



Maintaining the Cisco uBR-MC3GX60V-RPHY Line Card

Maintaining the Cisco uBR-MC3GX60V-RPHY Line Card 2

Removing and Replacing the SFP Module from the Cisco uBR-MC3GX60V-RPHY Line Card 2

Removing and Replacing the Cisco uBR-MC3GX60V-RPHY Line Card 5

Revised: August 1, 2014,

Maintaining the Cisco uBR-MC3GX60V-RPHY Line Card

Removing and Replacing the SFP Module from the Cisco uBR-MC3GX60V-RPHY Line Card

Removing an SFP Module from the Existing Line Card

Before You Begin

Have the following tools and supplies ready before performing this task:

- Antistatic bag
- Dust plug, if required
- ESD-preventive wrist strap



Caution Removing and inserting an SFP module frequently can damage the SFP module. Do not remove and insert the SFP modules unless absolutely necessary.

Procedure

Step 1 Disconnect all the network cables from the SFP module connector. For optical SFP module, immediately reinstall the dust plugs in the SFP optical bores.

Note We recommend that you do not remove the SFP module with the fiber-optic cables attached to it as it can damage the cable, cable connector, and optical interfaces in the SFP module.

Step 2 Unlock and remove the SFP module from the socket connector using one of the following:

- If the SFP module has a Mylar tab latch, pull the tab gently in a slightly downward direction until the SFP module disengages from the socket connector, and then pull the SFP module straight out of the socket. Do not twist or pull the Mylar tab as it can detach from the SFP module.
- If the SFP module has an Actuator button latch, gently press the Actuator button on the front of the SFP module until it clicks and the latch mechanism releases the SFP module from the socket connector. Grasp the Actuator button between your thumb and index finger, and carefully pull the SFP module straight from the socket.
- If the SFP module has a Bale-clasp latch, pull the bale to eject the SFP module from the socket. If the Bale-clasp latch is obstructed and you cannot use your index finger to open it, use a small, flat-blade screwdriver or a long

narrow instrument to open the bale-clasp latch. Grasp the SFP module between your thumb and index finger, and carefully remove it from the socket.

- Step 3** Place the removed SFP module in an antistatic bag.
- Step 4** Insert a dust plug into each unused Gigabit Ethernet port.
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What to Do Next

- To remove the existing line card, see [Removing the Existing Line Card from the Card Slot](#), on page 5.
- To install an SFP module on the Cisco uBR-MC3GX60V-RPHY line card, see [Installing an SFP Module on the Cisco uBR-MC3GX60V-RPHY Line Card](#), on page 3

Installing an SFP Module on the Cisco uBR-MC3GX60V-RPHY Line Card

Before You Begin

Ensure that the Cisco uBR-MC3GX60V-RPHY line card is installed in the Cisco CMTS chassis. See [Installing the Cisco uBR-MC3GX60V-RPHY Line Card in the Card Slot](#), on page 7.

Have the following tools and supplies ready before performing this task:

- Appropriate SFP module
- ESD-preventive wrist strap

For more information on SFP modules that are supported on the Cisco uBR-MC3GX60V-RPHY line card, see [SFP Modules for the Cisco uBR-MC3GX60V-RPHY Line Card](#).

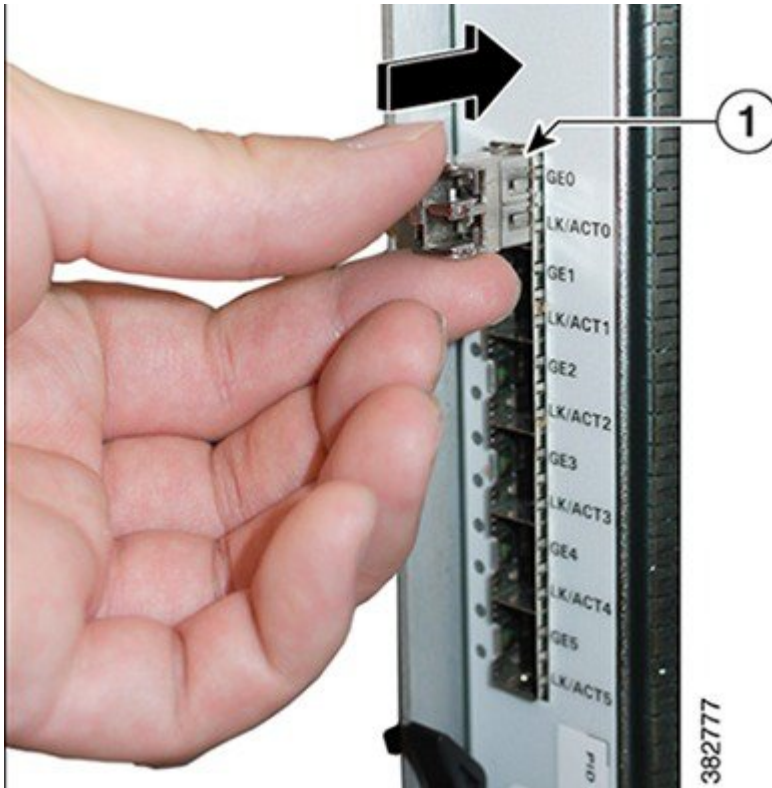
Procedure

- Step 1** Attach an ESD-preventive wrist strap to your wrist.
- Step 2** Remove the SFP module from its protective packaging.
- Step 3** Locate the transmit (Tx) and receive (Rx) markings on the top side of the SFP module.
Note On some SFP modules, the Tx and Rx markings might be replaced by arrowheads pointing from the SFP connector (transmit direction or Tx) and towards the connector (receive direction or Rx).
- Step 4** Align the SFP module in front of the socket opening.
- Step 5** Insert the SFP module into the socket until you feel the SFP module connector snap into the socket connector and then close the SFP latch.

Note For optical SFP modules, following are the guidelines to remove the dust plugs and make any optical connections:

- Do not remove the protective dust plugs on the unplugged fiber-optic cable connectors and the transceiver optical bores until you are ready to make a connection.
- inspect and clean the LC connector end-faces just before you make any connections.
- Grasp the LC connector housing to plug or unplug a fiber-optic cable.

Figure 1: Inserting an SFP Module into a Gigabit Ethernet Port



1	SFP Module	—
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Step 6 Remove the dust plug from the SFP module and keep it safe for future use.

Note Leave the dust plug in the SFP module port if a cable is not being installed.

What to Do Next

To connect the network cable to an SFP module, see [Connecting a Network Cable to an SFP Module](#).

Removing and Replacing the Cisco uBR-MC3GX60V-RPHY Line Card

Removing the Existing Line Card from the Card Slot

Before You Begin

- Remove the SFP module from the line card. See [Removing an SFP Module from the Existing Line Card](#), on page 2.
- Delete the existing configurations on the PRE using the **no card** command.

Have the following tools and supplies ready before performing this task:

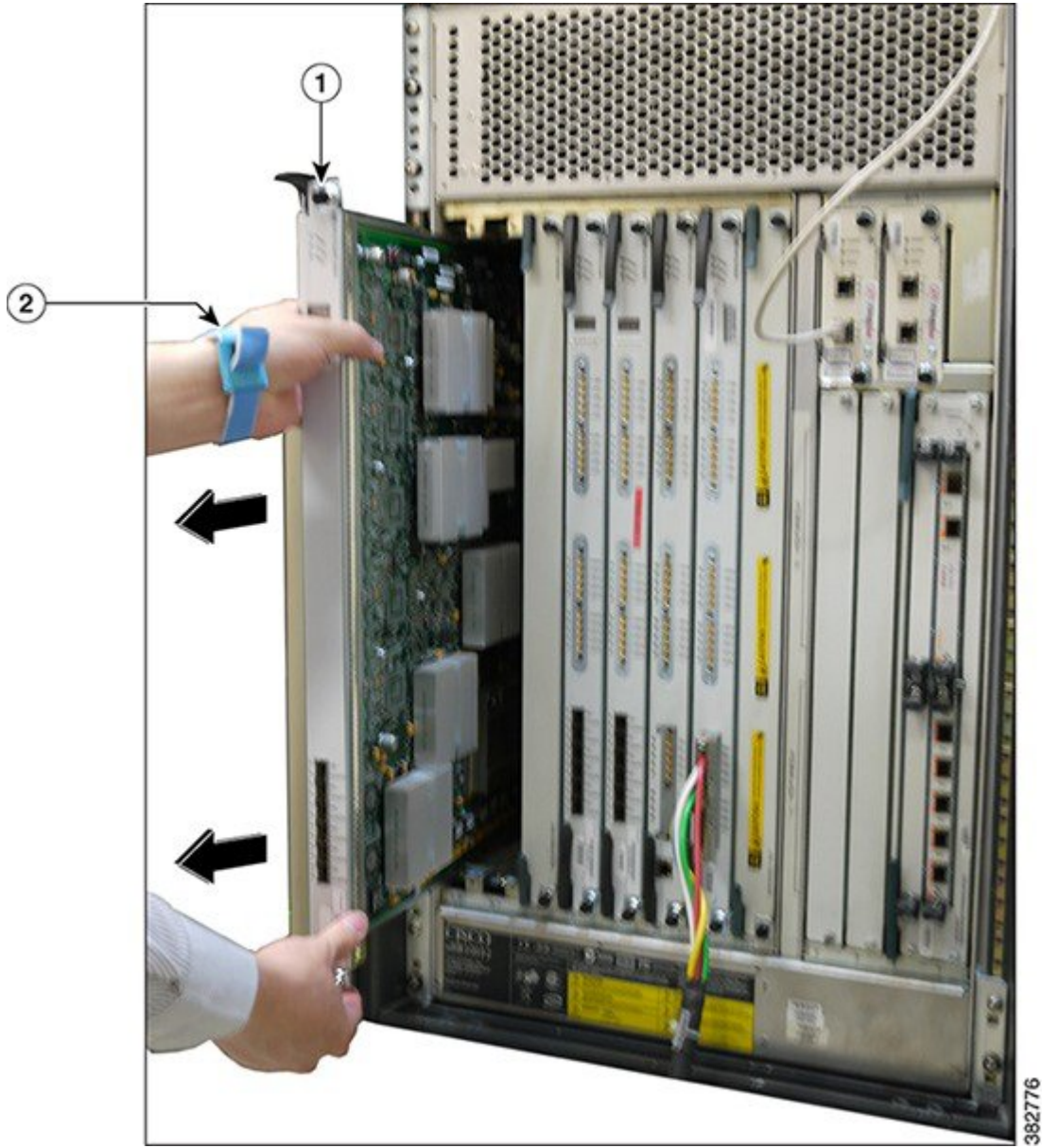
- T-10 Torx driver tool or 1/4-inch flathead screwdriver
- Antistatic bag
- Blank card slot cover, if required
- ESD-preventive wrist strap

Procedure

- Step 1** Attach an ESD-preventive wrist strap to your wrist.
- Step 2** Unscrew the top and bottom captive screws on the line card using a T-10 Torx driver tool or flathead screwdriver.
- Step 3** Simultaneously pivot both ejector levers away from the line card to disengage the line card from the chassis.
- Step 4** Slide the line card out of the slot in the chassis. Place it on an antistatic surface or in a static shielding bag with the component side up.

Caution Do not drop the line card. Dropping the line card can damage the carrier rails and card guides and prevent the reinstallation.

Figure 2: Removing the Existing Line Card from the Chassis



1	Captive screw	2	ESD-preventive strap
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What to Do Next

Perform one of the following:

- Install a new or replacement Cisco uBR-MC3GX60V-RPHY line card, see [Installing the Cisco uBR-MC3GX60V-RPHY Line Card in the Card Slot](#).
- Install a Blank card slot cover over the slot and tighten the captive screws, if you are not installing any line card in the slot. This ensures to keep dust out of the chassis and maintain proper airflow through the line card compartment.

Installing the Cisco uBR-MC3GX60V-RPHY Line Card in the Card Slot

Before You Begin

- Ensure that the existing line card or the Blank card slot cover is removed. See [Removing the Existing Line Card from the Card Slot, on page 5](#).
- Ensure that you attach an ESD-preventive wrist strap to your wrist.
- For Class B emission compliance requirements, the two ferrites available in the CMTS accessory kit must be installed on the input DC power harness of the chassis. These ferrite beads are clamp-on type and should be placed as close to the input DC power connector (DC input terminal connector) as possible.

Have the following tools and supplies ready before performing this task:

- Cisco uBR-MC3GX60V-RPHY line card
- T-10 Torx driver tool or 1/4-inch flathead screwdriver
- ESD-preventive wrist strap

Procedure

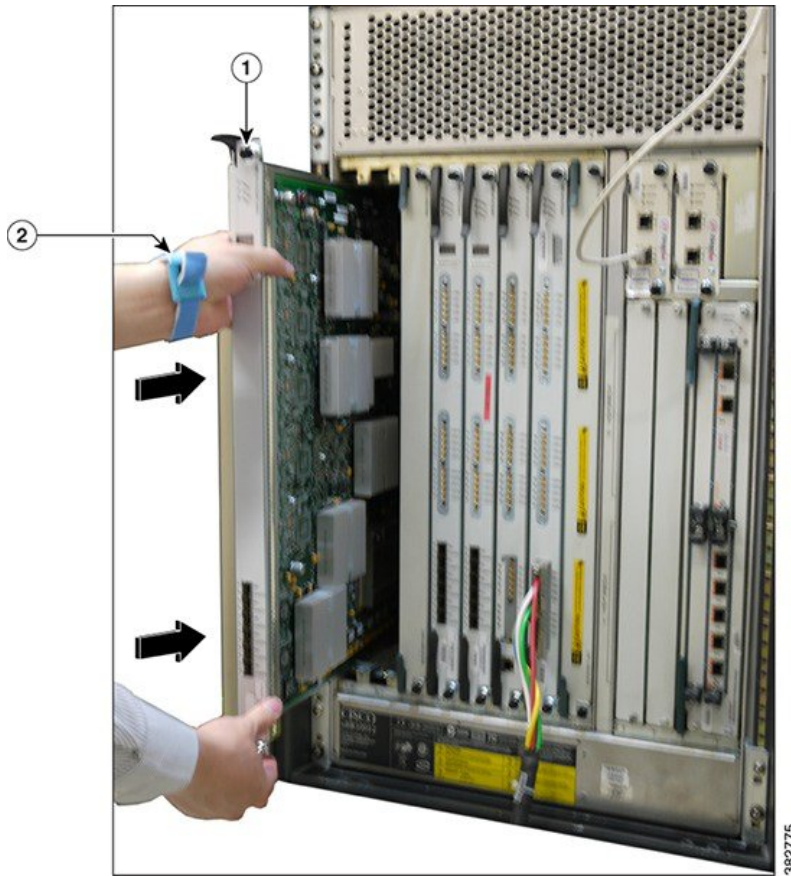
Step 1 Attach an ESD-preventive wrist strap to your wrist.

Step 2 Choose an available slot (5/0 to 8/0) for the line card and carefully align the upper and lower edges of the Cisco uBR-MC3GX60V-RPHY line card with the upper and lower guides in the chassis.

Caution The Cisco uBR-MC3GX60V-RPHY line card weighs 13 lbs. Use both hands when handling the Cisco uBR-MC3GX60V-RPHY line card. Do not drop the line card to avoid damaging the carrier rails. Bent or damaged rails can damage the line card guides and prevent line card installation. When installing line cards for the first time, or when all the captive screws of the line card are loose, insert cards first in slot 5/1 and work towards slot 8/0 to prevent uneven gasket pressure.

Step 3 Slide the Cisco uBR-MC3GX60V-RPHY line card into the slot until it is firmly seated in the chassis.

Figure 3: Installing the Cisco uBR-MC3GX60V-RPHY Line Card in the Cisco CMTS Chassis



1	Captive screw	2	ESD-preventive strap
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Step 4 Close the ejector levers to secure the Cisco uBR-MC3GX60V-RPHY line card.

Step 5 Engage and tighten the captive screws with your fingers. Then, use either a T-10 Torx driver tool or a common flathead screwdriver to tighten the captive screws from 5 to 7 in-lbs.

What to Do Next

To install the SFP module, see [Installing an SFP Module on the Cisco uBR-MC3GX60V-RPHY Line Card](#), on page 3.

Online Insertion and Removal of the Cisco uBR-MC3GX60V-RPHY Line Card

You can replace a Cisco uBR-MC3GX60V-RPHY line card with only a Cisco uBR-MC3GX60V-RPHY line card.

Before You Begin

- Save the Cisco uBR-MC3GX60V-RPHY line card configurations before starting the OIR.
- Change the standby card (if available) to HOT state.
- Save the startup configuration file before any reload of the system (if there is a need to reload), after a successful OIR.
- Perform OIR when the Cisco CMTS is up and running.



Restriction

- The OIR cannot be used if you want to upgrade to Cisco uBR-MC3GX60V-RPHY line card directly from any of the old line card (Cisco uBR-MC3GX60V, Cisco uBR10-MC5X20H, Cisco UBR-MC20X20V) other than LC like 520 or 20x20 to 3G60.
 - OIR cannot be performed when the standby PRE is being loaded.
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Procedure

Step 1 Enter the **cr10k card oir-compatibility** command for the existing Cisco uBR-MC3GX60V-RPHY line card.

Example:

```
Router(config)# cr10k card 8/0 oir-compatibility
```

This command preserves the configuration and performs internal synchronization to ensure that the OIR runs successfully.

Step 2 Save the configuration to ensure the transition.

Example:

```
Router# copy running-config startup-config
```

Step 3 Power down the existing Cisco uBR-MC3GX60V-RPHY line card using **cable power off** command.

Example:

```
Router# cable power off 8/0  
Line Card 8/0 is POWERED OFF
```

This powers off the Cisco uBR-MC3GX60V-RPHY line card gracefully.

Step 4 Before removing the existing Cisco uBR-MC3GX60V-RPHY line card, verify that the proper grounding instructions have been followed.

Step 5 Remove the existing Cisco uBR-MC3GX60V-RPHY line card from the slot.
See [Removing the Existing Line Card from the Card Slot](#), on page 5.

Step 6 Install the new Cisco uBR-MC3GX60V-RPHY line card in the slot.
See [Installing the Cisco uBR-MC3GX60V-RPHY Line Card in the Card Slot](#), on page 7.

Step 7 Power up the new Cisco uBR-MC3GX60V-RPHY line card using the **cable power on** command.

Example:

```
Router# cable power on 8/0
```

- Step 8** Verify that the new Cisco uBR-MC3GX60V-RPHY line card and line protocol is up using the **show interface cable** command.

Example:

```
Router# show interface cable 8/0/0
Cable8/0/0 is up, line protocol is up
Hardware is BCM3210 ASIC, address is 010a.13e8.1ca8 (bia 010a.13e8.1a60)
Internet address is 192.1.1.3/24
MTU 1500 bytes, BW 27000 Kbit, DLY 1000 usec, rely 255/255, load 1/255
Encapsulation, loopback not set, keepalive not set
ARP type: ARPA, ARP Timeout 04:00:00
Last input 4d07h, output 00:00:00, output hang never
Last clearing of "show interface" counters never
Queuing strategy: fifo
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
5 minute input rate 1834000 bits/sec, 2385 packets/sec
5 minute output rate 1982000 bits/sec, 2431 packets/sec
24461542 packets input, 2348214388 bytes, 0 no buffer
Received 1979 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
24854257 packets output, 2536222931 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 output buffer failures, 0 output buffers swapped out
```

- Step 9** Verify the hardware status using the **show controllers cable** command.

Example:

```
Router# show controllers cable 8/0/0
Cable8/0/0 JIB hardware status:
JIB Downstream port Enabled
JIB Upstream port 0 Enabled
JIB Upstream port 1 Enabled
JIB Upstream port 2 Enabled
JIB Upstream port 3 Enabled
Cable8/0/0 Upconverter is Enabled Output is Enabled
```

- Step 10** Verify the configuration with the **show running-configuration** command.
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