CISCO SYSTEMS

®

Text Part Number: 78-6516-01 Rev. A0

Catalyst 5000 Series Supervisor Engine II G Installation and Configuration Note

Product Numbers:
WS-X5540(=) Supervisor Engine II G without Uplink Module
WS-U5534-GESX(=) Dual Port 1000BaseSX-MMF Uplink Module
WS-U5536-GELX(=) Dual Port 1000BaseLX/LH-MMF/SMF Uplink Module
WS-U5537-FETX(=) Four Port 10/100BaseTX Uplink Module
WS-U5538-FEFX-MMF(=) Four Port 100BaseFX-MMF Uplink Module

This installation and configuration note contains procedures for installing and verifying the operation of the Catalyst 5000 series Supervisor Engine II G.

Contents

This document contains the following sections:

1

Supervisor Engine II G Overview

Supervisor Engine II G includes the following features:

- Bridge address table for up to 16,000 active Media Access Control (MAC) addresses and associated virtual LANs (VLANs) allocated dynamically between active ports

- Switching engine that provides data path and control for all network interfaces including modular Fast Ethernet or Gigabit Ethernet interfaces that can support redundancy using the spanning-tree algorithm or load sharing when used with VLANs

- Management functions that include monitoring the interface and environmental status and providing Simple Network Management Protocol (SNMP) management and the console/Telnet interface

- 37.5-MHz MCF5102 Network Management Processor (NMP)

- Switch fabric interface with a capability of over one million packets per second (pps)

- Hardware support for up to 1024 VLANs

- Onboard NetFlow Feature Card II (NFFC II) chipset for core switching logic

- Modular uplink ports

Supervisor Engine II G Physical Components

Supervisor Engine II G has the NFFC II chipset and modular uplink ports that can be configured with any of the supported uplink modules. Supervisor Engine II G is shown in Figure 1. See the "Supervisor Engine Uplink Modules" section on page 2 for descriptions of the supported uplink modules.

Figure 1   Supervisor Engine II G

Uplink module with four-port
100BaseFX MTRJ connections
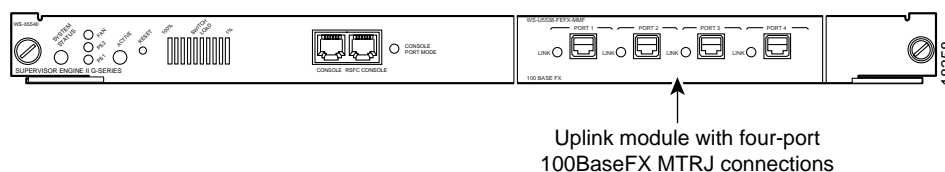
Supervisor Engine Uplink Modules

Table 1 shows the supported uplink modules including product numbers and descriptions.

Table 1   Uplink Modules for the Supervisor Engine III

Product Number	Description
WS-U5534-GESX	Dual-port 1000BaseSX
WS-U5536-GELX	Dual-port 1000BaseLX/LH
WS-U5537-FETX	Four-port 10/100BaseTX
WS-U5538-FEFX-MMF	Four-port 100BaseFX

The uplink module faceplates are displayed in Figure 2 through Figure 5.

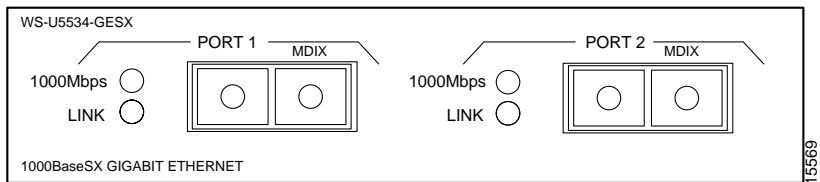**Figure 2**   **Dual-port 1000BaseSX Uplink Module Faceplate**

Figure 3   **Dual-port 1000BaseLX/LH Uplink Module Faceplate**
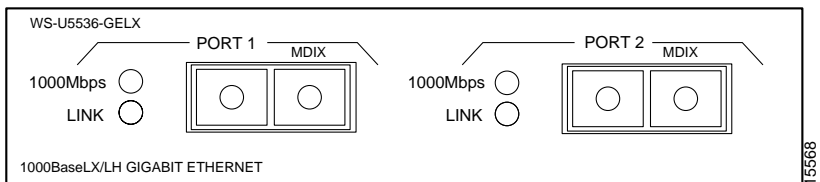
Figure 4   **Four-port 10/100BaseTX Uplink Module Faceplate**

Figure 5   **Four-port 100BaseFX Uplink Module Faceplate**

Supervisor Engine II G Front Panel Components

This section describes the front panel features of the Supervisor Engine II G. (See Figure 6.)

Note   The Supervisor Engine II G is shown here with the four-port 100BaseFX uplink module. All the supported uplink modules are described in the "Supervisor Engine Uplink Modules" section on page 2.

Figure 6   **Supervisor Engine II G Front Panel**

LEDs

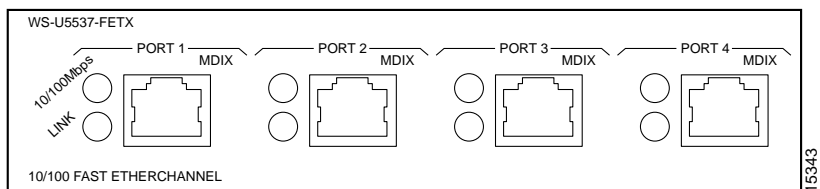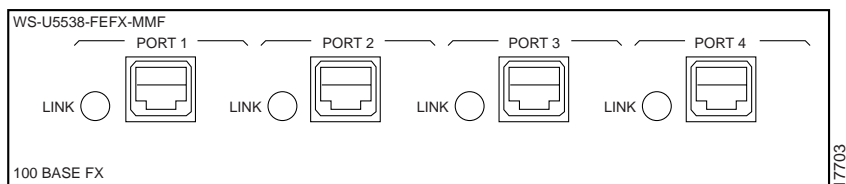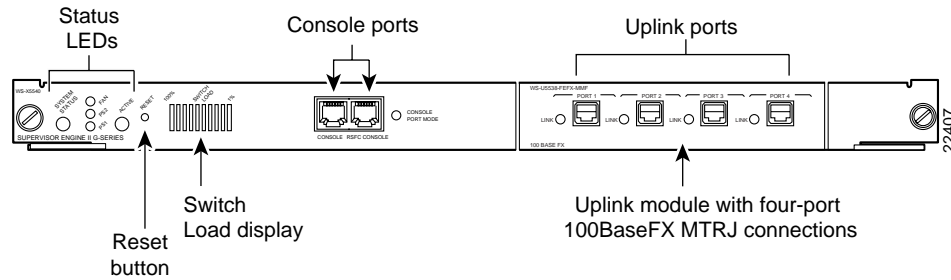The LEDs on the supervisor engine front panel indicate the status of the system, which includes the states of the supervisor engine, the power supplies, and the fan assembly. Table 1 describes the LEDs.

Table 2   **LED Descriptions**

LED	State	Description
SYSTEM STATUS		Indicates the status of switch based on a series of self-tests and diagnostic tests.
	Green	All the tests pass.
	Red	Any test fails.
	Red	During system boot or if the module is disabled.
	Orange	The redundant power supply is installed but not turned on or receiving input.
	Orange	The fan module fails.
FAN		Indicates the status of whether or not the fan is operational.
	Green	The fan is operational.
	Red	The fan is not operational.
PS1		Indicates the status of the power supply in the left bay.
	Catalyst 5000, Catalyst 5505, Catalyst 5509, and Catalyst 5500 switches:	
	Green	The power supply in the left bay is operational.
	Red	The power supply in the left bay is not operational, switched off, or not receiving input power.
	Off	The power supply in the left bay is off or not installed.
		Note The Catalyst 5500 power supply LED is red when no modules are installed.
	Catalyst 5002 switch:	
	Green	The power supply associated with the PS1 AC receptacle or DC terminal block is operational.
	Red	The power supply associated with the PS1 AC receptacle or DC terminal block is not receiving input power.

Table 2   LED Descriptions (continued)

LED	State	Description
PS2		Indicates the status of the power supply in the right bay.
	Catalyst 5000, Catalyst 5505, Catalyst 5509, and Catalyst 5500 switches:	
	Green	The power supply in the right bay is operational.
	Red	The power supply in the right bay is not operational, switched off, or not receiving input power.
	Off	The power supply in the right bay is off or not installed.
		Note The Catalyst 5500 power supply LED is red when no modules are installed.
	Catalyst 5002 switch:	
	Green	The power supply associated with the PS2 AC receptacle or DC terminal block is operational.
	Red	The power supply associated with the PS2 AC receptacle or DC terminal block is not receiving input power.
SWITCH LOAD	1-100%	If the switch is operational, the switch load display indicates (as an approximate percentage) the current traffic load over the backplane (see Figure 7).
ACTIVE	Green	The supervisor engine is operational and active.
	Orange	The supervisor engine module is in standby mode.
100 Mbps	Green	The port is operating at 100 Mbps.
1000 Mbps	Green	The port is operating at 1000 Mbps.
LINK	Green	The port is operational.
	Orange	The link has been disabled by software.
	Flashing Orange	The link is bad and has been disabled due to a hardware failure.
	Off	No signal is detected.

Reset Button

The Reset button allows you to restart the switch.

Note Use a paper clip or other small, pointed object to access the Reset button.

Switch Load

The Switch Load display provides you with a visual approximation of the current traffic load across the backplane. The Supervisor Engine II G Switch Load display indicates the current aggregate traffic load across all buses. Figure 7 shows the appearance of the Switch Load display.

Figure 7   Switch Load Display
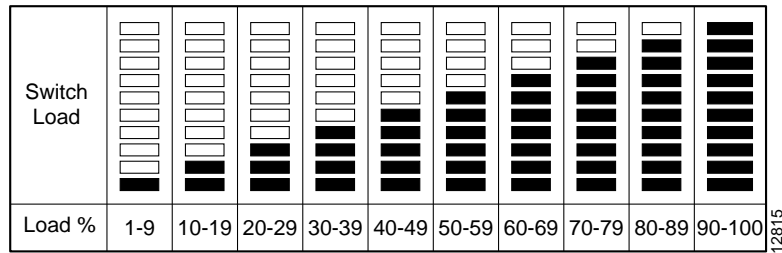
Console and RSFC Console Ports
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The console port allows you to perform the following functions:

- The console port enables you to configure the switch from the CLI

- Monitor network statistics and errors

- Configure SNMP agent parameters

- Download software updates to the switch or distribute software images residing in Flash memory to attached devices

The RSFC console port enables you to configure the switch for multiprotocol routing using Cisco IOS software.

The console port and RSFC console port are EIA/TIA-232 asynchronous, serial, full-featured data terminal equipment (DTE) connections with hardware flow control and RJ-45 connectors. A console port accessory kit with the necessary cabling and adapters is provided for making your terminal connection.

Console Port Mode Switch
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The console port mode switch allows you to connect a terminal to the supervisor engine using the desired console cable.

Note   The cable and adapters shipped with the switch are the same ones used on the Cisco 2500 series routers (and other Cisco products).

You also can connect a modem to the console port using the cable and adapter provided with the switch.

Use the console port mode switch as follows:

- Mode 1—Switch in the *in* position. Use this mode to connect a terminal to the console port using the console cable and data terminal equipment (DTE) adapter (labeled "Terminal") that shipped with the supervisor engine.

  You can also use this mode to connect a modem to the console port using the console cable and data communications equipment (DCE) adapter (labeled "Modem") that shipped with the switch.

- Mode 2—Switch in the *out* position. Use this mode to connect a terminal to the console port using the Supervisor Engine III console cable (not provided).

For more information on using the console port, refer to the *Catalyst 5000 Series Supervisor Engine Installation Guide*.

Memory

Onboard memory consists of dynamic random-access memory (DRAM) for the default system software, Flash memory for downloading and storage of the system software, and nonvolatile RAM (NVRAM) for the configuration file. Refer to the release notes for your Catalyst 5000 series supervisor engine software release for the minimum requirements.

Flash Memory

Flash memory allows you to load and store system software images. Supervisor Engine II G has 8 MB of Flash memory. You can download a new software image over the network or from a local Trivial File Transfer Protocol (TFTP) server.

EEPROM

An electronically erasable programmable ROM (EEPROM) component on the supervisor engine stores module-specific information, such as the module serial number, part number, controller type, hardware revision, configuration information, and other details unique to each module. The supervisor engine EEPROM also contains an address allocator, which is a bank of 1024 hardware or media access control (MAC)-level addresses, one for each possible VLAN in the system.

NVRAM

The configuration file is stored in nonvolatile random-access memory (NVRAM).

Safety Recommendations

Safety warnings appear throughout this note in procedures that, if performed incorrectly, may harm you. A warning symbol precedes each warning statement.

Warning   This warning symbol means *danger*. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the appendix "Translated Safety Warnings" in the *Catalyst 5000 Series Supervisor Engine Installation Guide*.

Ensuring Safety

This section covers the following topics:

- Following Basic Electrical Safety Guidelines, page 8
- Preventing ESD Damage, page 8

Use the following guidelines to ensure your safety and protect the equipment. This list does not include all potentially hazardous situations during installation, so *be alert*.

Note   Power supplies in the Catalyst 5002 switch do not have on/off switches.

Warning   Only trained and qualified personnel should install, replace, or service this equipment.

- Always turn all power supplies off (the position marked zero), and unplug all power cords before installing or removing a chassis.

- Keep the chassis area clear and free of dust during and after installation.

- Keep tools and chassis components off the floor and away from foot traffic.

- Avoid wearing jewelry and securely fasten any loose clothing that could get caught in the chassis.

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 and can cause serious burns or weld the metal object to the terminals.

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

Following Basic Electrical Safety Guidelines

When working with electrical equipment, exercise these basic safety guidelines:

- Never install equipment that appears to be damaged.

- Locate the emergency power-off switch for the room in which you are working before beginning any procedures that require access to the chassis interior.

- Disconnect all power and external cables before installing or removing a chassis.

- Do not work alone when potentially hazardous conditions exist.

- Never assume that power has been disconnected from a circuit; always check.

- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.

- Examine your work area carefully for possible hazards such as moist floors, ungrounded power extension cables, and missing safety grounds.

Warning   Do not work on the system or connect or disconnect cables during periods of lightning activity.

Preventing ESD Damage

ESD damage occurs when electronic modules or components are improperly handled and can result in complete or intermittent failures. To prevent ESD damage, follow these guidelines:

- Always use an ESD-preventive wrist or ankle strap and ensure that it makes good skin contact.

- When handling modules or coming into contact with any internal components, always use a wrist strap connected to one of the following:

  — Captive installation screws on an installed module or power supply

  — ESD wrist strap connector

  — Any unpainted surface on the chassis

- Handle modules by the edges only.

- Avoid contact between the modules and clothing. The wrist strap protects only the module from ESD voltages on the body; ESD voltages on clothing can still cause damage.

- After removing a supervisor engine, place it on an antistatic surface or in a static-shielding bag. If you plan to return the module to the factory, immediately place it in a static-shielding bag.

> ⚠ **Caution**   Periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megohms (Mohms).
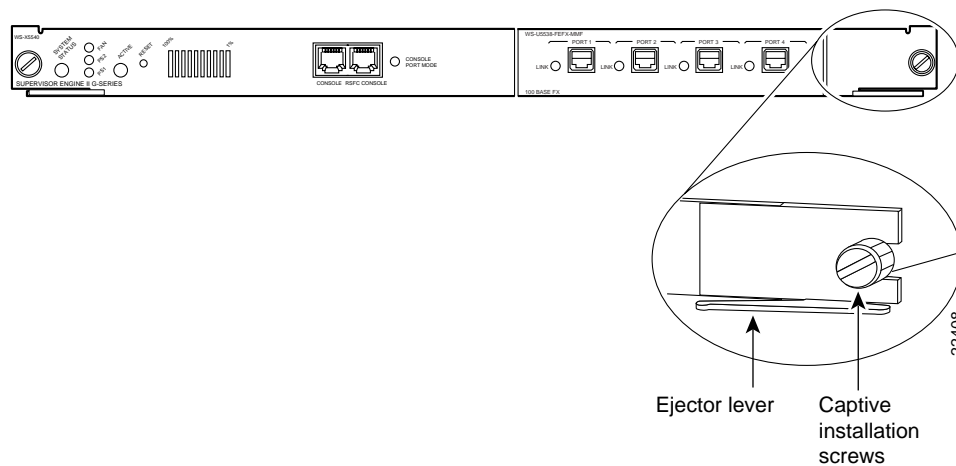
Removing and Replacing the Supervisor Engine

> **Note**   To support supervisor engine redundant operation, both the supervisor engines must be Supervisor Engine II Gs.

> **Note   Catalyst 5505, Catalyst 5509, and Catalyst 5500 switches**—When two supervisor engines are installed, hot swapping allows you to remove and replace one of the supervisor engines without turning off the system power.

Avoiding Problems When Inserting and Removing Modules

The ejector levers on the supervisor engine align and seat the supervisor engine connectors in the backplane. See Figure 8. If you fail to use the ejector levers to insert the supervisor engine, you can disrupt the order in which the pins make contact with the backplane. When removing a supervisor engine, use the ejector levers to ensure that the supervisor engine connector pins disconnect from the backplane properly. Any supervisor engine that is only partially connected to the backplane can disrupt the system.

Figure 8   Ejector Levers and Captive Installation Screws

Ejector lever   Captive installation screws

Removing the Supervisor Engine

Before you remove the supervisor engine from the switch, you should first upload the current configuration to a server. This saves time when bringing the supervisor engine back online. Enter the **write network** command to upload the configuration file to the network. Enter the **copy** command to download the current configuration to a Flash memory device on the new supervisor engine.

To remove the supervisor engine from the switch, follow these steps:

Caution To prevent ESD damage, handle switching modules by the carrier edges only.

Caution When removing or inserting a switching module, always wear an ESD wrist strap connected to the Catalyst 5000 series switch ESD wrist strap connector.

Step 1 Take the necessary precautions to prevent ESD damage, as described in the "Preventing ESD Damage" section on page 8.

Step 2 If you do not plan to immediately reinstall the supervisor engine you are removing, disconnect any network interface cables attached to the uplink ports.

Step 3 Use a screwdriver to loosen the captive installation screws at the left and right sides of the supervisor engine.

Step 4 Grasp the left and right ejector levers. Simultaneously pull the left lever to the left and the right lever to the right to release the supervisor engine from the backplane connector.

Step 5 Grasp the supervisor engine with one hand and place your other hand under the carrier to support and guide the supervisor engine out of the slot. Avoid touching any of the components on the supervisor engine.

Step 6 Carefully pull the supervisor engine straight out of the slot, keeping your other hand under the carrier to guide it. Keep the supervisor engine horizontal to the backplane.

Step 7 Place the removed supervisor engine on an antistatic mat, foam, or bag.

Caution Always install a switching module filler plate in empty switching module slots to maintain the proper flow of cooling air across the modules.

Note When you remove and replace the supervisor engine, the system provides status messages on the console screen. The messages are for information only. Enter the **show system** and **show module** commands to view specific information. For additional information, refer to the *Software Configuration Guide* and *Command Reference* for your switch.

Installing the Supervisor Engine

When installing the supervisor engine, note that it must go in a specific slot:

- Catalyst 5000—slot 1

- Catalyst 5505, 5509, and Catalyst 5500—slot 1 (if a second, redundant supervisor is installed, it goes in slot 2)

- Catalyst 5002—slot 1

To install the supervisor engine, follow these steps:

Caution To prevent ESD damage, handle switching modules by the carrier edges only.

Caution When removing or inserting a switching module, always wear an ESD wrist strap connected to the Catalyst 5000 series switch ESD wrist strap connector.

Step 1 Take the necessary precautions to prevent ESD damage, as described in the "Preventing ESD Damage" section on page 8.

Step 2 To install the supervisor engine, hold the front panel with one hand, and place your other hand under the carrier to support the supervisor engine. Do not touch the printed circuit boards or connector pins.

Step 3 Align the edges of the supervisor engine carrier with the slot guides on the sides of the switch chassis.

Step 4 Pivot the two module ejector levers out away from the faceplate. The ejector levers are shown pivoted out in Figure 9.

Figure 9 **Module Ejector Lever Operation**

Captive installation screw
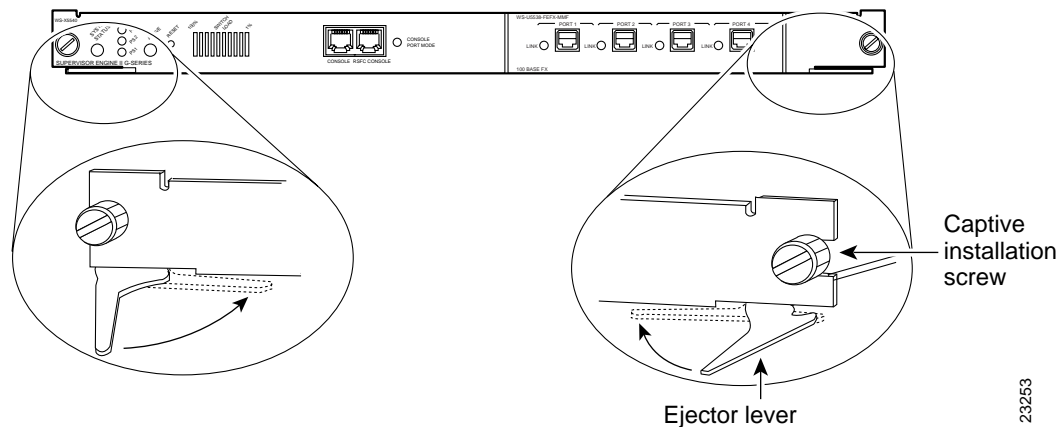
Ejector lever

Step 5 Keeping one hand under the carrier to guide the supervisor engine, carefully slide it into the slot on the Catalyst 5000 series switch until the ejector levers click into place on the chassis. Be sure to keep the module horizontal to the backplane and avoid touching any of the components on the module.

Step 6 Using the thumb and forefinger of each hand, simultaneously pivot in both ejector levers, as shown in Figure 9, to fully seat the switching module in the backplane connector.

Caution Always use the ejector levers when installing or removing switching modules. A module that is partially seated in the backplane will cause the system to halt and subsequently crash.

Step 7 Use a screwdriver to tighten the captive installation screws at the left and right sides of the module.

Removing and Replacing Supervisor Engine Uplink Modules

This section describes how to remove and replace supervisor engine uplink modules. If you have a supervisor engine with an uplink module already installed and you are replacing the uplink module, see the "Replacing an Uplink Module" section on page 12. If you are installing an uplink module into a supervisor engine with no uplink module, see the "Adding an Uplink Module" section on page 13.

Replacing an Uplink Module

Use this procedure to remove and replace an uplink module:

Step 1   If not already removed, remove the supervisor engine from the Catalyst 5000 series switch. See the "Removing the Supervisor Engine" section on page 10.

Step 2   Use a Phillips-head screwdriver to remove the four screws securing the uplink module to the supervisor engine. (See Figure 10.)

**Step 3**   Carefully pull the uplink module up and out of the supervisor engine.

Note   The rear of the uplink module connects to the supervisor engine through connectors on the bottom side of the uplink module. Use care when unseating the uplink module from these connectors.

Step 4   Place the removed uplink module in an antistatic bag.

Step 5   Remove the new uplink module from its antistatic bag and install it in the supervisor engine. Use care when seating the rear of the uplink module into the connectors.

Step 6   Ensure that the uplink module is securely seated in the supervisor engine.

Caution   Ensure that the module is securely seated *before* installing and tightening the securing screws. Using the screws to seat the module could warp the module.

Step 7   Use a Phillips-head screwdriver to install the four screws that secure the uplink module to the supervisor engine.

Step 8   Install the supervisor engine into the Catalyst 5000 series switch. See the "Installing the Supervisor Engine" section on page 10.

Figure 10   Removing and Replacing a Supervisor Engine Uplink Module
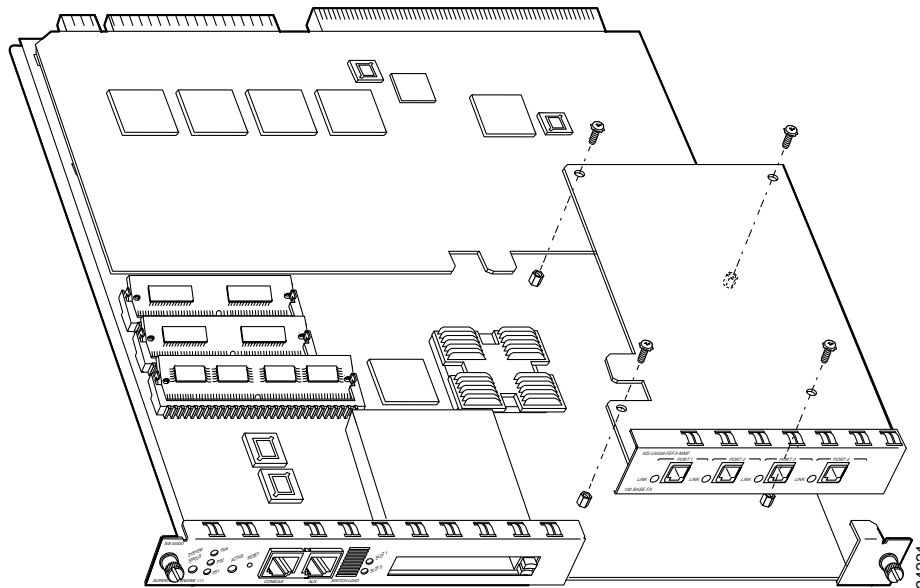
Adding an Uplink Module

Use this procedure to add an uplink module to a supervisor engine with no uplink module:

Step 1   If not already removed, remove the supervisor engine from the Catalyst 5000 series switch. See the "Removing the Supervisor Engine" section on page 10.

Step 2   Use a Phillips-head screwdriver to remove the two screws securing the blank uplink module filler plate from the supervisor engine. Set the screws in a secure place because they will be reused.

Step 3   Use a Phillips-head screwdriver to remove the two screws from the two standoffs that will secure the rear of the uplink module. Set the screws in a secure place because they will be reused.

Step 4   Remove the new uplink module from its antistatic bag and install it in the supervisor engine. Use care when seating the rear of the uplink module into the connectors.

Step 5   Ensure that the uplink module is securely seated in the supervisor engine.

Step 6   Use a Phillips-head screwdriver to install the four screws that secure the uplink module to the supervisor engine. (See Figure 10.)

⚠ **Caution**   Ensure that the module is securely seated *before* installing and tightening the securing screws. Using the screws to seat the module could warp the module.

Step 7   Install the supervisor engine into the Catalyst 5000 series switch. See the "Installing the Supervisor Engine" section on page 10.

Connecting a Terminal to the Console Port

Connect the terminal using a thin, flat, RJ-45-to-RJ-45 cable (looks like a telephone cable) and an RJ-45-to-DB-9, RJ-45-to-D-subminiature female, or RJ-45-to-D-subminiature male adapter.

> **Note** An RJ-45-to-RJ-45 cable and adapters are provided in the console port accessory kit shipped with your Supervisor Engine II G.

See the "Configuring a Terminal for Attachment to the Console Port" section on page 14 for port configuration details. Table 3 lists the pinouts for the console port.

Table 3   Console Port Pinouts

Console Port	Console Device
Pin (signal)	**Connect to**
1 is looped to pin 8	
2 (DTR)	DSR
3 (RxD)	TxD
4 (GND)	GND
5 (GND)	GND
6 (TxD)	RxD
7 (DSR)	DTR
8 is looped to pin 1	

Table 4 lists the pinouts for the RSFC console port.

Table 4   RSFC Console Port Pinouts

Console Port	Console Device
Pin (signal)	**Connect to**
9 is looped to pin 16	
10	DTR (out)
11	TxD or RxD
12	(GND)
13	(GND)
14	RxD or TxD
15	RTS (in)
16 is looped to pin 9	

Configuring a Terminal for Attachment to the Console Port

> **Note** The console port is an asynchronous serial port; any device connected to this port must be capable of asynchronous transmission.

Before connecting the console port, check the terminal documentation to determine the baud rate. The baud rate of the terminal must match the default baud rate (9600 baud) of the console port. Set up the terminal as follows:

- 9600 baud
- 8 data bits
- No parity
- 1 stop bit

Connecting to the Interface Ports

The Supervisor Engine II G has the following interface ports:

- 10/100BaseTX (RJ-45 MDIX connectors)
- 100BaseFX (multimode fiber-optic connectors)
- 1000BaseSX MMF connectors (use the SC connector shown in Figure 12)
- 1000BaseLX/LH MMF and SMF connectors (use the SC connector shown in Figure 12)

The 10/100BaseTX and 100BaseFX ports operate in full- or half-duplex mode. The 1000BaseSX MMF and 1000Base LX/LH MMF and SMF ports operate in full-duplex mode only.

For information on interface cables and equipment, such as Ethernet transceivers, refer to the *Catalyst 5000 Series Supervisor Engine Installation Guide*.

10/100BaseTX (RJ-45 MDIX Connectors)

The 10/100BaseTX RJ-45 port cable connector is shown in Figure 11.

Figure 11   10/100BaseTX RJ-45 Connector Type
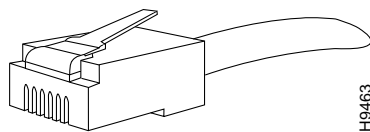
100BaseFX, 1000BaseSX, and 1000BaseLX/LH (Single-Mode or Multimode Fiber-Optic Connectors)

Use SC fiber-optic connectors (see Figure 12) to connect to the 1000BaseSX and 1000BaseLX/LH ports. Use MT-RJ fiber-optic connectors (see Figure 13) to connect to the 100BaseFX (four-port) ports. Always keep caps and plugs on the fiber-optic connectors on the cable and the switch when they are not in use.

Warning   Because invisible laser radiation may be emitted from the aperture of the port when no cable is connected, avoid exposure to laser radiation and do not stare into open apertures.
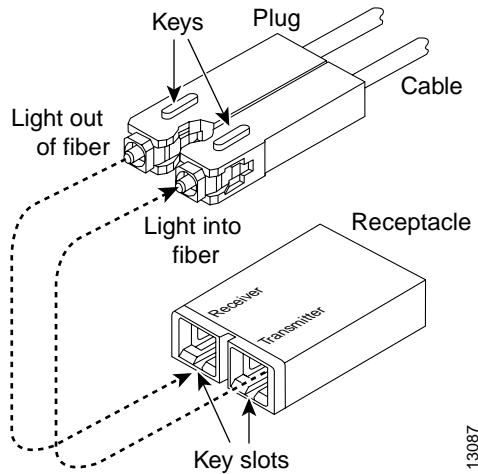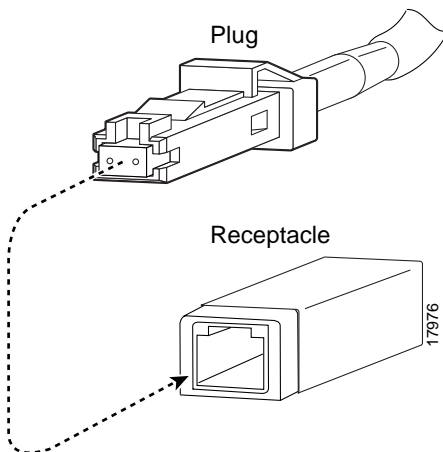
Figure 12   **SC Fiber-Optic Connector Type**

Figure 13   **MT-RJ Fiber-Optic Connector**

Verifying System Operation

When all interfaces are connected, check all connections, and then perform the following steps to verify that the switch is operational:

Step 1   Check the console terminal and make sure it is on.

Step 2   Verify that the appropriate PS1 and PS2 LEDs on the supervisor engine front panel are green.

Step 3   While the system initializes, check that the SYSTEM STATUS LED on the supervisor engine is orange until the boot is complete.

Step 4   Some interface LEDs might go on or blink for a short time. Some LEDs, such as the Link LED, stay on during the entire boot process. If an interface is already configured, the LEDs might be on steadily as they detect traffic on the line. Wait until the system boot is complete before attempting to verify the switching module LED indications.

> **Note** **Catalyst 5505, Catalyst 5509, and Catalyst 5500**—If you have a redundant supervisor engine, refer to the *Catalyst 5000 Series Installation Guide* for a detailed description of supervisor engine operation in a redundant configuration. By default, the supervisor engine in slot 1 is the active supervisor; the second supervisor in slot 2 is the standby supervisor.

> **Note** Many of the switching module LEDs are not on until you configure the interfaces.

Step 5 When the system boot is complete (it takes a few seconds), the supervisor engine begins to initialize the switching modules.

During this initialization, the LEDs on each switching module behave differently (most flash on and off). The Status LED on each switching module goes on when initialization is complete, and the console screen displays a script and system banner.

> **Note** When switching module LEDs are on, this does not necessarily mean that the interface ports are functional or enabled. Although the LEDs for many interface types go on at the initial system startup, they do not indicate an accurate status until the interface is configured. For detailed module-specific LED descriptions, refer to the *Catalyst 5000 Series Module Installation Guide*.

> **Note** **Catalyst 5500 only**—The Asynchronous Transfer Mode (ATM) system processor (ASP), ATM port adapter carrier, and ATM adapter module LEDs are described in the *LightStream 1010 ATM Switch Hardware Installation Guide*. The Catalyst 8510 Campus Switch Router (CSR) Switch Route Processor (SRP) is described in the Catalyst 8510 Campus Switch Router documentation. These publications are available on the Cisco Connection Documentation CD and in print.

> **Note** If the system does not complete this verification process, refer to Chapter 6, "Troubleshooting the Installation," in the *Catalyst 5000 Series Installation Guide* for troubleshooting procedures.

Step 6 Your hardware installation is now complete. Refer to the *Software Configuration Guide* and *Command Reference* publication for your switch for complete software configuration instructions.

FCC Class A Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

You can determine whether your equipment is causing interference by turning it off. If the interference stops, it was probably caused by the Cisco equipment or one of its peripheral devices. If the equipment causes interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.

- Move the equipment to one side or the other of the television or radio.

- Move the equipment farther away from the television or radio.

- Plug the equipment into an outlet that is on a different circuit from the television or radio. (That is, make certain the equipment and the television or radio are on circuits controlled by different circuit breakers or fuses.)

Modifications to this product not authorized by Cisco Systems could void the FCC approval and negate your authority to operate this product.

Related Documentation

For more detailed installation and configuration information, refer to the following publications:

- *Catalyst 5000 Series Installation Guide*

- *Catalyst 5000 Series Supervisor Engine Installation Guide*

- *Catalyst 5000 Series Module Installation Guide*

- *Software Configuration Guide—Catalyst 5000 Series, Catalyst 4000 Series, Catalyst 2948G Series, Catalyst 2926G Series*

- *Command Reference—Catalyst 5000 Series, Catalyst 4000 Series, Catalyst 2948G Series, Catalyst 2926G Series*

- *Catalyst 5000 Series Route Switch Feature Card Installation and Configuration Note*

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This document is to be used in conjunction with the *Catalyst 5000 Series Installation Guide* and the *Catalyst 5000 Series Supervisor Engine Installation Guide*.