



Installing the CE-MR-6 Card in the Cisco ONS 15310-MA

March 2008

Product Name: 15310-CE-MR-6=

This document provides a card description, specifications, and installation procedure for the CE-MR-6 card. The CE-MR-6 card is compatible with Cisco ONS 15310-MA (ANSI) shelf assembly. Use this document in conjunction with the *Cisco ONS 15310 Procedure Guide* when working with CE-MR-6 cards.

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CE-MR-6 Card Description

The CE-MR-6 card is a 5 Gbps data module for use in the Cisco ONS 15310-MA. It provides support for L1 packet mapping functions (Ethernet to SONET). The 10/100/1000 Mbps Ethernet encapsulated traffic is mapped into SONET circuits. Each circuit has three main attributes:

- Low order, or high order
- Contiguous concatenation (CCAT) or virtual concatenation (VCAT)
- Generic framing procedure (GFP), LEX, high-level data link control (HDLC) or PPP (point-to-point protocol) based framing.
- CE-MR-6 cards support LCAS that allows hitless dynamic adjustment of SONET link bandwidth.



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The CE-MR-6 is a Layer 1 (Ethernet Private Line) and Layer 1+ (Virtual Private Wire Services) mapper card with six IEEE 802 compliant 10/100/1000 Mbps Ethernet ports that provide 1:1 mapping of Ethernet ports to circuits. It maps each port to a unique SONET circuit in a point-to-point configuration.

The CE-MR-6 card allows you to provision and manage an Ethernet private line service like a traditional SONET line. CE-MR-6 card applications include providing carrier-grade Ethernet private line services and high-availability transport.

The CE-MR-6 card carries any Layer 3 protocol that can be encapsulated and transported over Ethernet, such as IP or IPX. The Ethernet frame from the data network is transmitted on the Ethernet cable into the 10/100/1000 Mbps Ethernet ports on a CE-MR-6 card. The CE-MR-6 card transparently maps Ethernet frames into the SONET payload using packet-over-SONET/SDH (POS) encapsulation. The POS circuit, with its encapsulated Ethernet inside, is then multiplexed onto an optical card like any other SONET synchronous transport signal (STS). When the payload reaches the destination node, the process is reversed and the data is transmitted from the 10/100/1000 Mbps Ethernet ports in the destination CE-MR-6 card onto the Ethernet cable and data network.

The CE-MR-6 card supports ITU-T G.707-based standards. It allows a soft reset, which is errorless in most cases. During the soft reset if there is a provisioning change, or if the firmware is replaced during a software upgrade process, the reset is equivalent to a hard reset. For more information on a soft reset of a CE-MR-6 card using CTC, refer to the *Cisco ONS 15310 Procedure Guide*.

The CE-MR-6 card supports the following copper and fiber Small Form-Factor Pluggables (SFPs):

- ONS-SI-GE-SX
- ONS-SI-GE-LX
- ONS-SI-GE-ZX
- ONS-SI-100-FX
- ONS-SI-100-LX10
- ONS-SE-100-BX10U
- ONS-SE-100-BX10D
- ONS-SE-ZE-EL

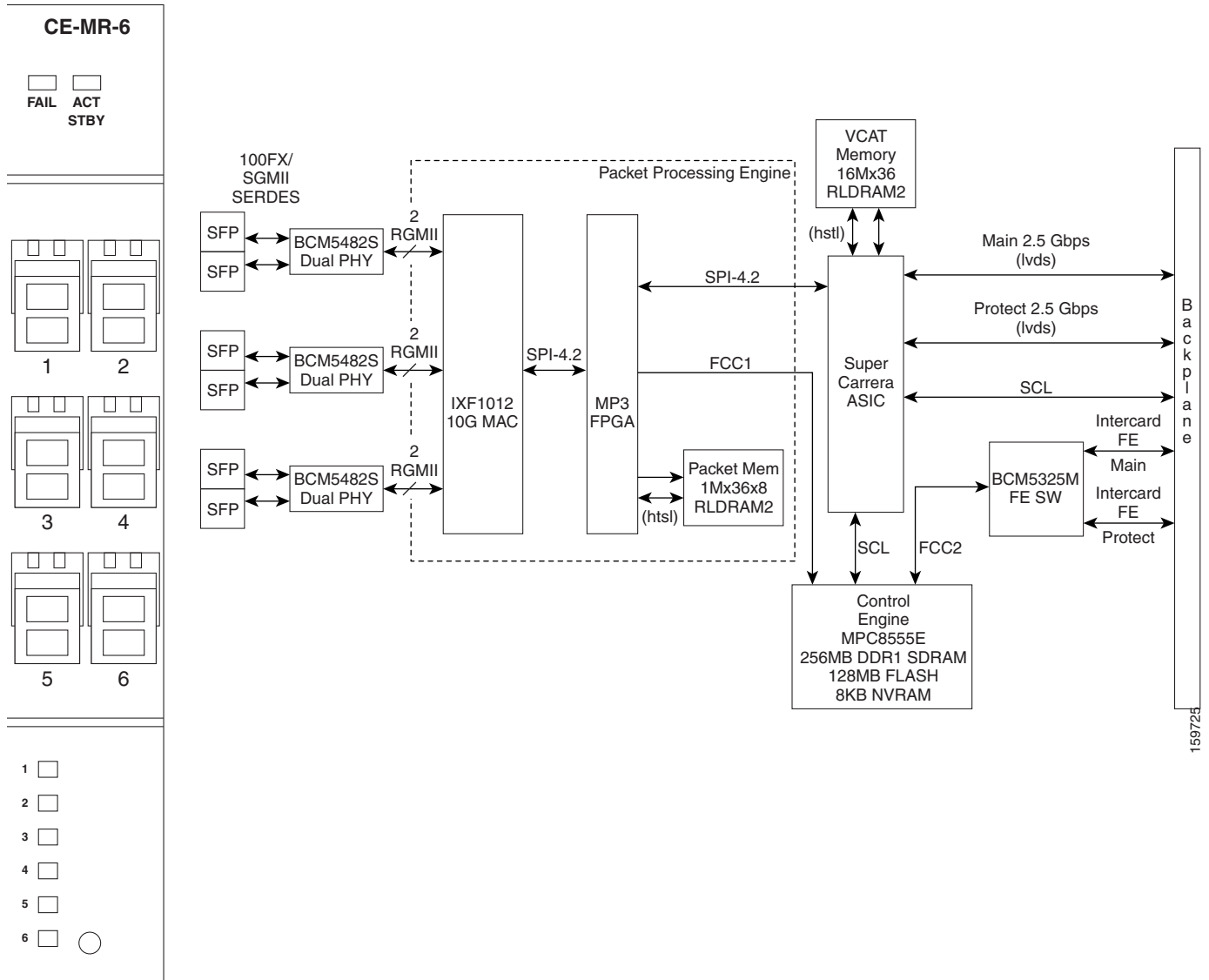


Note Due to mechanical constraints related to the dimensions of the pluggable device, two ONS-SE-ZE-EL copper SFPs cannot be inserted in the same SFP double cage receptacle. They can only be inserted into slots 1 or 2, 3 or 4, and 5 or 6. Upto three ONS-SE-ZE-EL copper SFPs can be inserted in one CE-MR-6 card

Faceplate

Figure 1 shows the CE-MR-6 card front panel.

Figure 1 CE-MR-6 Front Panel



CE-MR-6 Card Level Indicators

Table 1 shows the card-level LEDs on the CE-MR-6 card.

Table 1 CE-MR-6 Card-Level Indicators

Card-Level LEDs	Description
FAIL LED (Red)	The red FAIL LED indicates that the card processor is not ready or that a catastrophic software failure occurred on the CE-MR-6 card. As part of the boot sequence, the FAIL LED blinks until the software deems the card operational, then it turns off.
ACT/STBY LED (Green)	The ACT/STBY LED provides the operational status of the CE-MR-6. When the ACT/STBY LED is green, it indicates that the CE-MR-6 card is active and the software is operational; otherwise, it is off.

CE-MR-6 Port Level Indicators

Table 2 shows the port-level LEDs on the CE-MR-6 card.

Table 2 CE-MR-6 Port-Level Indicators

Port-Level Indicators	Description
Off	No link exists to the Ethernet port.
Steady amber	A link exists to the Ethernet port, but traffic flow is inhibited. For example, a lack of circuit setup, an error on the line, or a disabled port might inhibit traffic flow.
Solid green	A link exists to the Ethernet port, but no traffic is carried on the port.
Flashing green	A link exists to the Ethernet port, and traffic is carried on the port. The LED flash rate reflects the traffic rate for that port.

CE-MR-6 Card Specifications

The CE-MR-6 card has the following specifications:

- Environmental
 - Operating temperature
I-Temp: -40 to +65 degrees Celsius (-40 to 149 degrees Fahrenheit)
 - Operating humidity: 5 to 95%, noncondensing
 - Power consumption: 63.00 W, 1.32 A at -48 V, 214.96 BTU/hr
- Dimensions
 - Height: 176.28 mm (6.94 in.)
 - Width: 34.29 mm (1.35 in.)
 - Depth: 236.68 mm (9.318 in.)
 - Weight (not including clam shell): 0.499 kg (1.1 lb)

Installing the CE-MR-6 Card



Warning

Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place. Statement 1029



Warning

To comply with the Telcordia GR-1089 Network Equipment Building Systems (NEBS) standard for electromagnetic compatibility and safety, connect the copper Ethernet ports to intrabuilding or nonexposed wiring and cabling only.



Caution

Do not install the CE-MR-6 card in an ONS 15310-MA if the ambient temperature exceeds 131 degrees F (55 degrees C).



Caution

Always use the supplied ESD wristband when working with a powered ONS 15310-MA. Plug the wristband cable into either of the ESD jacks, on the far left and right faceplates in the shelf.



Note

If protective clips are installed on the backplane connectors of the cards, remove the clips before installing the cards.

Step 1

Install the CE-MR-6 card in a traffic card slot:

- a. Open the card ejector.
- b. Use the ejector at the top of the card and firmly slide the card along the guide rails until the card plugs into the receptacle at the back of the slot.
- c. Verify that the card is inserted correctly and close the ejector on the card.



Note

The CE-MR-6 card is hot-pluggable, so it can be inserted or removed without turning off the power to the ONS 15310-MA.

Step 2

Verify the CE-MR-6 card LED activity:

- a. Verify that the red FAIL LED is off.
- b. Verify that the green ACT LED is on.

Step 3

When you log into CTC, verify that the card appears properly in CTC node view.

Stop. You have completed this procedure.

Related Documentation

- *Cisco ONS 15310-CL and Cisco ONS 15310-MA Procedure Guide*
- *Cisco ONS 15310-CL and Cisco ONS 15310-MA Reference Manual*
- *Cisco ONS 15310-CL and Cisco ONS 15310-MA Troubleshooting Guide*

Obtaining Optical Networking Information

This section contains information that is specific to optical networking products. For information that pertains to all of Cisco, refer to the [Obtaining Documentation, Obtaining Support, and Security Guidelines](#) section.

Where to Find Safety and Warning Information

For safety and warning information, refer to the *Cisco Optical Transport Products Safety and Compliance Information* document that accompanied the product. This publication describes the international agency compliance and safety information for the Cisco ONS 15310-MA system. It also includes translations of the safety warnings that appear in the ONS 15310-MA system documentation.

Cisco Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including Cisco ONS 15xxx product documentation, is available in a CD-ROM package that ships with your product. The Optical Networking Product Documentation CD-ROM is updated periodically and may be more current than printed documentation.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

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