Doc. No. 78-3549-01

Replacing FC-to-SC FDDI Adapters in the Cisco 4000 Series

Part Number: FC-SC-ADAPTER=

This document contains instructions for making Cisco 4000 series single-mode FDDI network processor module network connections using FC-to-SC interface adapters. FC-to-SC FDDI adapters allow newer versions of the Cisco 4000 series FDDI module equipped with SC-connectors to replace older versions of the module equipped with FC-connectors without changing the connectors on the fiber-optic cables.

This document is for the FC-to-SC adapter installer, who should be familiar with electronic circuitry and wiring practices and have experience as an electronic or electromechanical technician.

This document is to be used in conjunction with the *Cisco 4000 Series Public Network Certification* document. If you have a Cisco 4000-M, Cisco 4500-M, or Cisco 4700-M router, also use this document with the *Cisco 4000 Series Installation Guide* document that shipped with your router. If you have a Cisco 4000, refer to the *Cisco 4000 Hardware Installation and Maintenance* publication. If you have a Cisco 4500 or Cisco 4700, refer to the *Cisco 4000 Series Hardware Installation and Maintenance* publication.

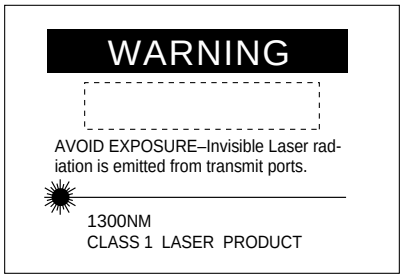
This document contains the following sections, including step-by-step procedures for replacing a FC-to-SC fiber connector adapter:

- Safety Recommendations
- Safety with Electricity
- Tools and Equipment Required
- Replacing FC-to-SC Adapters
- Cisco Connection Online

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA

Note Translations for all safety warnings included in this document can be found in the appendix "Translated Safety Warnings" in the *Cisco 4000 Series Installation Guide*.

Warning Invisible laser radiation may be emitted from the aperture ports of the single-mode FDDI card when no cable is connected. *Avoid exposure and do not stare into open apertures.* Following is an example of the warning label that appears on the product:



Safety Recommendations

Follow these guidelines to ensure general safety:

- Keep tools away from walk areas where you or others could fall over them.
- Do not wear loose clothing that may get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses when working under conditions that may be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.

Safety with Electricity

Warning Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground. This can cause serious burns or even result in welding to the terminals.

Follow these guidelines when working on equipment powered by electricity:

- Locate the room's emergency power-off switch. Then, if an electrical accident occurs, you can quickly shut the power OFF.
- Before working on the system, turn OFF the power and unplug the power cord.
- Disconnect all power before doing the following:
  - Installing or removing a router chassis
  - Working near power supplies
  - Performing a hardware upgrade
- Do not work alone if potentially hazardous conditions exist.

- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, and missing safety grounds.
- Never assume that power is disconnected from a circuit. Always check.
- If an electrical accident occurs, proceed as follows:
  - Use caution, and do not become a victim yourself.
  - Turn OFF power to the system.
  - If possible, send another person to get medical aid. Otherwise, determine the condition of the victim and then call for help.
  - Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.

Tools and Equipment Required

No additional tools or equipment are required to replace FC-to-SC connector adapters.

Replacing FC-to-SC Adapters

Older versions of the single-mode network processor module use simplex FC-type connectors (see Figure 1) for the transmit and receive ports. Newer versions of the single-mode network processor module use simplex SC-type connectors. (See Figure 2.) The connector accepts standard 8.7 to 10/125-micron single-mode fiber-optic cable. The single-mode interface supports connections at distances up to 6 miles (10 kilometers).

Figure 1 Older, FC-type Single-Mode FDDI Network Interface Connector

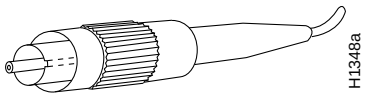
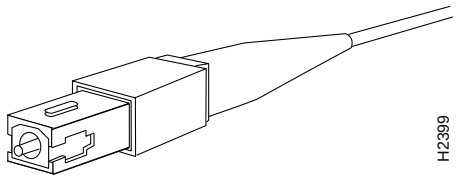


Figure 2 Newer, SC-type Single-Mode FDDI Network Interface Connector



The FC-to-SC adapter allows the newer, SC-type connector single-mode FDDI module to be used with cables installed for the earlier, FC-type connector version of the FDDI module. (See Figure 3 and Figure 4.)

Figure 3 Single-Mode FDDI Network Interface FC-to-SC Adapter, FC End

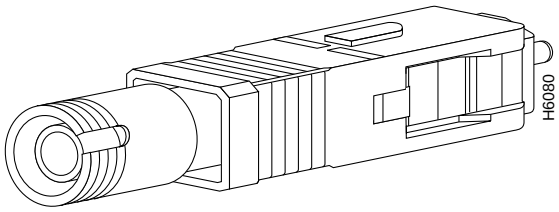
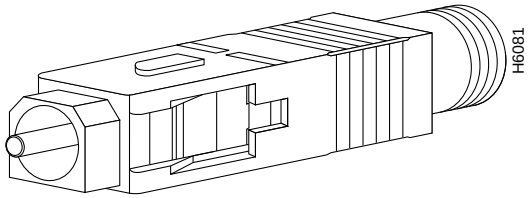


Figure 4 Single-Mode FDDI Network Interface FC-to-SC Adapter, SC End



Warning Invisible laser radiation may be emitted from the aperture ports of the single-mode FDDI products when no fiber cable is connected. *Avoid exposure and do not stare into open apertures*. This product meets the Class 1 Laser Emission Requirement from the Center for Devices and Radiological Health (CDRH) FDDI.

Note The single-mode transmitter uses a small laser to transmit the light signal to the ring. Keep the transmit port covered whenever a cable is not connected to it.

Making Single-Mode FDDI Network Connections Using the FC-to-SC Adapter

Take the following steps to connect a single-mode FDDI module using the FC-to-SC FDDI adapter:

Caution Failure to observe these guidelines will prevent the FDDI interface from initializing correctly.

Step 1 Insert the FC-to-SC adapters in the SC ports of the module.

Step 2 Connect the cable from the primary ring (from PHY-B at the primary ring upstream station) to the FC-to-SC adapter in the module's PHY-A Receive port, labeled RCVR on the module. (See Figure 5 and Figure 6.)

Figure 5 Dual Attachment Single-Mode FDDI Network Processor Module with FC-type Connectors—End View

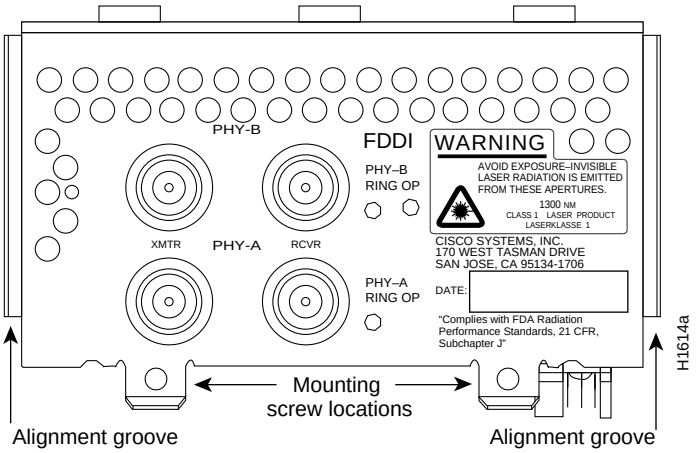
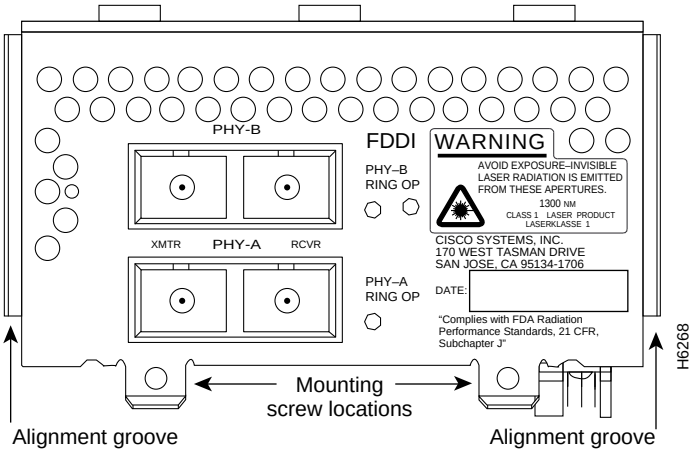


Figure 6 Dual Attachment Single-Mode FDDI Network Processor Module with SC-type Connectors—End View



Step 3 Connect the cable to the primary ring (to PHY- A at the primary ring downstream station) to the FC-to-SC adapter in the module's PHY- B transmit port, labeled XMTR.

Step 4 Connect the incoming cable from the secondary ring to the FC-to-SC adapter in the module's PHY- B receive port.

Step 5 Connect the outgoing cable to the secondary ring to the FC-to-SC adapter in the module's PHY- A transmit port, labeled XMTR.

This completes the FC-to-SC adapter single-mode FDDI network connections procedure. If you assistance, refer to the section "Cisco Connection Online."

Cisco Connection Online

Cisco Connection Online (CCO), formerly Cisco Information Online (CIO), is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional content and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously—a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, Internet e-mail, and fax download options, and is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: `http://www.cisco.com`.
- Telnet: `cco.cisco.com`.
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and baud rates up to 14.4 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact `cco-help@cisco.com`. For additional information, contact `cco-team@cisco.com`.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or `tac@cisco.com`. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or `cs-rep@cisco.com`.

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