



## Troubleshooting OADM Module Problems

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This chapter describes how to troubleshoot OADM module problems. This chapter includes the following sections:

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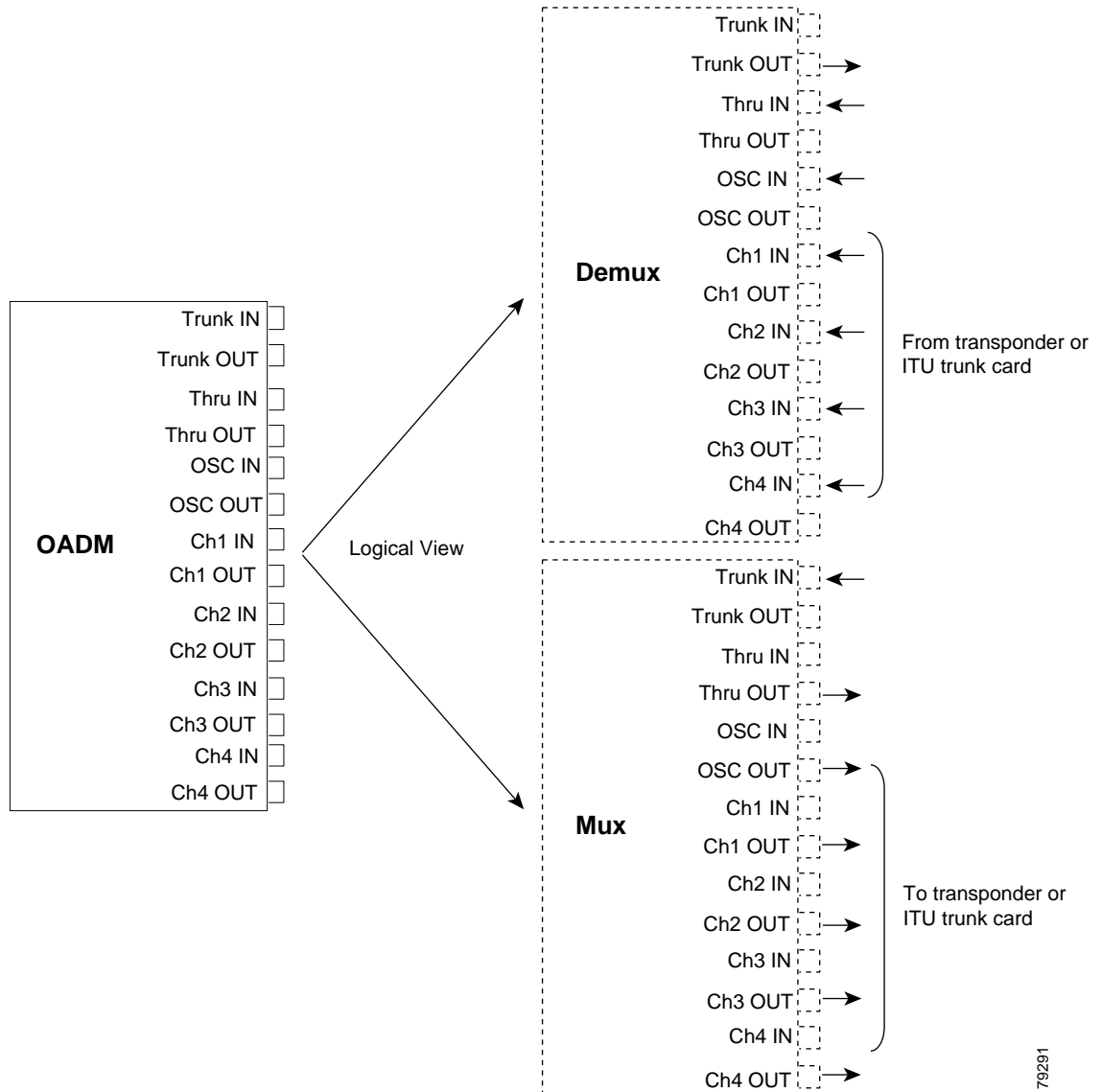
### 12.1 Overview

The OADM (optical add/drop multiplexer) modules are passive devices that optically multiplex and demultiplex a specific band of four ITU wavelengths. The OADM modules supported by the Cisco ONS 15530 each add and drop a band of channels at a node and pass the other bands through. To support the 32-channel spectrum, there are eight different 4-channel OADM modules, each supporting a different band of channels.

In the transmit direction, the OADM modules multiplex signals transmitted by the line cards over optical cross connections and provide the interfaces to connect the multiplexed signal to the DWDM trunk side. In the receive direction, the OADM modules demultiplex the signals from the trunk side before passing them over optical cross connections to the line cards.

[Figure 12-1](#) shows the physical layout of the OADM module for the channels in band A (1–4) along with a logical view of its multiplexing and demultiplexing functions. Optical signals received from the line card, the Thru IN connector, and the OSC IN connector are multiplexed and sent through the Trunk OUT connector. The optical signal received from the Trunk IN connector is demultiplexed and the OSC signal is sent to the OSC OUT connector; the dropped channels are sent to the line card; and the passed channels are sent to the Thru OUT connector.

Figure 12-1 OADM Module Architecture



## 12.2 Initial Troubleshooting Checklist

Follow this initial checklist before proceeding with the troubleshooting procedures:

- Issue a **show interfaces** command to ensure that the OADM channel interfaces are administratively up, that there are no errors on the interfaces, and that the laser frequency is correctly configured.
- Issue a **show optical filter** command to verify the configuration of the channels of the OADM interfaces.
- Issue a **show connect intermediate** command to verify the status of the wavepatch interface connected to the OADM module.
- Issue a **show facility-alarm status** command to display the alarms on the interfaces.

- Check that the trunk cards and transponder line cards are patched to the correct OADM ports. Issue a **show patch** command to verify that there are no frequency mismatches.
- Ensure that all optical connectors are clean. Refer to the *Cisco ONS 15530 Cleaning Procedures for Fiber Optic Connections* document.

## 12.3 Troubleshooting OADM Module Problems

This section contains troubleshooting procedures for OADM module problems.

### 12.3.1 OADM Module Is Not Recognized

**Symptom** The OADM module does not appear in the **show interfaces** or the **show running-config** command output.

[Table 12-1](#) describes the potential causes of the symptom and the solutions.

*Table 12-1 OADM Module Not Recognized*

Possible Problem	Solution
OADM module is not inserted properly.	Remove and carefully reinsert the OADM module. Issue a <b>show interfaces</b> command or the <b>show running-config</b> command to ensure that the OADM channel interfaces are up.

### 12.3.2 OADM Channel Interfaces Are Not Recognized After a CPU Switch Module Switchover

**Symptom** OADM channel interfaces are not recognized after a CPU switch module switchover.

[Table 12-2](#) describes the potential causes of the symptom and the solutions.

*Table 12-2 OADM Channel Interfaces Not Recognized After Switchover*

Possible Problem	Solution
OADM module IDPROM not programmed correctly.	Issue a <b>show running-config</b> command to verify that the OADM channel interfaces are present. Repeat on the standby side. If the interfaces are not present, call Cisco customer support.

### 12.3.3 Waveethernetphy or Wave Interface Is Down

**Symptom** The waveethernetphy or the wave interface on the connected transponder is down.

[Table 12-3](#) describes the potential causes of the symptom and the solutions.

*Table 12-3 Waveethernetphy or Wave Interface Is Down*

Possible Problem	Solution
Patch cables incorrectly connected.	Issue a <b>show patch</b> command and check the output for errors. If errors appear, move the patch cable to the correct port.
Patch cables are defective.	Visually inspect the patch cables. Replace the patch cables if necessary.