



Troubleshooting PSM Problems

This chapter describes how to troubleshoot PSM problems. This chapter contains the following sections:

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- [4.2 Initial Troubleshooting Checklist, page 4-1](#)
- [4.3 Troubleshooting PSM Interface Problems, page 4-1](#)

4.1 Overview

The PSM (protection switch module) provides trunk fiber protection for Cisco ONS 15540 ESPx systems configured in point-to-point topologies. The PSM sends the signal from a mux/demux module or a transponder module to both the west and east directions. It receives both the west and east signals and selects one to send to the mux/demux module or the transponder module. When a trunk fiber cut occurs on the active path, the PSM switches the received signal to the standby path. The PSM can protect up to 32 data channels and the OSC.

The PSM also has an optical monitor port for testing the west and east receive signals. This port samples one percent of the receive signals that can be monitored with an optical power meter.

4.2 Initial Troubleshooting Checklist

Follow this initial checklist before proceeding with the troubleshooting procedures:

- Check that the LEDs on the cards show the proper state.
- Verify patch configuration.
- Ensure that all optical connectors are clean. Refer to the [Cisco ONS 15540 ESPx Cleaning Procedures for Fiber Optic Connections](#) document.

4.3 Troubleshooting PSM Interface Problems

This section contains troubleshooting procedures for PSM interface problems.

4.3.1 Wdmsplit Interface Down

Symptom The wdmsplit interface is down.

[Table 4-1](#) describes the potential causes of the symptom and the solutions.

Table 4-1 *Wdmsplit Interface Is Down*

Possible Problem	Solution
Interface administratively shut down.	Issue the show interfaces wdmsplit command to ensure the interface is active. If necessary, issue the no shutdown command to activate the interface.
Incoming power level is out of range.	Use a power meter to check the receive power level from the remote node. Issue the show interfaces wdmsplit command to verify the power level is within range.
The optical connectors are dirty.	Refer to the Cisco ONS 15540 ESPx Cleaning Procedures for Fiber Optic Connections document .

4.3.2 Wdmsplit Interface Power Level Indicates Loss of Light

Symptom The wdmsplit interface is down and shows Loss of Light.

[Table 4-2](#) describes the potential causes of the symptom and the solutions.

Table 4-2 *Wdmsplit Interface Power Level Indicates Loss of Light*

Possible Problem	Solution
Incorrect cable connection.	Verify that the optical cables are connected correctly.
Incoming power level is low.	Issue the show interfaces wdmsplit command to verify the receive power level is within range.
The optical connectors are dirty.	Refer to the Cisco ONS 15540 ESPx Cleaning Procedures for Fiber Optic Connections document .

4.3.3 Wdmsplit Interface Receives Light But End Wave Interface Shows Loss of Light

Symptom The wdmsplit interface receives light but the end wave interface shows Loss of Light.

[Table 4-3](#) describes the potential causes of the symptom and the solutions.

Table 4-3 *Wdmsplit Interface Receives Light But End Wave Interface Shows Loss of Light*

Possible Problem	Solution
The patch between the wdmrelay interface and the wdm or wavepatch interface is incorrect.	Issue the show patch and show interfaces wdm commands to verify that the patch is correctly configured.
The patch between the mux/demux module and the line card motherboard of the transponder is incorrect.	Verify that the patch cables are connected correctly between the mux/demux module and the line card motherboard.
The optical connectors are dirty.	Refer to the <i>Cisco ONS 15540 ESPx Cleaning Procedures for Fiber Optic Connections document</i> .

4.3.4 Wdm Interface Loses Topology Neighbor Learning Via CDP

Symptom The wdm interface loses topology neighbor learning through CDP after the patch between the wdmrelay and wdm interfaces is configured.

[Table 4-4](#) describes the potential cause of the symptom and the solution.

Table 4-4 *Wdm Interface Loses Topology Neighbor Learning Via CDP*

Possible Problem	Solution
The patch between the wdmrelay interface and the wdm or wavepatch interface is incorrect.	Issue the show patch and show interfaces wdm commands to verify that the patch is correctly configured. Once this patch is configured, the trunk side interface is no longer an edge interface so topology learning through CDP is disabled.

4.3.5 Automatic CDP Learning Is Not Enabled on Wdmsplit Interface

Symptom Automatic CDP learning is not enabled on the wdmsplit interfaces after a patch between the wdmrelay and wdm interfaces is configured.

[Table 4-5](#) describes the potential cause of the symptom and the solution.

Table 4-5 *Automatic CDP Learning Is Not Enabled on Wdmsplit Interface*

Possible Problem	Solution
N/A	Neighbor information must be manually configured. Topology learning through CDP is not supported on wdmsplit interfaces.

4.3.5 Automatic CDP Learning Is Not Enabled on Wdmsplit Interface