deployed, amplified spontaneous emissions (ASE) might accumulate sufficiently to cause this alarm to clear on provisioned but unoccupied optical channels. (The ASE will not be high enough to affect optical performance, however.)

1. Retrieve statistics for the DOL OCH to view the value of the **Optical power received** counter, and then refer to “[DOL OCH Power Alarm Thresholds](#)” on page 189:

```
show statistics current och:identifier
```

2. Ensure that the upstream fiber connections are thoroughly clean and correctly connected.
3. Check for alarms on the DOL optical channel.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LOM

Table 140: Alarm Details

Parameter	Description
Code	lom
Description	Loss of Multiframe: The multiframe alignment process is in the out-of-multiframe state.
Entities Affected	OTN OTU interfaces (see respective table below).
Possible Causes	<ul style="list-style-type: none"> • Either the fiber link or the optical connection is degraded. • The far-end optical transmitter is faulty.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “ Clearing an LOM Alarm ” on page 113.
Related Fault Hierarchy	See “ OTN Interface Fault Hierarchy ” on page 30.

Table 141: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	Fault LED, 200G line port	On
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Clearing an LOM Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
2. Check for and clear all alarms on the far-end optical transmitter.
3. Check for alarms on the local interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LOS

Table 142: Alarm Details

Parameter	Description
Code	los
Description	Loss of Signal: The local port has detected a loss of received signal power.

Table 142: Alarm Details (continued)

Parameter	Description
Entities Affected	<ul style="list-style-type: none"> Optical channel interfaces OTN OTU interfaces Ethernet interfaces SONET/SDH interfaces Wavelength channels Fibre channel interfaces <p>See respective tables below.</p>
Possible Causes	<ul style="list-style-type: none"> The fiber input is disconnected. The far-end interface is not yet provisioned. The far-end transmit laser is disabled or has failed.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing an LOS Alarm" on page 116.
Related Fault Hierarchy	<p>See:</p> <ul style="list-style-type: none"> Common Fault Hierarchy - OTN and CBR Ports on page 29 OTN Interface Fault Hierarchy on page 30 Ethernet Interface Fault Hierarchy on page 31 OC192, WAN PHY Over OC192 Interface Fault Hierarchy on page 31 STM64, WAN PHY Over STM64 Interface Fault Hierarchy on page 32 Fibre Channel Interface Fault Hierarchy on page 32

Table 143: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 144: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 145: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 146: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 147: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On

¹ Monitoring and reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.

Table 148: Fibre Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
8gfc:<chassis>/<slot>/1/<port>/subport	UFM6	Fault LED, 10-Gbps port	On
10gfc:<chassis>/<slot>/1/<port>/subport	UFM6	Fault LED, 10-Gbps port	On

Clearing an LOS Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
2. Ensure that the light path on the optical line system, if it exists, is correctly provisioned and fault free.
3. Check for and resolve the following problems:
 - The far-end transmitter is disabled or has failed.
 - The far-end interface is not provisioned.
4. Check for alarms on the local interface
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LoSpecRx

Table 149: Alarm Details

Parameter	Description
Code	loSpecRx

Table 149: Alarm Details (continued)

Parameter	Description
Description	Loss out of Specification, Receive: The optical loss received is outside the specification range.
Entities Affected	DOL ports (see respective table below).
Possible Cause	Either the upstream fiber link or the optical connection is degraded.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a LoSpecRx Alarm” on page 117.
Related Fault Hierarchy	See “DOL Port Fault Hierarchy” on page 33.

Table 150: DOL Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
port:<chassis>/<slot>/0/L1	ROADM2 or ILA	Fault LED, L1 port	On
port:<chassis>/<slot>/0/C<n>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Clearing a LoSpecRx Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve statistics for the DOL port to view the value of the **Optical power loss in recv. direction** counter, and then refer to “DOL Rx-loss Alarm Thresholds” on page 190:

```
show statistics current port:identifier
```
2. Ensure that the upstream fiber connections are intact, thoroughly clean, and correctly connected.
3. Check for alarms on the DOL port.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LoSync

Table 151: Alarm Details

Parameter	Description
Code	loSync
Description	Loss of Synchronization: The signal received on the local interface is sufficiently degraded that it cannot be synchronized.
Entities Affected	<ul style="list-style-type: none"> Ethernet interfaces Fibre Channel interfaces See respective tables below.
Possible Causes	<ul style="list-style-type: none"> Either the fiber link or the optical connection is severely degraded. The far-end optical transmitter is faulty.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a LoSync Alarm” on page 119 .
Related Fault Hierarchy	See “Ethernet Interface Fault Hierarchy” on page 31 and “Fibre Channel Interface Fault Hierarchy” on page 32 .

Table 152: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 153: Fibre Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
8gfc:<chassis>/<slot>/1/<port>/subport	UFM6	Fault LED, 10-Gbps port	On

Table 153: Fibre Channel Interfaces (continued)

Entity Name	Module	Fault Indicator	
		Indicator	Status
10gfc:<chassis>/<slot>/1/<port>/subport	UFM6	Fault LED, 10-Gbps port	On

Clearing a LoSync Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve detailed information for the interface, and ensure that the value of the **Optical Power Rx** counter is within the range indicated by the **Optical Power Received Minimum Threshold** and **Optical Power Received Maximum Threshold** values.

show interface name:identifier detail

2. Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
3. Check for and clear alarms on the far-end optical transmitter.
4. Check for alarms on the local interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

LPBK

Table 154: Condition Details

Parameter	Description
Code	lpbk
Description/Cause	Loopback Operated: A loopback test is active on the local port.
Entities Affected	<ul style="list-style-type: none"> • OTN OTU interfaces (see respective table below). • Ethernet interfaces (see respective table below). • SONET/SDH interfaces (see respective table below).
Default Severity	Not alarmed. (Default severity should not be changed.)
Service Affecting	No (false).

Table 154: Condition Details (continued)

Parameter	Description
Condition Clearing	This condition clears when the loopback is released. For information, see the <i>BT17800 Series Software Configuration Guide</i> .
Related Fault Hierarchy	See "Common Fault Hierarchy - OTN and CBR Ports" on page 29.

Table 155: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	–	–
otu4:<chassis>/<slot>/<1>/<1>	UFM4	–	–
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC		
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC		
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 156: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	–	–
100ge:<chassis>/<slot>/<1>/<port>	UFM6		
40ge:<chassis>/<slot>/<1>/<port>	UFM6		
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6		
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC		

Table 157: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	–	–
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

MemHighUsage

Table 158: Alarm Details

Parameter	Description
Code	memHighUsage
Description/Cause	Memory High Usage.
Entities Affected	Management and traffic modules (see respective table below).
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	This alarm indicates that memory usage on the module has exceeded 90%. For information about clearing this alarm, contact your next level of support.
Related Fault Hierarchy	–

Table 159: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

ModTempHighTh

Table 160: Alarm Details

Parameter	Description
Code	modTempHighTh
Description	Module Temperature Above High Threshold: The temperature of the MSA transceiver is above the high-temperature threshold. For information, see “ Temperature Thresholds - MSA Transceivers ” on page 183.
Entities Affected	OTN OTU interfaces (see respective table below).
Possible Causes	<ul style="list-style-type: none"> The ambient temperature is above the normal operating range of the chassis. The output power of the MSA transceiver is excessive.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See “ Clearing a ModTempHighTh Alarm ” on page 123.
Related Fault Hierarchy	See “ Common Fault Hierarchy - OTN and CBR Ports ” on page 29.

Table 161: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<subslot>/<port>	UFM4	Fault LED, 100G line port	On

Clearing a ModTempHighTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Optionally retrieve statistics for the OTU4 interface to view the value of the **Module temperature** parameter:


```
show statistics current otu4:identifier
```
2. Check for and resolve any of the following problems:
 - Either a cooling module is not present in the chassis or is present but is operationally down or administratively disabled.
 - A “[FanSpeedLowTh](#)” on [page 78](#) alarm has been raised against a cooling module.
 - An “[EnvTempHighTh](#)” on [page 60](#) alarm has been raised against the UFM.
 - The ambient temperature is higher than the specified operating range for the chassis. For information, see the *BT17800 Series Hardware Overview and Installation Guide*.
3. Check for alarms on the interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

ModTempLowTh

Table 162: Alarm Details

Parameter	Description
Code	modTempLowTh
Description	Module Temperature Below Low Threshold: The temperature of the MSA transceiver is below low-temperature threshold. For information, see “ Temperature Thresholds - MSA Transceivers ” on page 183 .
Entities Affected	OTN OTU interfaces (see respective table below).
Possible Cause	The ambient temperature is lower than the normal operating range of the chassis.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See “ Clearing a ModTempLowTh Alarm ” on page 124 .
Related Fault Hierarchy	See “ Common Fault Hierarchy - OTN and CBR Ports ” on page 29 .

Table 163: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<subslot>/<port>	UFM4	Fault LED, 100G line port	On

Clearing a ModTempLowTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Optionally retrieve statistics for the OTU4 interface to view the value of the **Module temperature** parameter:

`show statistics current otu4:identifier`
2. Retrieve environment information to view data on equipment temperature, and ensure that the ambient temperature is within the specified range for chassis operation. For information, see the *BT17800 Series Hardware Overview and Installation Guide*.

`show environment`
3. Check for alarms on the interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

ModTempShutdown

Table 164: Alarm Details

Parameter	Description
Code	modTempShutdown
Description	Module Temperature Shutdown: The temperature of the MSA transceiver has exceeded the high-temperature-shutdown threshold, causing the transmit laser to shut down. For information, see "Temperature Thresholds - MSA Transceivers" on page 183.
Entities Affected	OTN OTU interfaces (see respective table below).
Possible Causes	The ambient temperature is excessively higher than the normal operating range of the MSA transceiver.
Default Severity	Critical
Service Affecting	Yes (true).

Table 164: Alarm Details (continued)

Parameter	Description
Alarm Clearing	See "Clearing a ModTempShutdown Alarm" on page 125.
Related Fault Hierarchy	See "Common Fault Hierarchy - OTN and CBR Ports" on page 29.

Table 165: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<subslot>/<port>	UFM4	Fault LED, 100G line port	On

Clearing a ModTempShutdown Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing a traffic module.

1. Check for and resolve any of the following problems:
 - Either a cooling module is not present in the chassis or is present but is operationally down or administratively disabled.
 - A "FanSpeedLowTh" on page 78 has been raised against a cooling module.
 - The ambient temperature is higher than the specified operating range for the chassis. For information, see the *BT17800 Series Hardware Overview and Installation Guide*.
2. Check for alarms on the OTU4 interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
3. Replace the UFM4.
4. Check for alarms on the interface.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

MS-AIS

Table 166: Condition Details

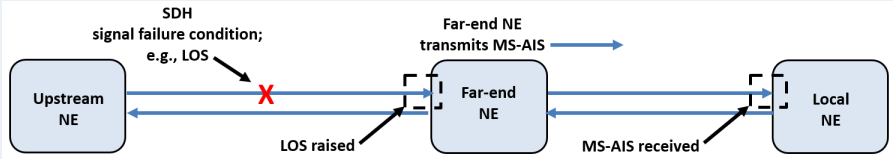
Parameter	Description
Code	ms-ais
Description/Cause	<p>Multiplex Section Alarm Indication Signal, SDH: The local port has received an MS-AIS signal from the NE at the far end of the fiber, indicating that no SDH signal is being transmitted upstream of (and toward) the local NE. (See also “Maintenance Signaling” on page 35.)</p> 
Entities Affected	SDH (STM64, WAN PHY STM64) interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	Yes (true).
Condition Clearing	See “Clearing an MS-AIS Condition” on page 126.
Related Fault Hierarchy	See “STM64, WAN PHY Over STM64 Interface Fault Hierarchy” on page 32.

Table 167: SDH (STM64, WAN PHY STM64) Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
stm64:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	—	—
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Clearing an MS-AIS Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms on the upstream NE.
2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.

- If the condition does not clear, contact your next level of support.

MS-RDI

Table 168: Alarm Details

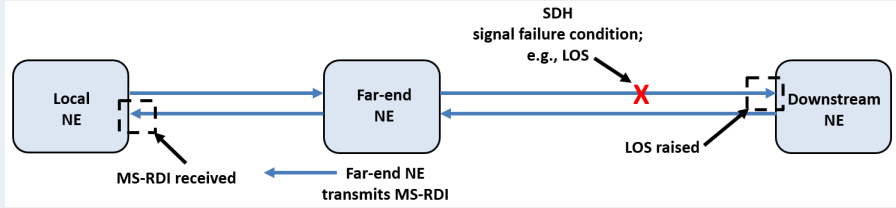
Parameter	Description
Code	ms-rdi
Description/Cause	<p>Multiplex Section Remote Defect Indication, SDH: The local interface has received an MS-RDI signal from the NE at the far end of the fiber, indicating that no SDH signal is being transmitted downstream of (and away from) the local NE. (See also “Maintenance Signaling” on page 35.)</p> 
Entities Affected	SDH (STM64, WAN PHY STM64) interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	No (false).
Alarm Clearing	See “Clearing an MS-RDI Condition” on page 127.
Related Fault Hierarchy	See “STM64, WAN PHY Over STM64 Interface Fault Hierarchy” on page 32.

Table 169: SDH (STM64, WAN PHY STM64) Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
stm64:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	—	—
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Clearing an MS-RDI Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms on the downstream NE.

2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

NonCoLocatedController

Table 170: Alarm Details

Parameter	Description
Code	nonCoLocatedController
Description/Cause	Controllers are in Different Chassis: The active CMMs in a multi-chassis configuration are not located in the same chassis.
Entities Affected	Equipment (see respective table below). NOTE: This alarm is supported on the BT17814 and BT17802 chassis only.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See "NonCoLocatedController" on page 128.
Related Fault Hierarchy	—

Table 171: Equipment

Entity Name	Fault Indicator		
	Equipment	Indicator	Status
chassis:<1 2>	BT17814 or BT17802	See equipment specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Clearing a NonCoLocatedController Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve information for the hub and satellite chassis:


```
show system chassis
```
2. Ensure that multi-chassis system is correctly configured. For information, see the *BT17800 Series Software Configuration Guide*.

3. Check for alarms on the chassis.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

ObrHt

Table 172: Alarm Details

Parameter	Description
Code	obrHt
Description	Optical Backreflection High Threshold Exceeded: The optical backreflection has exceeded the high threshold.
Entities Affected	<ul style="list-style-type: none"> • DOL optical service channels (see respective table below). • Terminal amplifier Optical Supervisory Channels (see respective table below).
Possible Cause	The fiber connection is poor.
Default Severity	Minor
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an ObrHt Alarm” on page 130.
Related Fault Hierarchy	See: <ul style="list-style-type: none"> • DOL OSC Fault Hierarchy on page 33 • Terminal Amplifier Port Fault Hierarchy on page 35

Table 173: DOL Optical Service Channels (OSCs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
osc:<chassis>/<slot>/0/L1	ROADM2 or ILA	Fault LED, L1 port	Fault LED, L1 port

Table 174: Terminal Amplifier Optical Supervisory Channels (OSCs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
osc:<chassis>/<slot>/1/<portNum>.<oscNum>	AMP1	–	–

Clearing an ObrHt Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Optionally, if the alarm is raised against a DOL OSC entity, refer to “[DOL OSC Power and Optical Backreflection Alarm Thresholds](#)” on page 186 for optical-backreflection threshold information.
2. Ensure that the span fiber at the Line output port is intact, thoroughly clean, and correctly connected.
3. Ensure that the fiber connectors are compatible.
4. Ensure that any downstream fiber connections are thoroughly cleaned and correctly connected, and that the span loss at the downstream node is in the supported range for operation. For more information about span loss, see the *BT17800 Series Software Configuration Guide*.
5. Check for alarms on the affected OSC.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.



NOTE: The cleaning and reconnecting of fibers can increase (by several minutes) the amount of time the system requires to re-evaluate optical back-reflection ratio statistics for a DOL OSC entity and, therefore, show the `obrHt` alarm as cleared.

OchAis

Table 175: Condition Details

Parameter	Description
Code	<code>ochAis</code>
Description	Alarm Indication Signal (AIS), OCH: The local NE has received an OCH-AIS signal from the far-end NE, indicating that no signal is being transmitted upstream of (and toward) the local NE.
Entities Affected	DOL optical channels (see respective table below).
Default Severity	Not alarmed.

Table 175: Condition Details (continued)

Parameter	Description
Service Affecting	Yes (true).
Condition Clearing	See "Clearing an OchAis Condition" on page 131.
Related Fault Hierarchy	See "DOL OCH Fault Hierarchy" on page 34.

Table 176: DOL Optical Channels (OCHs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/OL1/<channel> where <i>channel</i> is an alphanumeric string.	ROADM2	—	—
och:<chassis>/<slot>/O/C<n>/<channel> where <i>n</i> depends on the module and <i>channel</i> is an alphanumeric string.			

Clearing an OchAis Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms upstream of the local NE.
2. Check for excessive loss on the receive span fiber, and, if required, ensure that all upstream fibers are thoroughly cleaned and correctly connected.
3. Ensure that all upstream fibers are thoroughly clean and correctly connected.
4. Check for conditions on the DOL optical channel.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

OchOci

Table 177: Alarm Details

Parameter	Description
Code	ochOci
Description	Open Connection Indication (OCI), OCH: The optical channel has received an OCH-OCI signal from the NE at the far end of the fiber, indicating that there is a missing optical cross-connect on an upstream node.
Entities Affected	DOL optical channels (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing an OchOci Condition" on page 132 .
Related Fault Hierarchy	See "DOL OCH Fault Hierarchy" on page 34 .

Table 178: DOL Optical Channels (OCHs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/O/L1/<channel>	ROADM2	—	—

where *channel* is an alphanumeric string.

Clearing an OchOci Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

- If required, retrieve cross-connect information for the upstream node:


```
show dol och-xcon
```
- Do one of the following, referring to the *BT17800 Series Software Configuration Guide* for information:
 - Provision the missing cross-connect on the upstream node.
 - Delete the cross-connect provisioned on the local DOL OCH.
- Check for conditions on the local DOL OCH.
 - If the condition clears, you have completed this procedure.

- If the condition does not clear, contact your next level of support.

OchUeq

Table 179: Alarm Details

Parameter	Description
Code	ochUeq
Description/Cause	OCH Unequipped: The downstream optical channel is not provisioned.
Entities Affected	DOL optical channels (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing an OchUeq Alarm" on page 133.
Related Fault Hierarchy	See "DOL OCH Fault Hierarchy" on page 34.

Table 180: DOL Optical Channels (OCHs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/O/L1/<channel>	ROADM2	—	—

where *channel* is an alphanumeric string.

Clearing an OchUeq Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Provision the DOL OCH on the downstream node. For information, see the *BT17800 Series Software Configuration Guide*.
2. Check for alarms on the local DOL OCH.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

OCI

Table 181: Alarm Details

Parameter	Description
Code	oci
Description/Cause	<p>Open Connection Indication, ODU: The local interface has received an ODU-OCI signal from the far-end NE, indicating that an optical cross-connect is not present on an upstream node.</p> <p>NOTE: The local interface that receives the ODU-OCI signal raises this alarm only if the local interface is part of a cross-connect. If the local interface is not part of a cross-connect, the received ODU-OCI signal is ignored.</p> <p>An interface transmits an ODU-OCI signal downstream if the interface is open (that is, not part of any cross-connect).</p> <p>For multiplexed ODU interfaces, the ODU-OCI signal is transmitted (and therefore received) on the containing ODU interface, not on the individual ODU sub-interfaces. The containing ODU interface transmits the ODU-OCI signal if none of the contained ODU sub-interfaces is part of a cross-connect. The containing ODU interface stops transmitting the ODU-OCI signal if at least one of the contained ODU sub-interfaces is part of a cross-connect. The ODU-OCI signal on multiplexed interfaces does not indicate which specific sub-interface is open (that is, not part of a cross-connect).</p>
Entities Affected	OTN ODU interfaces (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an OCI Alarm” on page 135.
Related Fault Hierarchy	See “OTN Interface Fault Hierarchy” on page 30.

Table 182: OTN ODU Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
odu4:<chassis>/<slot>/2/1/<subport.och.tributary>	UFM6	Fault LED, 200-Gbps port, 400G Coherent MSA XCVR	On
odu3:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2e:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu4:<chassis>/<slot>/1/1	UFM4	Fault LED, 100-Gbps port, 100G Coherent MSA XCVR	
odu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100-Gbps port	
odu2:<chassis>/<slot>/<subslot>/<port.sub-interface>			
odu2e:<chassis>/<slot>/<subslot>/<port.sub-interface>			
NOTE: Supported on UFM3 only.			
odu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10-Gbps port	
odu2e:<chassis>/<slot>/<subslot>/<port>			
NOTE: Supported on UFM3 only.			

Clearing an OCI Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Provision the missing cross-connect. For information, see the *BT17800 Series Software Configuration Guide*.
2. Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

OdtgMism

Table 183: Condition Details

Parameter	Description
Code	odtgMism
Description/Cause	ODTG Mismatch: The ODU Data Tributary Group (ODTG) configuration on a multiplexed interface is inconsistent at the two ends of the fiber. This means that the ODU subinterface cross-connected at the local end does not match the ODU subinterface cross-connected at the far end.
Entities Affected	<ul style="list-style-type: none"> OTN ODU interfaces (see table)
Default Severity	Critical
Service Affecting	Yes (true)
Condition Clearing	See "Clearing an OdtgMism Alarm" on page 136.
Related Fault Hierarchy	See "OTN Interface Fault Hierarchy" on page 30.

Table 184: OTN ODU Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
odu4:<chassis>/<slot>/2/1/<subport.och.tributary>	UFM6	Fault LED, 200-Gbps port, 400G Coherent MSA XCVR	On
odu4:<chassis>/<slot>/1/1	UFM4	Fault LED, 100-Gbps port, 100G Coherent MSA XCVR	
odu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100-Gbps port	

Clearing an OdtgMism Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Ensure that the interface endpoints at both ends of the fiber are configured for the same ODU subinterface. For information, see the *BT17800 Series Software Configuration Guide*.
2. Check for alarms on the local interface.

- If the alarm clears, you have completed this procedure.
- If the alarm does not clear, contact your next level of support.

ODU-AIS

Table 185: Condition Details

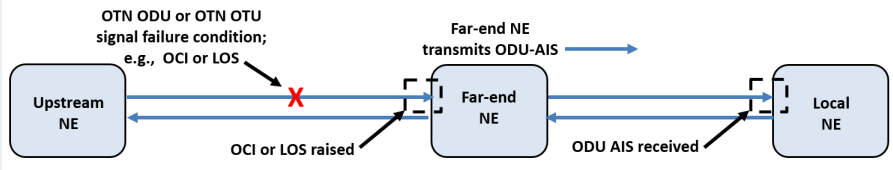
Parameter	Description
Code	odu-ais
Description/Cause	<p>ODU Alarm Indication Signal: The local interface has received an ODU-AIS signal from the NE at the far end of the fiber, indicating that no OTN OTU or OTN ODU signal is being transmitted upstream of (and toward) the local NE. (See also “Maintenance Signaling” on page 35.)</p>  <p>In addition to standard use of ODU-AIS signals, the BT17800 originates an ODU-AIS signal in the following situations:</p> <ul style="list-style-type: none"> • A multiplexed ODU sub-interface transmits an ODU-AIS signal when the sub-interface detects an ODTG tributary mismatch. • On a UFM6, an optical channel transmits a default ODU4 signal containing ODU-AIS for each ODU4 interface not created.
Entities Affected	<ul style="list-style-type: none"> • OTN OTU interfaces (see respective table below). • OTN ODU interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	Yes (true).
Condition Clearing	See “Clearing an ODU-AIS Condition” on page 138.
Related Fault Hierarchy	See “OTN Interface Fault Hierarchy” on page 30.

Table 186: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<subslot>/<port>	UFM4	–	–
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	–	–

Table 187: OTN ODU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
odu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	—	—
odu3:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2e:<chassis>/<slot>/<2>/<1>/<subport.och.tributary.sub-interface>			
odu4:<chassis>/<slot>/<1>/<1>	UFM4		
odu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC		
odu2:<chassis>/<slot>/<subslot>/<port.sub-interface>			
odu2e:<chassis>/<slot>/<subslot>/<port.sub-interface>			
NOTE: Supported on UFM3 only.			
odu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC		
odu2e:<chassis>/<slot>/<subslot>/<port>			
NOTE: Supported on UFM3 only.			

Clearing an ODU-AIS Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms upstream of the local NE.
2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

OduMism

Table 188: Condition Details

Parameter	Description
Code	oduMism

Table 188: Condition Details (continued)

Parameter	Description
Description/Cause	ODU Mismatch: The ODU type in the received ODU signal does not match the expected type.
Entities Affected	<ul style="list-style-type: none"> OTN ODU interfaces (see table)
Default Severity	Not alarmed
Service Affecting	No (false)
Condition Clearing	See “Clearing an OduMism Alarm” on page 140.
Related Fault Hierarchy	See “OTN Interface Fault Hierarchy” on page 30.

Table 189: OTN ODU Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
odu4:<chassis>/<slot>/2/1/<subport.och.tributary>	UFM6	Fault LED, 200-Gbps port, 400G Coherent MSA XCVR	On
odu3:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2e:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu4:<chassis>/<slot>/1/1	UFM4	Fault LED, 100-Gbps port, 100G Coherent MSA XCVR	
odu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100-Gbps port	
odu2:<chassis>/<slot>/<subslot>/<port.sub-interface>			
odu2e:<chassis>/<slot>/<subslot>/<port.sub-interface>			
NOTE: Supported on UFM3 only.			
odu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10-Gbps port	
odu2e:<chassis>/<slot>/<subslot>/<port>			
NOTE: Supported on UFM3 only.			

Clearing an OduMism Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Ensure the ODU endpoints at both ends of the fiber are the same ODU type (that is, ensure both are ODU2 or both are ODU2e or both are ODU4). For information, see the *BT17800 Series Software Configuration Guide*.
2. Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

OmsAis

Table 190: Condition Details

Parameter	Description
Code	OmsAis
Description	Alarm Indication Signal, OMS: The local NE has received an OMS-AIS signal from the far-end NE, indicating that no signal is being transmitted upstream of (and toward) the local NE.
Entities Affected	DOL optical multiplex sections (see respective table below).
Default Severity	Not alarmed.
Service Affecting	Yes (true).
Condition Clearing	"Clearing an OmsAis Condition" on page 141
Related Fault Hierarchy	See "DOL OMS Fault Hierarchy" on page 34.

Table 191: DOL Optical Multiplex Sections (OMSs)

Entity Name	Fault Indicator		
	Module	Indicator	Status
oms:<chassis>/<slot>/O/L1<>	ROADM2 or ILA	Fault LED, L1 port	On
oms:<chassis>/<slot>/O/C<n>		Fault LED, C<n> port	
where the range of <i>n</i> depends on the module.			

Clearing an OmsAis Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms upstream of the local NE.
2. Ensure that the far-end NE has at least one optical channel provisioned and cross-connected.
3. Check for excessive loss on the receive span fiber, and, if required, ensure that all upstream fibers are intact, thoroughly clean, and correctly connected.
4. Check for conditions on the DOL OMS.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

OneCableDisconnected

Table 192: Alarm/condition Details

Parameter	Description
Code	oneCableDisconnect
Description/Cause	One Multi-Chassis Cable Disconnected: A cable that connects two CMMs in a multi-chassis configuration is not connected to a CMM.
Entities Affected	Equipment (see respective table below). NOTE: This alarm is supported on the BT17814 and BT17802 chassis only.
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a OneCableDisconnected Alarm” on page 142 .
Related Fault Hierarchy	—

Table 193: Equipment

Entity Name	Equipment	Fault Indicator	
		Indicator	Status
chassis:<1 2>	BT17814 or BT17802	See equipment specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Clearing a OneCableDisconnected Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Inspect the cable connecting the CMMs, and ensure that it is intact and correctly connected.
2. Check for alarms on the chassis.
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

OprHighTh

Table 194: Alarm Details

Parameter	Description
Code	oprHighTh
Description	Optical Power Received Above High Threshold: The optical power received is above the high threshold.
Entities Affected	<ul style="list-style-type: none"> • Optical channel interfaces (see respective table below). • OTN OTU interfaces (see respective table below). • Ethernet interfaces (see respective table below). • SONET/SDH interfaces (see respective table below). • Wavelength channels (see respective table below).
Possible Causes	<ul style="list-style-type: none"> • There is inadequate attenuation on the optical connection to signal source. • The output power on the remote optical transmitter is too high.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See "Clearing an OprHighTh Alarm" on page 144.

Table 194: Alarm Details (continued)

Parameter	Description
Related Fault Hierarchy	See "Common Fault Hierarchy - OTN and CBR Ports" on page 29.

Table 195: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 196: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 197: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 198: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 199: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On
¹ Reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.			

Clearing an OprHighTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve detailed information for the interface to determine whether the value of the **Optical Power Rx** counter is within the range indicated by the **Optical Power Received Minimum Threshold** and **Optical Power Received Maximum Threshold** values.

show interface name:identifier detail

2. Check for and clear alarms on the far-end optical transmitter.
3. Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Add an attenuation pad in the optical path.
5. Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

OprLowTh

Table 200: Alarm Details

Parameter	Description
Code	oprLowTh
Description	Optical Power Received Below Low Threshold: The optical power received is below the low threshold.
Entities Affected	<ul style="list-style-type: none"> Optical channel interfaces (see respective table below). OTN OTU interfaces (see respective table below). Ethernet interfaces (see respective table below). SONET/SDH interfaces (see respective table below). Wavelength channels (see respective table below).
Possible Causes	<ul style="list-style-type: none"> There is excessive attenuation on either the fiber link or the optical connection. The far-end optical transmitter is faulty.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See “Clearing an OprLowTh Alarm” on page 147.
Related Fault Hierarchy	See “Common Fault Hierarchy - OTN and CBR Ports” on page 29.

Table 201: Optical Channel Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 202: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 203: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 204: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 205: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On

¹ Reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.

Clearing an OprLowTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve detailed information for the interface to determine whether the value of the **Optical Power Rx** counter is within the range indicated by the **Optical Power Received Minimum Threshold** and **Optical Power Received Maximum Threshold** values.

show interface name:identifier detail

2. Check for and clear alarms on the far-end optical transmitter.
3. Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Inspect the fiber at the local port, and ensure that it is intact, thoroughly clean, and correctly connected to the port.
5. Check for alarms on the local interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

OptHighTh

Table 206: Alarm Details

Parameter	Description
Code	optHighTh
Description	Optical Power Transmitted Above High Threshold: The optical power transmitted is above the high threshold.

Table 206: Alarm Details (continued)

Parameter	Description
Entities Affected	<ul style="list-style-type: none"> Optical channel interfaces (see respective table below). OTN OTU interfaces (see respective table below). Ethernet interfaces (see respective table below). SONET/SDH interfaces (see respective table below). Wavelength channels (see respective table below).
Possible Cause	The optical transmitter is faulty.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See “Clearing an OptHighTh Alarm” on page 149.
Related Fault Hierarchy	See “Common Fault Hierarchy - OTN and CBR Ports” on page 29.

Table 207: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 208: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 209: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 210: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 211: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On

¹ Reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.

Clearing an OptHighTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing equipment.

1. Retrieve detailed information for the interface to determine whether the value of the **Optical Power Tx** counter is within the range indicated by the **Optical Power Transmitted Minimum Threshold** and **Optical Power Transmitted Maximum Threshold** values.

show interface name:identifier detail

2. Replace either the pluggable transceiver installed in the port or, if the alarm is raised against an interface provisioned on an integrated MSA, the UFM.
3. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

OptLowTh

Table 212: Alarm Details

Parameter	Description
Code	optLowTh
Description	Optical Power Transmitted Below Low Threshold: The optical power transmitted is below the low threshold.
Entities Affected	<ul style="list-style-type: none"> • Optical channel interfaces (see respective table below). • OTN OTU interfaces (see respective table below). • Ethernet interfaces (see respective table below). • SONET/SDH interfaces (see respective table below). • Wavelength channels (see respective table below).
Possible Cause	The transmit laser is failing.
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See “Clearing an OptLowTh Alarm” on page 152.
Related Fault Hierarchy	See “Common Fault Hierarchy - OTN and CBR Ports” on page 29.

Table 213: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 214: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 215: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	Fault LED, 100G port	On
100ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
40ge:<chassis>/<slot>/<1>/<port>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6	Fault LED, 10/40/100G port	
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC	Fault LED, 10G port	

Table 216: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Table 217: Wavelength Channels

Entity Name	Module	Fault Indicator	
		Indicator	Status
channel:<chassis>/<slot>/<subslot>/<port.channel>	1x CFP BIC ¹	Fault LED, 100G port	On

¹ Reporting of this alarm for a wavelength channel is supported only on multiwavelength CFP transceivers.

Clearing an OptLowTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Hardware Overview and Installation Guide* before replacing equipment.

1. Retrieve detailed information for the interface to determine whether the value of the **Optical Power Tx** counter is within the range indicated by the **Optical Power Transmitted Minimum Threshold** and **Optical Power Transmitted Maximum Threshold** values.

show interface name:identifier detail

2. Replace either the pluggable transceiver installed in the port or, if the alarm is raised against an interface provisioned on an integrated MSA, the UFM.
3. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

OTU-AIS

Table 218: Condition Details

Parameter	Description
Code	otu-ais
Description/Cause	<p>OTU Alarm Indication Signal: The local interface has received an OTU-AIS signal from the NE at the far end of the fiber, indicating that no OTN OTU signal is being transmitted upstream of (and toward) the local NE.</p> <p>NOTE: This signal is generated by non-BT17800 NEs only.</p>

Table 218: Condition Details (continued)

Parameter	Description
Entities Affected	<ul style="list-style-type: none"> OTN OTU interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	Yes (true).
Condition Clearing	The condition will clear when the fault that resulted in the transmission of the OTU-AIS signal is resolved.
Related Fault Hierarchy	–

Table 219: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	Fault LED, 200G line port	On
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

PartitionFault

Table 220: Alarm Details

Parameter	Description
Code	partitionFault
Description/Cause	Disk Partition Fault Detected.
Entities Affected	Management and traffic modules (see respective table below).
Default Severity	Major
Service Affecting	No (false).
Alarm Clearing	See “Clearing a PartitionFault Alarm” on page 154.

Table 220: Alarm Details (continued)

Parameter	Description
Related Fault Hierarchy	—

Table 221: Management and Traffic Modules

Entity Name	Modules	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

Clearing a ParitionFault Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.



NOTE: Refer to the *BT17800 Series Software Configuration Guide* before rebooting a traffic module.

1. Perform a warm reboot of the module.
2. Check for alarms on the module.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

PosRxHigh

Table 222: Alarm Details

Parameter	Description
Code	posRxHigh

Table 222: Alarm Details (continued)

Parameter	Description
Description/Cause	Receive Power Out of Specification, High: The optical power received is above the specified range for operation.
Entities Affected	DOL optical channels (see respective table below).
Default Severity	Minor
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a PosRxHigh Alarm” on page 155.
Related Fault Hierarchy	See “DOL OCH Fault Hierarchy” on page 34.

Table 223: DOL Optical Channels (OCHs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/O/L1/<channel> where <i>channel</i> is an alphanumeric string.	ROADM2	—	—
och:<chassis>/<slot>/O/C<n>/<channel> where <i>n</i> depends on the module and <i>channel</i> is an alphanumeric string.			

Clearing a PosRxHigh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

- Retrieve PM statistics for the DOL OCH:
show statistics current och:identifier
- Refer to “DOL OCH Power Alarm Thresholds” on page 189 to determine whether the optical power received is higher than the specified range for operation.
- If the optical power received is too high, add an attenuation pad in the optical path to bring the power down to a level within the specified range.
- Check for alarms on the DOL OCH.
 - If the alarm clears, you have completed this procedure.

- If the alarm does not clear, contact your next level of support.

PosRxLow

Table 224: Alarm Details

Parameter	Description
Code	posRxLow
Description	Receive Power Out of Specification, Low: The optical power received is below the specified range for operation.
Entities Affected	<ul style="list-style-type: none"> • DOL optical multiplex sections (see respective table below). • DOL optical channels (see respective table below).
Possible Cause	
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing a PosRxHigh Alarm" on page 155 .
Related Fault Hierarchy	See: <ul style="list-style-type: none"> • DOL OMS Fault Hierarchy on page 34 • DOL OCH Fault Hierarchy on page 34

Table 225: DOL Optical Multiplex Sections (OMSs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
oms:<chassis>/<slot>/O/L1<>	ROADM2 or ILA	—	—
oms:<chassis>/<slot>/O/C<n>			
where the range of <i>n</i> depends on the module.			

Table 226: DOL Optical Channels (OCHs)

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/O/L1/<channel>	ROADM2	—	—

where *channel* is an alphanumeric string.

och:<chassis>/<slot>/O/C<n>/<channel>

where *n* depends on the module and *channel* is an alphanumeric string.

Clearing a PosRxLow Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve statistics for the DOL entity:
show statistics current name:identifier
2. Refer to “[DOL OCH Power Alarm Thresholds](#)” on page 189 or “[DOL OMS Power Alarm Thresholds](#)” on page 187 to determine whether the optical power received for the entity is lower than the specified range for operation.
3. If the optical power received is too low, do the following to bring the power up to a level within the range, retrieving statistics for the entity after each task:
 - Clean the fibers connected to the affected ports.
 - Change the patch cord fiber.
 - Check the source of the entity to determine whether it is transmitting at an adequate level.
 - Check the fibers and any attenuators in the path to ensure that no unintentional attenuation has been added to the path.
4. Check for alarms on the DOL entity.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

PosTxHigh

Table 227: Alarm Details

Parameter	Description
Code	posTxHigh
Description/Cause	Transmit Power Out of Specification, High: The optical power transmitted is higher than the specified range for operation.
Entities Affected	DOL optical channels (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a PosTxHigh Alarm” on page 158.
Related Fault Hierarchy	See “DOL OCH Fault Hierarchy” on page 34.

Table 228: DOL Optical Channels (OCHs)

Entity Name	Module	Fault Indicator	
		Indicator	Status

och:<chassis>/<slot>/O/L1/<channel>

ROADM2

—

—

where *channel* is an alphanumeric string.

och:<chassis>/<slot>/O/C<n>/<channel>

where *n* depends on the module and *channel* is an alphanumeric string.

Clearing a PosTxHigh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve statistics for the DOLOCH:

show statistics current och:identifier

2. Refer to “DOL OCH Power Alarm Thresholds” on page 189 to determine whether the optical power transmitted is out of the specified range for operation.

3. If the optical power transmitted is too high, add an attenuation pad in the optical path to bring the power to a level within the range.
4. Check for alarms on the DOL OCH.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

PosTxLow

Table 229: Alarm Details

Parameter	Description
Code	posTxLow
Description/Cause	Transmit Power Out of Specification, Low: The optical power transmitted is below the specified range for operation.
Entities Affected	DOL optical channels (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a PosTxLow Alarm” on page 159.
Related Fault Hierarchy	See “DOL OCH Fault Hierarchy” on page 34.

Table 230: DOL Optical Channels (OCHs)

Entity Name	Fault Indicator		
	Module	Indicator	Status
och:<chassis>/<slot>/O/L1/<channel> where <i>channel</i> is an alphanumeric string.	ROADM2	—	—
och:<chassis>/<slot>/O/C<n>/<channel> where <i>n</i> depends on the module and <i>channel</i> is an alphanumeric string.			

Clearing a PosTxLow Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve statistics for the DOL OCH:

```
show statistics current och:identifier
```

2. Refer to [“DOL OCH Power Alarm Thresholds” on page 189](#) to determine whether the optical power transmitted is lower than the range specified for operation.
3. If the optical power transmitted is too low, ensure that the upstream fiber connections are intact, thoroughly clean, and correctly connected.
4. Check for alarms on the DOL OCH.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

PowerAbsent

Table 231: Alarm Details

Parameter	Description
Code	powerAbsent
Description	No Power Available: No power is available to the power entry module (PEM). CAUTION: Continued operation might cause equipment damage.
Entities Affected	Equipment (see respective table below).
Possible Causes	<ul style="list-style-type: none"> • AC PEM: The input AC voltage is either less than 90 Vac or greater than 255 Vac, and the output DC voltage is either less than 40 Vdc or greater than 60 Vdc. • DC PEM: The input and output DC voltages are either less than 40 Vdc or greater than 60 Vdc.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a PowerAbsent Alarm” on page 161 .
Related Fault Hierarchy	—

Table 232: Equipment

Entity Name	Fault Indicator		
	Equipment	Indicator	Status
pem:<chassis>/<slot>	PEM	See the PEM specifications in the <i>BT17800 Series Hardware Overview and Installation Guide</i> .	

Clearing a PowerAbsent Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check the power distribution to the chassis:
 - Ensure that each PEM is properly seated and the power connection to it is secure.
 - Ensure that each external source DC power circuit breaker is on.
 - Ensure that each the external power wires are delivering power correctly.
2. Check for alarms on the PEM .
 - If the alarm clears, you have successfully completed this procedure.
 - If the alarm does not clear, contact your next level of support.

PRBS

Table 233: Condition Details

Parameter	Description
Code	prbs
Description/Cause	PRBS Test Activated: A PRBS test is active on the local port.
Entities Affected	<ul style="list-style-type: none"> • OTN OTU interfaces (see respective table below). • Ethernet interfaces (see respective table below). • SONET/SDH interfaces (see respective table below).
Default Severity	Not alarmed. (Default severity should not be changed.)
Service Affecting	No (false).
Condition Clearing	This condition clears when PRBS-signal generation is turned off. For information, see the <i>BT17800 Series Software Configuration Guide</i> .
Related Fault Hierarchy	See “ Common Fault Hierarchy - OTN and CBR Ports ” on page 29.

Table 234: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	—	—

Table 234: OTN OTU Interfaces (continued)

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<1>/<1>	UFM4	–	–
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC		
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC		
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 235: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	–	–
100ge:<chassis>/<slot>/<1>/<port>	UFM6		
40ge:<chassis>/<slot>/<1>/<port>	UFM6		
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6		
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC		

Table 236: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	–	–
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

PreFecBerTh

Table 237: Alarm Details

Parameter	Description
Code	preFecBerTh
Description	Pre-FEC Bit Error Rate Above High Threshold: The pre-FEC bit error rate is above the high threshold.
Entities Affected	Optical channel interfaces (see respective table below).
Possible Cause	The link is degraded.
Default Severity	Minor
Service Affecting	No (false).
Alarm Clearing	See "Clearing a PreFecBerTh Alarm" on page 163.
Related Fault Hierarchy	See "Common Fault Hierarchy - OTN and CBR Ports" on page 29.

Table 238: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Clearing a PreFecBerTh Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Do the following:

- Retrieve statistics for the interface to view the value of the **FEC max bit error ratio** counter:

```
show statistics current name:identifier
```

- Retrieve information from the running configuration file to view the statistics threshold-profile for the interface:

```
show running-config statistics threshold profile
```

Example

```
bt17800# show running-config statistics threshold profile
```

```
statistics
threshold profile def-och
  entityType och
  statistic fec-ber alarmHigh unTimed
    dblRaiseValue 2.7000000000000000e-2
    dblClearValue 2.3000000000000000e-2
  !
threshold profile def-otu4
  entityType otu4
  statistic fec-ber alarmHigh unTimed
    dblRaiseValue 4.5000000000000000e-3
    dblClearValue 7.5000000000000000e-4
  !
```

2. Do one of the following:

- If the actual pre-FEC BER exceeds the **RaiseValue** value specified for the alarm, go to the next step.
- If the actual pre-FEC BER does not exceed the **RaiseValue** specified for the alarm, contact your next level of support.

3. Analyze the optical link, and resolve any problems that could be impacting the pre-FEC bit error rate.

4. Check for alarms on the interface.

- If the alarm clears, you have completed this procedure.
- If the alarm does not clear, contact your next level of support.

PyldMism

Table 239: Alarm Details

Parameter	Description
Code	pyldMism

Table 239: Alarm Details (continued)

Parameter	Description
Description	Payload Mismatch: The payload type in the received signal is not the expected payload type.
Entities Affected	OTN ODU interfaces (see respective table below).
Possible Cause	The cross-connect configuration at the far-end NE does not match the cross-connect configuration at the local NE.
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing a PyldMism Alarm” on page 166 .
Related Fault Hierarchy	See “OTN Interface Fault Hierarchy” on page 30 .

Table 240: OTN ODU Interfaces

Entity Name	Fault Indicator		
	Module	Indicator	Status
odu4:<chassis>/<slot>/2/1/<subport.och.tributary>	UFM6	Fault LED, 200-Gbps port, 400G Coherent MSA XCVR	On
odu3:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu2e:<chassis>/<slot>/2/1/<subport.och.tributary.sub-interface>			
odu4:<chassis>/<slot>/1/1	UFM4	Fault LED, 100-Gbps port, 100G Coherent MSA XCVR	
odu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100-Gbps port	
odu2:<chassis>/<slot>/<subslot>/<port.sub-interface>			
odu2e:<chassis>/<slot>/<subslot>/<port.sub-interface>			
NOTE: Supported on UFM3 only.			
odu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10-Gbps port	
odu2e:<chassis>/<slot>/<subslot>/<port>			
NOTE: Supported on UFM3 only.			

Clearing a PyldMism Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve interface data to compare the values of the **Payload Type** and **Received Payload Type** parameters.

show interface name:identifier

2. Retrieve cross-connect information for the local NE and the far-end NE to determine at which end the cross-connect is incorrectly provisioned.

show cross-connect

3. Delete the correct cross-connect, and reprovision it to resolve the mismatch. For information, see the *BT17800 Series Software Configuration Guide*.

4. Check for alarms on the local interface.

- If the alarm has cleared, you have completed this procedure.
- If the alarm does not clear, contact your next level of support.

RDI-L

Table 241: Condition Details

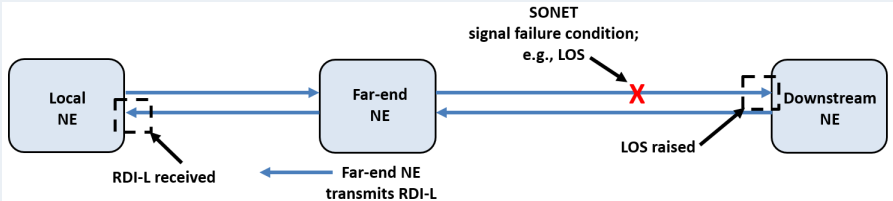
Parameter	Description
Code	rdi-l
Description/Cause	<p>Remote Defect Indication—Line: The local interface has received an RDI-L signal from the NE at the far end of the fiber, indicating that no SONET signal is being transmitted downstream of (and away from) the local NE. (See also “Maintenance Signaling” on page 35.)</p> 
Entities Affected	SONET (OC192, WAN PHY OC192) interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	No (false).

Table 241: Condition Details (continued)

Parameter	Description
Condition Clearing	See "Clearing an RDI-L Condition" on page 167.
Related Fault Hierarchy	See "OC192, WAN PHY Over OC192 Interface Fault Hierarchy" on page 31.

Table 242: SONET (OC192, WAN PHY OC192) Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	—	—
wanoc192:<chassis>/<slot>/<subslot>/<port>			

Clearing an RDI-L Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms downstream of the local NE.
2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

RF

Table 243: Condition Details

Parameter	Description
Code	rf
Description/Cause	<p>Remote Fault: The local interface has received a remote-fault signal from the NE at the far end of the fiber, indicating that no Ethernet signal is being transmitted downstream of (and away from) the local NE. (See also "Maintenance Signaling" on page 35.)</p>

Table 243: Condition Details (continued)

Parameter	Description
Entities Affected	Ethernet interfaces (see respective table below).
Default Severity	Not alarmed.
Service Affecting	No (false).
Condition Clearing	See "Clearing an RF Condition" on page 168.
Related Fault Hierarchy	See "Ethernet Interface Fault Hierarchy" on page 31.

Table 244: Ethernet Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
100ge:<chassis>/<slot>/<subslot>/<port>/<subport>	1x CFP BIC	—	—
100ge:<chassis>/<slot>/<1>/<port>	UFM6		
40ge:<chassis>/<slot>/<1>/<port>	UFM6		
10ge:<chassis>/<slot>/<1>/<port>/<subport>	UFM6		
10ge:<chassis>/<slot>/<subslot>/<port>/<subport>	12x SFP+ BIC		

Clearing an RF Condition



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Check for and clear all alarms downstream of the local NE.
2. Check for conditions on the local interface.
 - If the condition clears, you have completed this procedure.
 - If the condition does not clear, contact your next level of support.

ScmNmiDown

Table 245: Alarm Details

Parameter	Description
Code	scmNmiDown
Description/Cause	System Controller Module (SCM) Interface Down: One of the SCMs in a dual-CMM system cannot connect to the management IP network.
Entities Affected	Management modules (see respective table below).
Possible Causes	<ul style="list-style-type: none"> The connection between the management interface and the network gateway is not intact. The network gateway is configured to block ARP packets with no source IP address (source IP address is 0.0.0.0), and a static IP address is not provisioned on the SCM.
Default Severity	Major
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an ScmNmiDown Alarm” on page 169 .
Related Fault Hierarchy	–

Table 246: Management Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193 .	

Clearing an ScmNmiDown Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

- Do one of the following:
 - If the network gateway is configured to block ARP packets with no specified source IP address, go to [“Clearing an ScmNmiDown Alarm” on page 169](#).
 - If the network gateway is not configured to block ARP packets with no specified source IP address, go to [“Clearing an ScmNmiDown Alarm” on page 169](#).
- Use the **conditions** CLI command to disable the reporting of this alarm, and then go to 4. For information about the **conditions** command, see the *BT17800 Series Command Line Reference Guide*.

3. Provision a static management IP address on the affected CMM. For information, see the *BT17800 Series Software Configuration Guide*.
4. Check for alarms on the CMM.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

ScmNoNmConn

Table 247: Alarm Details

Parameter	Description
Code	scmNoNmConn
Description/Cause	No Network Management Connectivity on System Controller Module (SCM): <ul style="list-style-type: none"> • In a dual-CMM system, neither SCM can connect to the management IP network. • In a single-CMM system, the SCM cannot connect to the management IP network.
Entities Affected	Management modules (see respective table below).
Default Severity	Critical
Service Affecting	Yes (true).
Alarm Clearing	See “Clearing an ScmNoNmConn Alarm” on page 170 .
Related Fault Hierarchy	—

Table 248: Management Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193 .	

Clearing an ScmNoNmConn Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Ensure that the connections between the management interface and the gateway on the active and standby CMMs is intact.

2. Check for alarms on the CMM.

- If the alarm clears, you have completed this procedure.
- If the alarm does not clear, contact your next level of support.

SD

Table 249: Alarm Details

Parameter	Description
Code	sd
Description	Signal Degrade: The local port is in a signal-degrade state because of a number of errors in the received signal.
Entities Affected	<ul style="list-style-type: none"> • OTN OTU interfaces (see respective table below). • SONET/SDH interfaces (see respective table below).
Possible Causes	<ul style="list-style-type: none"> • Either the fiber link or the optical connection is degraded. • Excessive signal attenuation has resulted in a high signal-to-noise ratio.
Default Severity	Minor
Service Affecting	No (false).
Alarm Clearing	See "Clearing an SD Alarm" on page 172 .
Related Fault Hierarchy	See: <ul style="list-style-type: none"> • OTN Interface Fault Hierarchy on page 30 • OC192, WAN PHY Over OC192 Interface Fault Hierarchy on page 31 • STM64, WAN PHY Over STM64 Interface Fault Hierarchy on page 32

Table 250: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	Fault LED, 200G line port	On
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 251: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Clearing an SD Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Reprieve statistics for the interface, and ensure that the optical power received and the optical signal-to-noise ratio are within specification:

show statistics current name:identifier
2. Inspect the fiber connection, and ensure that the fiber is intact, thoroughly clean, and correctly connected to the port.
3. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

TIM

Table 252: Alarm Details

Parameter	Description
Code	tim
Description	Trace Identifier Mismatch: The received trace identifier is different from the expected trace identifier.
Entities Affected	<ul style="list-style-type: none"> • OTN OTU interfaces (see respective table below). • SONET/SDH interfaces (see respective table below).
Possible Causes	<ul style="list-style-type: none"> • The optical fiber link is from the wrong source (misconnected). • Either the expected trace identifier configured on the local interface is incorrect, or the trace identifier configured on the remote interface is incorrect.

Table 252: Alarm Details (continued)

Parameter	Description
Default Severity	Critical
Service Affecting	No (false).
Alarm Clearing	See “Clearing a TIM Alarm” on page 174.
Related Fault Hierarchy	See: <ul style="list-style-type: none"> OTN Interface Fault Hierarchy on page 30 OC192, WAN PHY Over OC192 Interface Fault Hierarchy on page 31 STM64, WAN PHY Over STM64 Interface Fault Hierarchy on page 32

Table 253: OTN OTU Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<2>/<1>/<subport.och.tributary>	UFM6	Fault LED, 200G line port	On
otu4:<chassis>/<slot>/<1>/<1>	UFM4	Fault LED, 100G line port	On
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	
otu2:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	
otu2e:<chassis>/<slot>/<subslot>/<port>			

NOTE: Supported on UFM3 only.

Table 254: SONET/SDH Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
oc192:<chassis>/<slot>/<subslot>/<port>	12x SFP+ BIC	Fault LED, 10G port	On
wanoc192:<chassis>/<slot>/<subslot>/<port>			
stm64:<chassis>/<slot>/<subslot>/<port>			
wanstm64:<chassis>/<slot>/<subslot>/<port>			

Clearing a TIM Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve detailed interface data to view the values of the following attribute pairs:
 - OTU interface: **Trace Message Expected / Trace Message Received**
 - SONET/SDH interface: **Expected Section Trace Message / Received Section Trace Message**

show interface name:identifier detail

2. Based on the trace-message data, determine whether any of the following problems exist, and then resolve them:
 - The optical fiber link is from the wrong source (misconnected).
 - The expected trace identifier configured on the local interface is incorrect.
 - The trace identifier configured on the remote interface is incorrect.
3. Check for alarms on the interface.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

TlossRxHt

Table 255: Alarm Details

Parameter	Description
Code	tlossRxHt
Description/Cause	Loss Above High Threshold, Receive: The measured optical power loss in the receive fiber is above the high threshold.
Entities Affected	Terminal amplifier line ports (see respective table below).
Default Severity	Minor
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing a TlossRxHt Alarm" on page 175.
Related Fault Hierarchy	See "Terminal Amplifier Port Fault Hierarchy" on page 35.

Table 256: Terminal Amplifier Line Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
line:<chassis>/<slot>/1/<portNum>	AMP1	Fault LED, Line port	On

Clearing a TlossRxHt Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve statistics for the terminal amplifier line port to view the value of the **Optical power loss in recv. direction** counter:

show statistics current line:identifier



NOTE: For detailed AMP1 specifications, see the *BT17800 Series Hardware Overview and Installation Guide*.

2. Check for the following problems, and resolve them if they exist:
 - There is excessive loss on the receive span fiber.
 - The span length is excessive, resulting in loss that cannot be supported.
 - There is excessive loss on upstream patch fibers.
3. Check for alarms on the terminal amplifier line port:
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

TlossRxLt

Table 257: Alarm/condition Details

Parameter	Description
Code	tlossRxLt
Description/Cause	Loss Below Low Threshold, Receive: The measured optical power loss in the received fiber is below the low threshold.
Entities Affected	Terminal amplifier line ports (see respective table below).
Default Severity	Minor

Table 257: Alarm/condition Details (continued)

Parameter	Description
Service Affecting	Yes (true).
Alarm Clearing	See "Clearing a TlossRxLt Alarm" on page 176.
Related Fault Hierarchy	See "Terminal Amplifier Port Fault Hierarchy" on page 35.

Table 258: Terminal Amplifier Line Ports

Entity Name	Module	Fault Indicator	
		Indicator	Status
line:<chassis>/<slot>/1/<portNum>	AMP1	Fault LED, Line port	On

Clearing a TlossRxLt Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Retrieve statistics for the terminal amplifier line port to view the value of the **Optical power loss in recv. direction** counter:

```
show statistics current line:identifier
```



NOTE: For detailed AMP1 specifications, see the *BT17800 Series Hardware Overview and Installation Guide*.

2. Check the upstream fiber connections, and ensure that the fiber is intact, thoroughly clean, and properly connected.
3. Check for alarms on the terminal amplifier line port:
 - If the alarm has cleared, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

TransmitterDegrade

Table 259: Alarm Details

Parameter	Description
Code	transmitterDegrade

Table 259: Alarm Details (continued)

Parameter	Description
Description	<p>Transmitter degrade (of the far-end transmitter). This alarm is raised by the local receiver when the Delta-Q factor difference between X and Y polarization states of the signal received from the far-end transmitter has reached the configured Delta-Q threshold.</p> <p>The alarm clears when the Delta-Q factor difference is below the configured Delta-Q threshold for three consecutive one-second intervals.</p>
Entities Affected	Optical channel and OTU4 interfaces (see respective tables below).
Possible Cause	The transmitting transceiver or link is degraded.
Default Severity	Major
Service Affecting	No (false)
Alarm Clearing	See “Clearing a TransmitterDegrade Alarm” on page 177.
Related Fault Hierarchy	See “Common Fault Hierarchy - OTN and CBR Ports” on page 29.

Table 260: Optical Channel Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
och:<chassis>/<slot>/<2>/<1>/<subport.och>	UFM6	Fault LED, 200G line port	On

Table 261: OTU4 Interfaces

Entity Name	Module	Fault Indicator	
		Indicator	Status
otu4:<chassis>/<slot>/<subslot>/<port>	1x CFP BIC	Fault LED, 100G port	On

Clearing a TransmitterDegrade Alarm



NOTE: Follow all applicable safety requirements as described in the *BT17800 Series Hardware Overview and Installation Guide*.

1. Do the following:

- Retrieve statistics for the interface to view the counters that relate to **Delta-Q** across all bins.

show statistics current name:identifier

For example:

```

bti7800# show statistics current och:1/2/2/1/2.1 | include polarization |
exclude signal
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      X-polarization
FEC bit error ratio .....  0.000415860219687049
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Min.
x-polarization FEC bit error ratio .  0.000415860219687049
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Max.
x-polarization FEC bit error ratio .  0.000564950599291495
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Y-polarization
FEC bit error ratio .....  6.08687444175817e-05
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Min.
y-polarization FEC bit error ratio .  6.08687444175817e-05
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Max.
y-polarization FEC bit error ratio .  0.000266704433195662
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      X-polarization
pre-FEC Q .....          10.48 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Min.
x-polarization pre-FEC Q .....          10.48 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Max.
x-polarization pre-FEC Q .....          13.62 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Y-polarization
pre-FEC Q .....          11.69 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Min.
y-polarization pre-FEC Q .....          11.69 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Max.
y-polarization pre-FEC Q .....          14.06 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Delta-Q of x and
y polarization .....          1.21 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Min. Delta-Q of
x and y polarization ....          1.21 dB
2019-01-23T12:56:00+08:00    unTimed    complete  100.0      Max. Delta-Q of
x and y polarization ....          1.38 dB
2019-01-26T04:48:00+08:00    1Minute   partial   78.3      X-polarization
FEC bit error ratio .....  0.000415860219687049
2019-01-26T04:48:00+08:00    1Minute   partial   78.3      Min.
x-polarization FEC bit error ratio .  0.000415860219687049
2019-01-26T04:48:00+08:00    1Minute   partial   78.3      Max.
x-polarization FEC bit error ratio .  0.000427188555370874

<trimmed>

```

- Retrieve information from the running configuration to view the configured **Delta-Q** threshold for the interface.

show running-config interface name:identifier

For example:

```
bt17800# show running-config interface och:1/2/2/1/2.1 | include delta-q
delta-q      2.5
```

2. Do one of the following:
 - If the actual Delta-Q has reached or exceeded the configured threshold, go to the next step.
 - If the actual Delta-Q has not reached the configured threshold, contact your next level of support.
3. Check the transmitter at the far-end for any alarms, and resolve those alarms if applicable.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, go to the next step.
4. Analyze the optical link and clean the optical connectors, and resolve any other problems that could be affecting the x- and y-polarization FEC bit error ratios.
 - If the alarm clears, you have completed this procedure.
 - If the alarm does not clear, contact your next level of support.

UPGRD

Table 262: Alarm Details

Parameter	Description
Code	upgrd
Description/Cause	Upgrade in Progress: A system software upgrade is in progress.
Entities Affected	Management and traffic modules (see respective table below).
Default Severity	Minor
Service Affecting	Yes (true).
Alarm Clearing	This alarms clear when the system software upgrade is completed.
Related Fault Hierarchy	—

Table 263: Management and Traffic Modules

Entity Name	Module	Fault Indicator	
		Indicator	Status
cmm:<chassis>/<slot>	CMM	See “BT17800 Series Module and BIC LED Behavior” on page 193.	
ufm:<chassis>/<slot>	UFM		
roadm:<chassis>/<slot>	ROADM2		
ila:<chassis>/<slot>	ILA		
amp:<chassis>/<slot>	AMP1		
wps:<chassis>/<slot>	WPS4		

CHAPTER 3

Alarm Thresholds

- [Environment Thresholds on page 181](#)
- [DOL Thresholds on page 186](#)

Environment Thresholds

Temperature Thresholds - Equipment and Traffic Modules

The following tables provide information about available temperature sensors and the alarm thresholds for BTI7800 Series equipment and traffic modules.

Table 264: Temperature Sensors - Equipment and Modules

Sensor	Description
Alarm Panel Temp	Local ambient temperature
BIC Temp	DIGI internal ASIC temperature
CMM Temp	Local ambient temperature
DS75 Temp 1	Local ambient temperature
DS75 Temp 3	Local ambient temperature
DS75 Temp BIC	Local ambient temperature
Exhaust Temp	Cooling-module exhaust temperature
FAN Internal Temp	Internal cooling-module temperature
FAN Temperature	Local ambient temperature
Line Card Temp	Local ambient temperature
OTN Framer Temp	DIGI internal ASIC temperature
PEM <n> Temperature where <n> is A1, A2, B1, or B2.	Local ambient temperature

Table 264: Temperature Sensors - Equipment and Modules (continued)

Sensor	Description
PEM AC <n> Temperature	Local ambient temperature
where <n> is A1, A2, B1, or B2.	

Table 265: Temperature Thresholds - Equipment and Modules

Equipment/Module	Sensor	Low Threshold	High Threshold
AMP1	DS75 Temp 1	—	72°C (161.6°F)
	DS75 Temp 3	—	—
	Line Card Temp	—	—
BIC	DS75 Temp BIC	—	72°C (161.6°F)
	BIC Temp	—	105°C (221°F)
Chassis Alarm Panel	Alarm Panel Temp	—	—
CMM	CMM Temp	—	90°C (194°F)
Cooling module	Exhaust Temp	—	75°C (167°F)
	FAN Temperature	—	75°C (167°F)
	FAN Internal Temp	—	75°C (167°F)
ILA	DS75 Temp 1	—	85°C (185°F)
	DS75 Temp 3	—	—
	Line Card Temp	—	—
DC PEM	PEM <n> Temperature	—	80°C (176°F)
AC PEM	PEMAC <n> Temperature	55°C / 131°F	75°C (167°F)
ROADM2	DS75 Temp 1	—	85°C (185°F)
	DS75 Temp 3	—	—
	Line Card Temp	—	—

Table 265: Temperature Thresholds - Equipment and Modules (continued)

Equipment/Module	Sensor	Low Threshold	High Threshold
UFM	DS75 Temp 1	–	–
	DS75 Temp 3	–	–
	Line Card Temp	–	85°C (185°F)
	OTN Framer Temp	–	105°C (221°F)
	NOTE: Supported on UFM4 only.		
WPS4	DS75 Temp 3	–	85°C (185°F)
	Line Card Temp	–	–

Temperature Thresholds - MSA Transceivers

The following tables provide alarm-related module temperature thresholds for the 100G Coherent MSA XCVR and the 400G Coherent MSA XCVR.

Table 266: Temperature Thresholds - 100G Coherent MSA XCVR Module

Low Threshold	High Threshold	Shutdown Threshold
-5°C (23°F)	80°C (176°F)	90°C (194°F)

Table 267: Temperature Thresholds - 400G Coherent MSA XCVR Module

MDIO Register	Description	Low Threshold	High Threshold	Shutdown Threshold
9060h	Near TOF0	-10°C / 14°F	83°C / 181.4°F	88°C / 190.4°F
9061h	Near TOF1	-10°C / 14°F	83°C / 181.4°F	88°C / 190.4°F
9062h	Pump Lane0	-10°C / 14°F	85°C / 185°F	90°C / 194°F
9063h	Pump Lane1	-10°C / 14°F	85°C / 185°F	90°C / 194°F
9064h	PIC Lane0	-10°C / 14°F	95°C / 203°C	100°C / 212°F
9065h	PIC Lane1	-10°C / 14°F	95°C / 203°C	100°C / 212°F
9067h	ASIC Core	-10°C / 14°F	200°C / 392°F	200°C / 392°F

Fan-speed Thresholds

The following table provides information about available fan-speed sensors and the alarm thresholds for BT17800 Series cooling modules.

Table 268: Fan-speed Thresholds

Cooling Module	Sensor		Low Threshold
	Name	Description	
FAN2	Fan Tach <n> where <i>n</i> is a value from 1 to 3.	Fan speed	1500 RPM
FAN3	Fan RPM	Fan speed	1500 RPM
FAN5	Fan Tach <n> where <i>n</i> is a value from 1 to 5.	Fan speed	2500 RPM
FAN9	Fan Tach <n> where <i>n</i> is a value from 5 to 6.	Fan speed	1500 RPM



NOTE: The RPM threshold for either a BT17814 Booster Fan (BT8A78FAN9) or a 2-Slot Chassis Cooling Module (BT8A78FAN2) refers to an average of the RPM values of the individual fans in the cooling module.

Output-current Thresholds

The following table provides information about available output-current sensors and the alarm thresholds for BT17800 Series equipment.

Table 269: Output-current Sensors and Thresholds

Equipment	Sensor	Description	Low Threshold	High Threshold
AC PEM	lout PEMAC <n> where <n> is A1, A2, B1, or B2	Output current (Vdc)	0.2 Vdc	60 Vdc

Voltage Thresholds

The following tables provide information about available voltage sensors and the alarm thresholds for BT17800 Series equipment and traffic modules.

Table 270: Voltage Sensors

Sensor	Description
12V_MAIN	12V main voltage threshold sensor
2V5_CORE	2V5 core voltage threshold sensor
2V5_IO	2V5 I/O voltage threshold sensor
3V3_MAIN	3.3V main voltage threshold sensor
3V3_STBY	3.3V standby voltage threshold sensor
5V_MAIN	5V main voltage threshold sensor
ADC_1V2_GIGE	ADC 1V2 GIGE voltage threshold sensor
ADCS_5V	ADCS 5V voltage threshold sensor
ADCS_5V_USB	ADCS 5V USB voltage threshold sensor
Vin PEM AC <n> where <n> is A1, A2, B1, or B2.	Input voltage
Vout PEM AC <n> where <n> is A1, A2, B1, or B2.	Output voltage

Table 271: Voltage Thresholds

Equipment/Module	Sensor	Low Threshold	High Threshold
AMP1	12V_MAIN	9.60	14.40
	2V5_CORE	2.00	3.00
	2V5_IO	2.00	3.00
	3V3_MAIN	2.64	3.96
	3V3_STBY	2.64	3.96
	5V_MAIN	4.00	6.00
	ADC_1V2_GIGE	1.02	1.52
AC PEM	Vin PEM AC <n>	90	255
	Vout PEM AC <n>	40	60

Table 271: Voltage Thresholds (continued)

Equipment/Module	Sensor	Low Threshold	High Threshold
UFM	12V_MAIN	9.60	14.40
	2V5_CORE	2.25	2.75
	2V5_IO	2.00	3.00
	3V3_MAIN	2.64	3.96
	3V3_STBY	2.64	3.96
	5V_MAIN	4.00	6.00
	ADC_IV2_GIGE	1.02	1.52
WPS4	12V_MAIN	10.86	13.26
	3V3_MAIN	2.68	3.96
	3V3_STBY	2.68	3.96
	ADCS_5V	4.52	5.56
	ADCS_5V_USB	4.52	5.56
	ADC_IV2_GIGE	4.52	5.56

DOL Thresholds

DOL OSC Power and Optical Backreflection Alarm Thresholds

Table 272: ROADM2 OSC Power Alarm Thresholds (all Values in DBm)

Threshold	Client Input	Client Output	L1	
			OPT	OPR
Hardware min.	-22.0	-13.0	-22.2	-43.0
Loss of Light raise	-21.0	–	–	-42.0
Loss of Light clear	-20.0	–	–	-41.0
Hardware max.	0.0	0.0	7.0	6.0

Table 273: ILA OSC Power Alarm Thresholds (all Values in DBm)

Threshold	Client Input	Client Output	L1	
			OPT	OPR
Hardware min.	-22.0	-13.0	-22.2	-43.0
Loss of Light raise	-21.0	–	–	-42.0
Loss of Light clear	-20.0	–	–	-41.0
Hardware max.	0.0	0.0	7.0	6.0

Table 274: Default OSC Back-Reflection Ratio Threshold Values (obrHt Alarm)

Threshold	Bin	Parameters	Values		Status
			Range	Default	
alarmHigh	UnTimed ¹	RaiseValue	-37 to -6	-18 dB	Enabled
		ClearValue	-37 to -6	-19 dB	
alarmLow	–	–	–	–	–
warningAlert	–	–	–	–	–

¹ Only the **unTimed** bin is supported.

DOL OMS Power Alarm Thresholds

Table 275: ROADM2 OMS Power Alarm Thresholds (all Values in DBm)

Threshold	Client Input		Client Output	L1		
	Add-Drop	Pass-Thru		OPT	OPR	OPR + PRE
Hardware min.	-18.0	-18.0	-8.5	-21.8	-29.0	-39.0
Loss of Light raise	-17.0	-8.8	–	–	-28.0	-38.0
Loss of Light clear	-16.0	-7.8	–	–	-27.0	-37.0
Power Out of Specification Low raise	-14.0	-6.8	–	–	-26.0	-36.0

Table 275: ROADM2 OMS Power Alarm Thresholds (all Values in DBm) (continued)

Threshold	Client Input		Client Output	L1		
	Add-Drop	Pass-Thru		OPT	OPR	OPR + PRE
Power Out of Specification Low clear	-13.5	-6.3	–	–	-25.5	-35.5
Hardware max.	23.0	23.0	23.0	23.3	14.4	3.4

Table 276: ILA OMS Power Alarm Thresholds (all Values in DBm)

Threshold	Client Input	Client Output	L1		
	Pass-Thru		OPT	OPR	OPR + PRE
Hardware min.	-8.3	-4.3	-21.8	-29.0	-39.0
Loss of Light raise	-7.3	–	–	-28.0	-38.0
Loss of Light clear	-6.3	–	–	-27.0	-37.0
Power Out of Specification Low raise	-4.3	–	–	-26.0	-36.0
Power Out of Specification Low clear	-3.8	–	–	-25.5	-35.5
Hardware max.	25.1	25.1	23.3	-14.4	3.4

DOL OCH Power Alarm Thresholds

Table 277: ROADM2 50 GHz OCH Optical-power Alarm Thresholds (all Values in DBm)

Threshold	Client Input	Client Output	PostAmp IN (Internal)	L1	
				OPT	OPR
Hardware min.	-20.3	-14.5	-27.0	Alarm state set from PostAmp IN	Not supported
Loss of Light raise	-16.6	-10.8	-23.3		
Loss of Light clear	-15.5	-9.7	-22.2		
Power Out of Specification Low raise	-13.6	-7.8	-20.3		
Power Out of Specification Low clear	-13.0	-7.2	-19.7		
Power Out of Specification High raise	5.1	5.1	-13.3		
Power Out of Specification High clear	5.7	5.7	-12.8		
Hardware max.	17.2	17.2	-1.2		

DOL Port Power Alarm Thresholds

Table 278: ROADM2 PRE Port-power Alarm Thresholds (all Values in DBm)

Threshold	Mainboard PRE Port		CFP2 PRE Port	
	Input	Output	Input	Output
Hardware min.	-29.0	-41.0	-40.0	-19.0
Loss of Light raise	-21.0	–	-40.0	–
Loss of Light clear	-20.0	–	-39.0	–
Power Out of Specification, Low raise	-18.0	–	-38.5	–
Power Out of Specification, Low clear	-17.5	–	-38.0	–

Table 278: ROADM2 PRE Port-power Alarm Thresholds (all Values in DBm) (continued)

Threshold	Mainboard PRE Port		CFP2 PRE Port	
	Input	Output	Input	Output
Hardware max.	15.6	4.6	4.0	19.0

Table 279: ILA PRE Port-power Alarm Thresholds (all Values in DBm)

Threshold	Mainboard PRE Port		CFP2 PRE Port	
	Input	Output	Input	Output
Hardware min.	-29.0	-41.0	-40.0	-19.0
Loss of Light raise	-21.0	–	-40.0	–
Loss of Light clear	-20.0	–	-39.0	–
Power Out of Specification Low raise	-18.0	–	-38.5	–
Power Out of Specification Low clear	-17.5	–	-38.0	–
Hardware max.	15.6	4.6	4.0	19.0

DOL Rx-loss Alarm Thresholds

Table 280: ROADM2 Rx-loss Alarm Thresholds (all Values in DB)

Threshold	Client (to Client or MD03)	Line		
		with PRE	without PRE for NDSF	without PRE for NZDSF
LoSpecRx raise	5.2	33.2	23.2	19.7
LoSpecRx clear	5.0	33.0	23.0	19.5

Table 281: ILA Rx-loss Alarm Thresholds (all Values in DB)

Threshold	Client (to Client)	Line		
		with PRE	without PRE for NDSF	without PRE for NZDSF
LoSpecRx raise	2.2	33.2	23.2	19.7
LoSpecRx clear	2.0	33.0	23.0	19.5

CHAPTER 4

BTI7800 Series Equipment and Modules

- [Common Equipment Components on page 191](#)
- [Management and Traffic Modules on page 192](#)
- [BTI7800 Series Module and BIC LED Behavior on page 193](#)

Common Equipment Components

Table 282: BTI7814 Major Common Equipment Components

Component	PEC	Release Introduced
14-Slot Chassis Alarm Panel	BT8A78CAP1	Release 1.1
14-Slot Chassis Front Cooling Module	BT8A78FAN3	Release 1.1
BTI7814 Booster Fan	BT8A78FAN9	Release 4.1
14-Slot Chassis DC Power Entry Module	BT8A78PEM3-DC	Release 1.1
2900W (53.5V) AC Rectifier Module	BT8A78ACM1	Release 1.5
Chassis Management Module	BT8A78CMM1	Release 1.1

Table 283: BTI7802 Common Equipment Components

Component	PEC	Release Introduced
2-Slot Chassis Alarm Panel	BT8A78CAP2	Release 1.3
2-Slot Chassis Cooling Module	BT8A78FAN2	Release 1.6
1-Slot/2-Slot Chassis DC Power Entry Module	BT8A78PEM1-DC	Release 1.3
1-Slot/2-Slot Chassis AC Power Entry Module	BT8A78PEM1-AC	Release 1.3
Chassis Management Module (CMM)	BT8A78CMM1	Release 1.1

Table 284: BT17801 Common Equipment Components

Component	PEC	Release Introduced
Ethernet and Serial Link (ESL) module	BT8A78ESL1	Release 2.1
1-Slot Chassis Front Cooling Module	BT8A78FAN5	Release 2.1
1-Slot/2-Slot Chassis DC Power Entry Module	BT8A78PEM1-DC	Release 1.3
1-Slot/2-Slot Chassis AC Power Entry Module	BT8A78PEM1-AC	Release 1.3
Chassis Management Module (CMM)	BT8A78CMM1	Release 1.1

Management and Traffic Modules

Table 285: BT17800 Series Management and Traffic Modules

Module	Description	PEC	Introduced
Management modules			
Chassis Management Module 1 (CMM1)	Provides management and control of the system.	BT8A78CMM1	Release 1.1
Service modules			
Universal Forwarding Module (UFM3)	Supports two BICs.	BT8A78UFM3	Release 1.1
Universal Forwarding Module with Integrated 100G Coherent MSA XCVR (UFM4)	Contains one 100G Coherent MSA XCVR and supports one BTI Interface Card (BIC).	BT8A78UFM4	Release 1.1
Universal Forwarding Module with Integrated 400G Coherent MSA XCVR (UFM6)	Contains a total of ten client ports and one 400G Coherent MSA XCVR. ¹	BT8A78UFM6-I02	Release 4.1
96-Channel Amplifier (AMP1)	Provides DWDM composite signal amplification in point-to-point applications. NOTE: This module is not supported on the BT17801.	BT8A78AMP1	Release 1.1
Wavelength Protection Switch (WPS4)	Provides revertive or non-revertive wavelength protection switching.	BT8A78WPS4	Release 1.6
BIC modules			
12x SFP+ BTI Interface Card (12x SFP+ BIC)	For up to 12 SFP+ transceivers.	BT8A78SFP12G	Release 1.1
1x CFP BTI Interface Card (1x CFP BIC)	For 1 CFP transceiver.	BT8A78CFPIG	Release 1.1

Table 285: BT17800 Series Management and Traffic Modules (continued)

Module	Description	PEC	Introduced
Passive modules			
96-Channel Fixed Mux/Demux (FMD96)	Provides local fixed grid access to all 96 wavelengths in the DWDM 50-GHz channel plan.	BT8A78MD03	Release 2.0

¹ Client ports 1 to 10 support QSFP+ transceivers and client ports 1, 2, 6, 7 support both QSFP+ and QSFP28 transceivers.

BT17800 Series Module and BIC LED Behavior

Table 286: CMM LEDs

LEDs	Color	Description
Identify	Amber	Not used.
Active	Green	The CMM is operationally up.
Fail	Red	The CMM is operationally down or the CMM is not recognized.
Hot Swap	Blue	The CMM does not match the provisioned CMM.
Link (right)	Green	The link is up.
Activity (left)	Green	The LED flickers to indicate activity on the link.

Table 287: Service Module LED Behavior

Name	Description	State	State Description
Identify (AMBER)	The Identify LED indicates whether the CMM has identified and acknowledged the newly-inserted module.	OFF	<p>The CMM has identified and acknowledged the module.</p> <p>The CMM can only acknowledge the module if the module is administratively up. A newly-inserted module is administratively up if either of the following is true:</p> <ul style="list-style-type: none"> The module has been pre-provisioned and configured to be administratively up. Auto-provisioning is enabled. If auto-provisioning is enabled and if the CMM is able to identify the module, the module is automatically provisioned and its administrative status is set to up.
		ON	The CMM has failed to identify or acknowledge the module.
		BLINKING	The CMM is attempting to identify and acknowledge the module.

Table 287: Service Module LED Behavior (continued)

Name	Description	State	State Description
Active (GREEN)	The Active LED reflects the operational status of the module.	OFF	The operational status of the module is down.
		ON	The operational status of the module is up.
Fail (RED)	The Fail LED reflects the operational status of the module.	OFF	The operational status of the module is up.
		ON	The operational status of the module is down.
H/S (BLUE)	The Hot Swap H/S LED indicates whether the module can be removed from the chassis.	OFF	The administrative status of the module is up, and the actual module matches the provisioned module. The module should not be removed from the chassis in this state.
		ON	The administrative status of the module is down, or the actual module does not match the provisioned module. The module can be removed from the chassis in this state.
		BLINKING	This is a transient state that occurs when plugging in a module, or when changing its administrative status. The module should not be removed from the chassis in this state.

Table 288: BIC LEDs

LEDs	Color	Description
Active	Green	The module is operating normally.
Fail	Red	The module has failed.
H/S (Hot Swap)	Blue	ON: The module is in a quiescent state, and can be removed from the slot after a minimum of 5 seconds in this state. BLINKING: The module is being placed into a quiescent state. It cannot be removed from the slot. OFF: The module is operating normally. It cannot be removed from the slot.

Table 289: Port LEDs (UFMs and BICs)

LEDs	Color	Description
Fail	Red	The port has failed.
Fault	Amber	A fault exists on the port.