



Installing a Cisco uBR10-LCP2-MCxx Cable Interface Line Card

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Warning

Only trained and qualified personnel should be allowed to install, replace, or service this product.



Caution

You must be properly grounded before handling this ESD-sensitive product.

1 Overview

This quick start guide shows you how to install a Cisco uBR10-LCP2-MCxx cable interface line card in the Cisco uBR10012 router chassis.

2 Feature Description

The Cisco uBR10-LCP2-MC16x and the Cisco uBR10-LCP2-MC28x cable interface line cards, together with IF to RF upconverters, serve as the RF interface between the cable headend and DOCSIS- or EuroDOCSIS-based cable modems and set-top boxes (STB).

- The Cisco uBR10-LCP2-MC16C/E/S cable interface line card provides one downstream channel and six upstream channels.
- The Cisco uBR10-LCP2-MC28C cable interface line card provides two downstream channels and eight upstream channels.

The Cisco uBR10-LCP2 MC16x and the Cisco uBR10-LCP2-MC28C cards are a combination of the Cisco uBR10-LCP2 adapter card and the Cisco uBR-MC16x or Cisco uBR-MC28C cable interface line cards.



Note

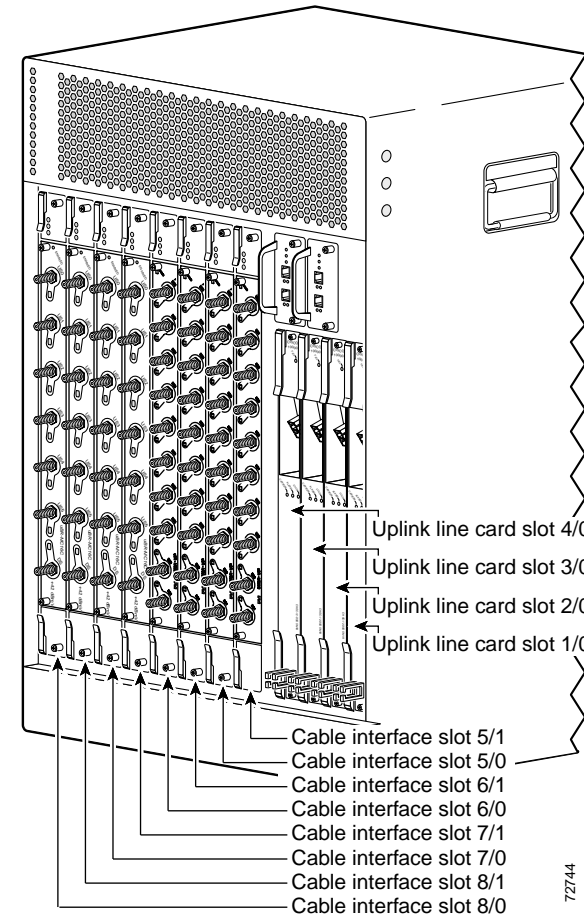
For information about removing a cable interface line card from the adapter card, refer to *Installing a Cable Interface Line Card in the Cisco uBR10-LCP2 Adapter Card*. See “Related Documentation”.

The Cisco uBR10-LCP2-MC16x and the Cisco uBR10-LCP2-MC28C use industry-standard F-connectors for coaxial cable connections.

All cards support online insertion and removal (OIR).

Figure 1 shows a Cisco uBR10012 router chassis with both the Cisco uBR10-LCP2-MC16C and the Cisco uBR10-LCP2-MC28C cards installed.

Figure 1 Cisco uBR10012 Router Chassis

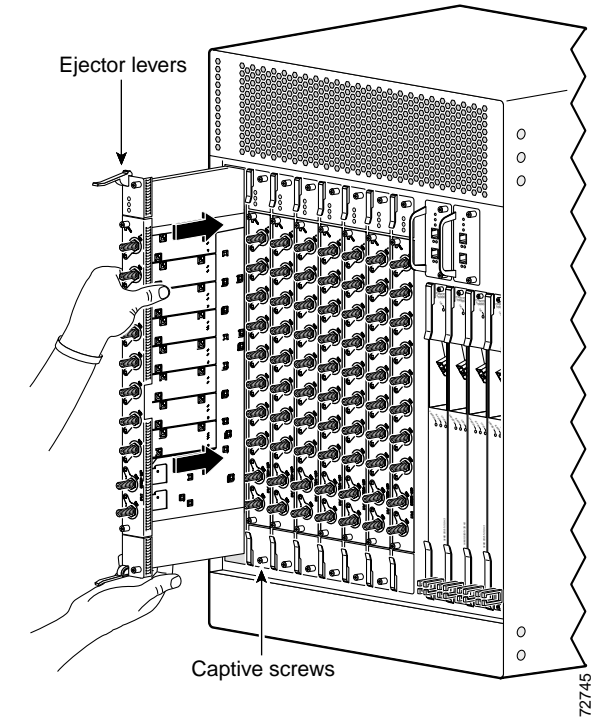


3 Installing the Card

- Step 1** Make sure that you are grounded.
- Step 2** Clear enough interface and power cables to allow sufficient space to work.
- Step 3** If installing a new card in a blank slot, remove the blank slot cover and discard it. If replacing a card, see “Removing the Card” before continuing with the installation.
- Step 4** Verify that the ejector levers on the card are perpendicular to the faceplate. See Figure 2.

- Step 5** Grasp the faceplate of the card with one hand and place your other hand under the card carrier.
- Step 6** Carefully align the upper and lower edges of the card with the upper and lower guides in the chassis.
- Step 7** Slide the card into the slot until you can feel it seat in the backplane connectors.

Figure 2 Inserting the Card in the Chassis



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Step 8 Simultaneously pivot both ejector levers toward each other until they are parallel to the faceplate. This secures the card to the backplane.

Step 9 Tighten the top and bottom captive screws. See Figure 2.



Tip Make sure that the captive screws are tight on each newly installed card. These screws prevent accidental removal of the card and provide proper grounding for electromagnetic interference (EMI) shielding.

4 Removing the Card

To prevent the alarms from activating, administratively shut down the card before removing it from the chassis. Refer to “Shutting Down and Restarting the Interface” in the *Cisco uBR10012 Software Configuration Guide*. See “Related Documentation”.

If the maintenance LED is on, you can remove the cable interface line card without affecting system operations.

Step 1 Make sure that you are grounded.

Step 2 Disconnect all the cables from the card.

Step 3 Unscrew the top and bottom captive screws on the card.

Step 4 Simultaneously pivot both ejector levers away from the card to disengage the card from the backplane.

Step 5 Slide the card out of the slot and place it on an antistatic surface.



Note For proper cooling and airflow, always install a blank cable interface line card cover in a blank line card slot.

5 Troubleshooting

1. Are *all* enabled LEDs on?

If yes, the system is operational.

If no, check the following possibilities.

- a. If the enabled LED on a cable interface line card is off, verify that the card has been enabled and configured for operations. The enabled LED remains off when a card has not been configured and enabled.
- b. If a port has been enabled but its corresponding enabled LED is still off, check to see if the card has pulled away from the router. Reseat the card in its slot (you do not have to turn off the system power when removing or replacing a card). After the system re-initializes the interfaces, the enabled LED on the cable interface line card should come on.

Table 1 LEDs/Status

LED/Status	Description
POWER—green	Card has power
POWER—off	No power to card
STATUS—yellow	In boot or self test mode, or downloading code
STATUS—green	Card operational
STATUS—blinking green	Protect or standby mode
MAINT—off	No maintenance required
MAINT—yellow	Safe to remove card
ENABLED—green	Card operating normally
ENABLED—off	Card is not enabled
US—green	Upstream port enabled
US—off	Upstream port not enabled
DS—green	Downstream port enabled
DS—off	Downstream port not enabled

2. If the enabled LED remains off after the above checks, it is likely that the system has detected a processor hardware failure.

3. Contact Cisco TAC for further information and help. To access the Cisco TAC web site, go to the following URL:

<http://www.cisco.com/tac>

6 Technical Specifications

Table 2 Order Numbers and Specifications

Description	Order Numbers/ Specifications
DOCSIS, F-conn	UBR10-LCP2-MC16C, UBR10-LCP2-MC16C= UBR10-LCP2-MC16S, UBR10-LCP2-MC16S=
EuroDOCSIS, F-conn	UBR10-LCP2-MC16E, UBR10-LCP2-MC16E=
DOCSIS, F-conn	UBR10-LCP2-MC28C, UBR10-LCP2-MC28C=
Blank covers	UBR10-MC-Covers=
Adapter card	UBR10-LCP2 UBR10-LCP2=
Weight	12 lb (5.44 kg)
Power consumption	
MC16C/E/S	80 Watts (273.15 BTUs)
MC28C	110 Watts (375.59 BTUs)
Output	
MC16C	+42 dBmV +/-3dB
MC16S	+42 dBmV +/-2dB
MC16E	+40 dBmV +/-3dB
MC28C	+42 dBmV +/-3dB
Downstream mod	QAM-64, QAM-256
Upstream mod	QPSK, QAM-16

Software Requirements

Cisco IOS 12.2(4)XF or later release

Cisco IOS 12.2(8)BC2 or later release for the Cisco uBR10-LCP2-MC16S card

7 Related Documentation

For more information see the following:

- *Cisco uBR10012 Universal Broadband Router Hardware Installation Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/hig/index.htm>
- *Cisco uBR10-LCP2-MC16C/MC16E Cable Interface Card for the Cisco uBR10012 Router*
http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/frus/ublcp_16.htm
- *Cisco uBR10-LCP2-MC28C Cable Interface Line Card for the Cisco uBR10012 Router*
<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/frus/ub10clcp.htm>
- *Cisco uBR10012 Universal Broadband Router Software Configuration Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/scg/index.htm>
- *Cisco uBR10012 Router Software Features*
<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/ub10ksw/index.htm>
- *Cisco uBR10000 Series Universal Broadband Router Release Notes*
<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ub10krns/index.htm>
- *Cisco CMTS Feature Guide*
http://www.cisco.com/univercd/cc/td/doc/product/cable/cab_rout/cmtsfg/index.htm
- *Installing a Cisco uBR10-LCP2-MCxx Cable Interface Line Card Quick Start Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/index.htm>
- For more Cisco cable products information, go to the following URL:
<http://www.cisco.com/warp/public/44/jump/cable.shtml>