



## CHAPTER 2

# Preparing for Installation

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**Warning**

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**Read the installation instructions before connecting the system to the power source.** Statement 1004

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**Warning**

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**Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

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**Warning**

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**Ultimate disposal of this product should be handled according to all national laws and regulations.** Statement 1040

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**Warning**

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**Class 1 laser product.** Statement 1008

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This chapter describes how to prepare your Catalyst 4500 series switch for the installation of the supervisor engines and switching modules. The information is presented in these major sections:

- [Connecting a Terminal to the Management Port, page 2-2](#)
- [Connecting a Terminal to the Console Port, page 2-2](#)
- [Connecting Ethernet Ports with MT-RJ Connectors, page 2-3](#)
- [Installing, Removing, and Maintaining Optical Modules, page 2-8](#)

This chapter does not tell you how to install your Catalyst 4500 series switch. For that information, see [Chapter 3, “Installing the Modules.”](#)

## Connecting a Terminal to the Management Port

The Ethernet management port, located on the front panel of the Catalyst 4500 series supervisor engine, is shown in the previous chapter in [Figure 1-1](#) through [Figure 1-8](#). The Ethernet management port uses an RJ-45 media-dependent interface crossed-over (MDIX) connector (see [Figure 2-1](#)).

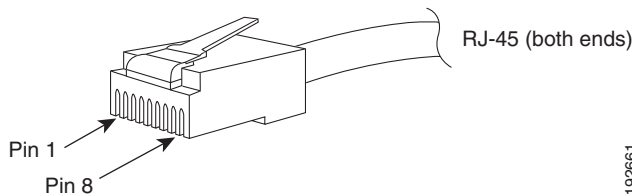


### Note

The MDIX ports are crossed over internally. For media-dependent interface (MDI)-to-MDI or MDIX-to-MDIX connection, use a crossover cable. For an MDI-to-MDIX connection, use a straight-through cable, which allows the Tx pins to connect with the Rx pins.

See the tables in [Appendix A, “Port Pinouts, Environmental Specifications, and Power Consumption Information,”](#) for port pinouts.

**Figure 2-1** 100BASE-TX RJ-45 Connector Type



## Connecting a Terminal to the Console Port

The console port, located on the front panel of the Catalyst 4500 series supervisor engine, is shown in the previous chapter in [Figure 1-1](#) through [1-8](#). See the tables in [Appendix A, “Port Pinouts, Environmental Specifications, and Power Consumption Information,”](#) for port pinouts. All other supervisor engine console ports use an RJ-45 connector.

# Connecting Ethernet Ports with MT-RJ Connectors

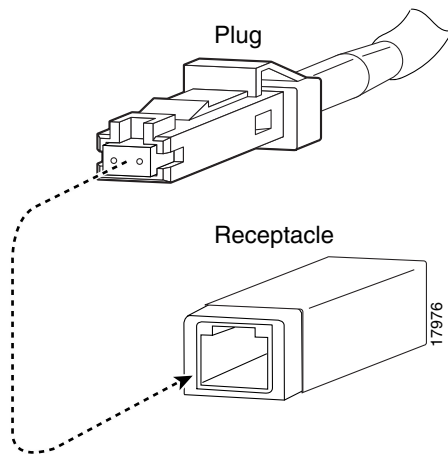
Use the guidelines shown in [Table 2-1](#) for switching modules that have MT-RJ connectors (see [Figure 2-2](#)).

**Table 2-1** MT-RJ Connector Guidelines

Specification	Measurement
Optical transmit power	-19 to -14 dbm <sup>1</sup> average for 62.5/125 um fiber; -23.5 to -14 dbm average for 50/125 um fiber
Receiver sensitivity	-33.5 dbm average at window edge; 34.5 dbm average at window center

1. dbm = decibels per milliwatt

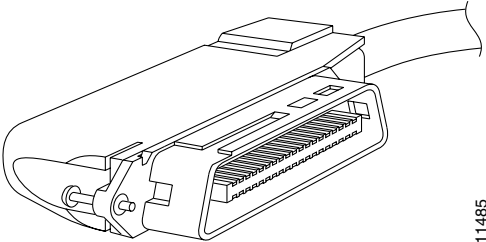
**Figure 2-2** MT-RJ Connector



## Attaching Module Interface Cables

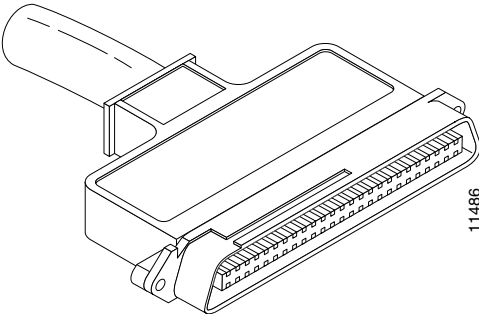
[Figure 2-3](#) through [Figure 2-9](#) show the connector types used to attach interface cables to the supervisor engine and switching modules.

Figure 2-3 RJ-21 Telco Interface 90-Degree Cable Connector



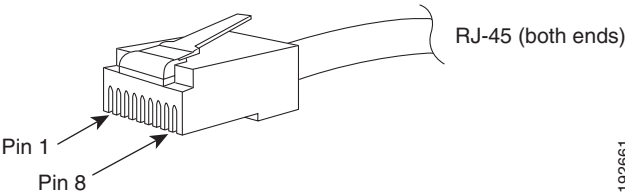
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Figure 2-4 RJ-21 Telco Interface 180-Degree Cable Connector

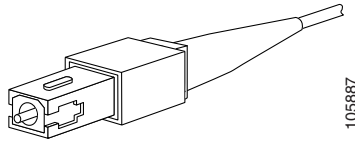
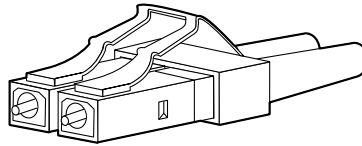
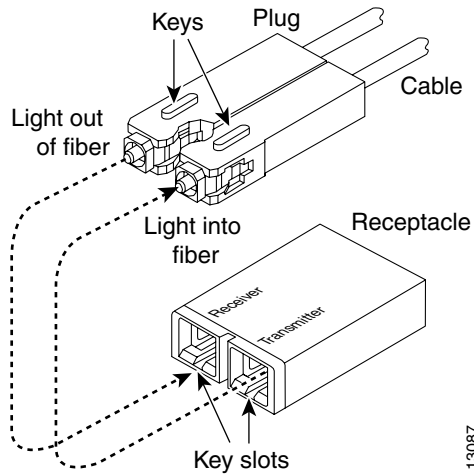


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Figure 2-5 RJ-45 Connector



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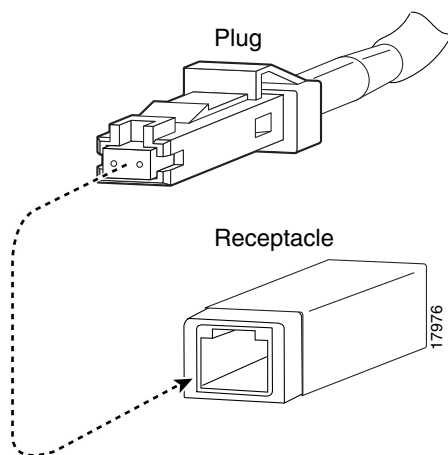
**Figure 2-6** *Single LC Connector***Figure 2-7** *Double LC Connector***Figure 2-8** *SC-Type Fiber-Optic Connector***Note**

Always keep caps and plugs on the fiber-optic connectors on the cable and the switch when they are not in use.

**Warning**

**Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**  
Statement 1051

**Figure 2-9 MT-RJ Fiber-Optic Connector**



When you are connecting MT-RJ cables to a module, make sure that you firmly press the network cable plug into the socket. The upper edge of the plug must snap into the upper front edge of the socket. You might hear an audible click. Gently pull on the plug to determine whether or not the plug is locked into the socket.

To disconnect the plug from the socket, press down on the raised portion on top of the plug, releasing the latch. You should hear an audible click, which would indicate that the latch has released. Carefully pull the plug out of the socket.

**Note**

When you disconnect the fiber-optic cable from the module, grip the body of the connector. Do not grip the connector jacket sleeve. Gripping the sleeve can, over time, compromise the integrity of the fiber-optic cable termination in the MT-RJ connector.

Always make sure that you insert the connector completely into the socket. This is especially important when you are making a connection between a module and a long-distance (2 km) or possibly a highly attenuated network. If the link LED does not light, try removing the network cable plug and reinserting it firmly into the module socket.

Dirt or skin oils also may have accumulated on the plug faceplate (around the optical-fiber openings), which can generate significant attenuation and reduce the optical power levels below threshold levels so that a link cannot be made.

To clean the MT-RJ plug faceplate, follow this procedure:

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- Step 1** Using a lint-free tissue soaked in 99 percent pure isopropyl alcohol, gently wipe the faceplate.
- Step 2** Remove any residual dust from the faceplate with compressed air before installing the cable.

**Warning**

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**Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**  
Statement 1051

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**Note** Make sure that dust caps are installed on all unused module connectors and unused network fiber-optic cable connectors.

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# Installing, Removing, and Maintaining Optical Modules

The Catalyst 4500 series switch supervisor engines and switching modules support various types of transceiver module depending on the module or supervisor type. Transceiver types supported include X2, GBIC, SFP, TwinGig, and OneX. Refer to the following installation notes as needed.

- [\*Gigabit Interface Converter Installation Note\*](#)
- [\*Cisco SFP and SFP+ Transceiver Module Installation Notes\*](#)
- [\*Installation Notes for the Cisco TwinGig Converter Module\*](#)
- [\*10-Gigabit Ethernet X2 Transceiver Installation Note\*](#)
- [\*Cisco Mode-conditioning Patch Cord Installation Note\*](#)
- [\*Inspection and Cleaning Procedures for Fiber-Optic Connections\*](#)

Compatibility information for optical modules is covered in the software release notes. It is also provided in the following compatibility documents:

- [\*10-Gigabit Ethernet Transceiver Modules Compatibility Matrix\*](#)
- [\*Cisco 100-Megabit Ethernet SFP Modules Compatibility Matrix\*](#)
- [\*Cisco Gigabit Ethernet Transceiver Modules Compatibility Matrix\*](#)
- [\*Cisco Digital Optical Monitoring Compatibility Matrix\*](#)
- [\*Cisco Wavelength Division Multiplexing Transceivers Compatibility Matrix\*](#)