



Quick Start Guide

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## Cabling the Cisco uBR10-MC5X20S/U/H Cable Interface Line Card with Universal Cable Holder—UCH2

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



**Caution** Use an ESD-preventive wrist or ankle strap during the line card installation.

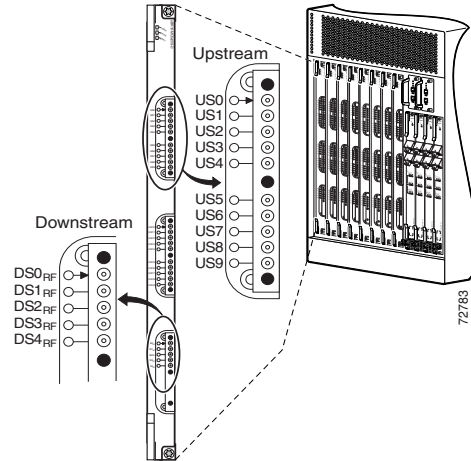
## 1 Feature Description

The Cisco uBR10-MC5X20S, U and H cable interface line cards use 75-ohm precision video coax cables and 75-ohm MCX connectors to connect to the CMTS.

This document describes how to install and remove cables and the second generation universal cable holder (UCH2).

Figure 1 shows the cards in a Cisco uBR10012 router.

Figure 1 Cisco uBR10-MC5X20S/U/H Cards



The cables come in kits that consist of cable sets and spare F connectors.

The MC5X20 dual-shielded cable kit includes:

- Two 10-bundle MCX to “F” conn., 3-m cables
- One 5-bundle MCX to “F” conn., 3-m cables
- 28 spare F connectors

The MC5X20 quad-shielded cable kit includes:

- Five 5-bundle MCX to “F” conn., 3-m cables
- Five spare F connectors

The cable kits do not contain the universal cable holder (UCH); however, the UCH is available with

line card accessory kits and spare cards. Or, the UCH2 is available as a spare.



**Note** In European markets only, you must use the quad-shielded cable kit with the Cisco uBR10-MC5X20H.

Tools required for cable installation include:

- 1/4-in. slotted screwdriver and T-10 TORX driver

Also see “Tool Manufacturers and Part Numbers.”

## 2 Installing the Cables

The UCH must be used for all Cisco uBR10-MC5X20S/U/H line card cable connections. Failure to use the UCH may cause permanent damage to the line card connectors and result in low or no RF output.

**Step 1** Loosen the top screws and slide open the lock bar. (If the UCH2 is already installed in the line card, use a screwdriver to slide open the bar. See Figure 5.)

**Step 2** Remove the ESD cap from a cable, and insert it into the hole in the UCH2. See Figure 2.

We recommend that the cables be installed in the UCH as shown in Table 1 and Table 2.



**Caution** If using quad-shielded cables, make sure there is no heat-shrink wrap on the ends by the MCX connectors.

Table 1 Port—Dual-Shielded Cable Colors

US0–US9	US0 to US9—red, white, blue, green, yellow, violet, orange, black, gray, brown, respectively.
US10–US19	US10—grey; US11—brown; US12 to US19—red, white, blue, green, yellow, violet, orange, black, respectively.
DS0–DS4	DS0 to DS4—red, white, blue, green, yellow, respectively.

Table 2 Port—Quad-Shielded Cable Colors

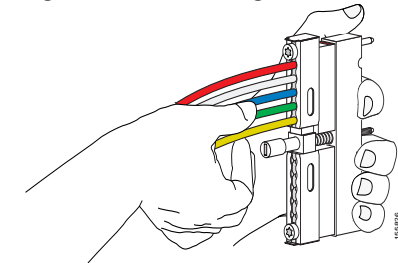
US0–US9	US0 to US9—red, white, blue, green, yellow, red, white, blue, green, yellow, respectively.
US10–US19	US10 to US19—red, white, blue, green, yellow, red, white, blue, green, yellow, respectively.
DS0–DS4	DS0 to DS4—red, white, blue, green, yellow, respectively.

**Step 3** Insert the cable completely into the UCH. (The cables will fit loosely in the holes until the lock bar is closed in Step 5.)



**Caution** Do not kink the cables.

Figure 2 Inserting a Cable in the UCH2



**Step 4** Repeat this procedure for all of the cables.

**Step 5** Ensure the cables are fully inserted in the UCH2 and slide the lock bar closed completely. (The lock bar will not close if cables are not fully inserted or properly aligned.)

**Step 6** Using the T-10 TORX driver tool tighten the screws on the lock bar (maximum torque—10 in-lbs).

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### 3 Installing the UCH

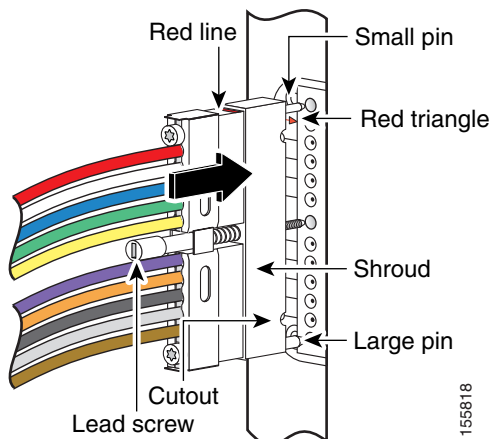
After the cables are installed in the UCH, perform the following steps to prevent ESD damage to the line card.



**Note** Before proceeding, remove the protective sticker covering the line card DS ports.

- Step 1** Make sure that you are grounded using an ESD-preventive wrist or ankle strap.
- Step 2** Attach a jumper cable to the ground point on the chassis.
- Step 3** Briefly touch each cable's center connector with the jumper cable to remove any built-up ESD potential.
- Step 4** Position the UCH2 so the red line is on the same side as the red triangle on the faceplate.

**Figure 3** Installing the UCH



- Step 5** Align the end pins with the pin holes in the faceplate, and guide the UCH onto the faceplate.
- Step 6** Hold the cables and UCH in place while finger tightening the leadscrew. Do not bend the cables at right angles.
- Step 7** Use the flathead screwdriver to tighten the leadscrew 10 in.-lbs, (maximum torque 15 in.-lbs).



**Caution** Torquing the leadscrew to more than 20 in.-lbs can cause the leadscrew to fail.

The UCH is fully engaged when the semi-circles on the shroud show metal and the red and black lines are completely covered. See Figure 3.

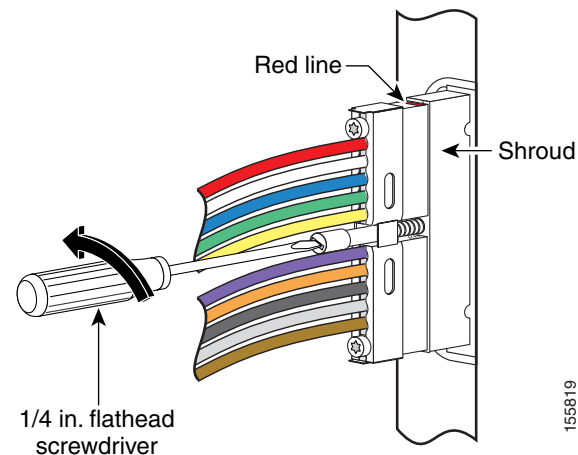
### 4 Removing the UCH

- Step 1** Make sure that you are grounded using an ESD-preventive wrist or ankle strap.
- Step 2** Loosen the lead screw (counterclockwise) until it disengages from the faceplate.
- Step 3** Gently pull the UCH straight away from the faceplate.



**Note** If the UCH does not easily pull away from the card, loosen the lead screw until it completely disengages from the faceplate.

**Figure 4** Removing the UCH



### 5 Removing the Cables

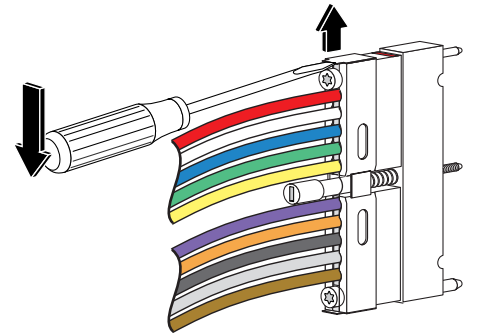
- Step 1** Use the T-10 TORX driver tool to loosen the lock bar on the side you want to remove cables.
- Step 2** Slide the lock bar open by hand, or with a flathead screwdriver if the bar is stuck or hard to access. See Figure 5.  
(Make sure the lock bar is completely open or the cables will not release.)



**Caution** Be careful not to bend the cables.

- Step 3** Carefully pull the cable out of the hole.

**Figure 5** Sliding Open the Lock Bar



### 6 Troubleshooting

Check the following:

1. Verify that the lead screw is tight.
2. Verify that the shroud fits snugly against the faceplate (the cutouts are closed).
3. Verify that the cables are properly seated and secure in the UCH.

If downstream RF power measurements are made, use these ESD precautions to prevent damage to the product:

1. Check for a proper ground on the equipment and chassis before connecting any cables.
2. Ensure that there is a common ground between all the test equipment that you are using and the unit under test.

3. Keep test cables as short as possible to limit static buildup.
4. Before attaching any test cables to the unit under test, momentarily ground the center pin of the test cable to remove any ESD potential that may be present.

Contact Cisco TAC for further information:  
<http://www.cisco.com/tac>

Tool Manufacturers and Part Numbers

**Table 3** Tool Part Numbers

Cisco Systems	
MC5X20 dual-shielded MC5X20 quad-shielded UCH2	CAB-RFSW520TPMF= CAB-RFSW520QTPMF= CAB-520-UCH2
White Sands Engineering, Inc.	
F and MCX crimper tool	PN-ACT-483
MCX connector strip tool: Dual-shielded cables Quad-shielded cables	PN-CPT-7538-125 PN-CPT-7538-200Q
Dual-shielded F connector strip tool	CPT-7538
Quad-shielded F connector strip tool	CPT-7538Q
75-ohm precision miniature video cable: Dual-shielded single cable Quad-shielded five pk	PN-WS940 PN-WS386
MCX fixed pin conn.: Dual-shielded cable Quad-shielded cable	PN-MCXFP PN-MCXFPQ
F conn.: Dual-shielded cable Quad-shielded cable	PN-ASFP PN-ASFPQ

### 7 Related Documentation

- *Cisco uBR10-MC5X20S/U/H Cable Interface Line Card for the Cisco uBR10012 Router:*  
<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/frus/index.htm>
- More Cisco cable products information:

<http://www.cisco.com/warp/public/44/jump/cable.shtml>