APPENDIX B

Connector and Cable Specifications

This appendix describes the Catalyst 3750 switch ports and the cables and adapters that you use to connect the switch to other devices. This appendix includes these sections:

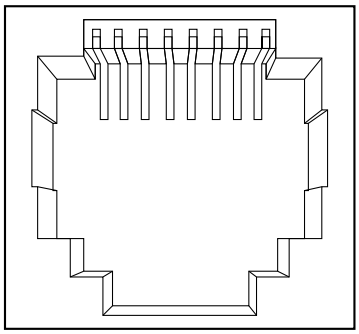
Connector Specifications

These sections describe the connectors used with the Catalyst 3750 switches:

10/100 and 10/100/1000 Ports

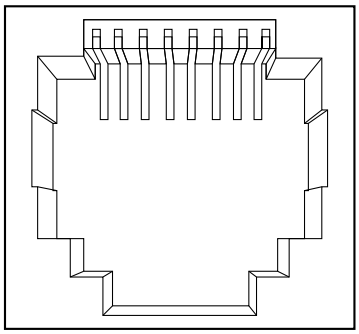
The 10/100 and 10/100/1000 Ethernet ports on Catalyst 3750 switches use standard RJ-45 connectors and Ethernet pinouts with internal crossovers. Figure B-2 and Figure B-1 show the pinouts.

Figure B-1 10/100 Port Pinouts

Pin	Label	1 2 3 4 5 6 7 8
1	RD+	
2	RD-	
3	TD+	
4	NC	
5	NC	
6	TD-	
7	NC	
8	NC	

H5318

Figure B-2 10/100/1000 Port Pinouts

Pin	Label	1 2 3 4 5 6 7 8
1	TP0+	
2	TP0-	
3	TP1+	
4	TP2+	
5	TP2-	
6	TP1-	
7	TP3+	
8	TP3-	

60915

100BASE-FX Ports

The 100BASE-FX ports use MT-RJ connectors, as shown in Figure B-3. The 100BASE-FX ports use 50/125- or 62.5/125-micron multimode fiber-optic cabling.

You can connect a 100BASE-FX port to an SC or ST port on a target device by using one of the MT-RJ fiber-optic patch cables listed in Table B-1. Use the Cisco part numbers in Table B-1 to order the patch cables that you need.

Figure B-3 MT-RJ Connector

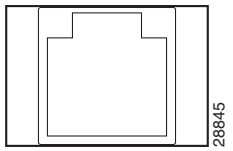


Table B-1 MT-RJ Patch Cables for 100BASE-FX Connections

Type	Cisco Part Number
1-meter, MT-RJ-to-SC multimode cable	CAB-MTRJ-SC-MM-1M
3-meter, MT-RJ-to-SC multimode cable	CAB-MTRJ-SC-MM-3M
5-meter, MT-RJ-to-SC multimode cable	CAB-MTRJ-SC-MM-5M
1-meter, MT-RJ-to-ST multimode cable	CAB-MTRJ-ST-MM-1M
3-meter, MT-RJ-to-ST multimode cable	CAB-MTRJ-ST-MM-3M
5-meter, MT-RJ-to-ST multimode cable	CAB-MTRJ-ST-MM-5M

SFP Module Ports

The Catalyst 3750 switch uses SFP modules for fiber-optic and copper uplink ports. See the Catalyst 3750 release notes for a list of supported SFP modules.

Figure B-4 Fiber-Optic SFP Module LC Connector

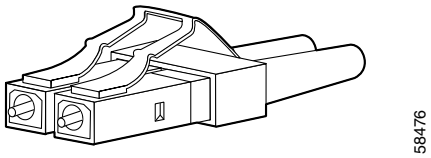
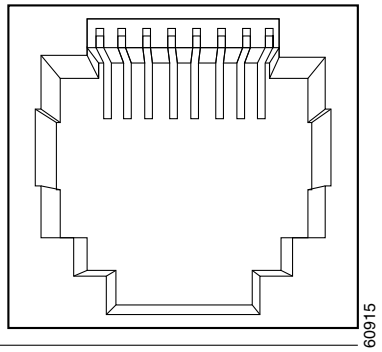


Figure B-5 Copper SFP Module RJ-45 Connector

Pin	Label
1	TP0+
2	TP0-
3	TP1+
4	TP2+
5	TP2-
6	TP1-
7	TP3+
8	TP3-



XENPAK Module Ports (Catalyst 3750G-16TD Switch)

The Catalyst 3750G-16TD switch uses XENPAK modules for 10-Gigabit fiber-optic connections to networks. See the Catalyst 3750 release notes for a list of supported XENPAK modules. Fiber-optic XENPAK modules use SC connectors, as shown in Figure B-6.

Figure B-6 Fiber-Optic XENPAK Module SC Connector

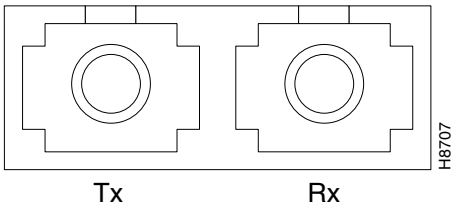


Table B-2 lists the XENPAK modules that the Catalyst 3750G-16TD switch supports.

Table B-2 Catalyst 3750G-16TD Switch Supported XENPAK Modules

XENPAK	Wavelength	Connector and Cable Type	Maximum Distance
C3-XENPAK-10GB-LR	1310 nm	SC, SMF	6.2 miles (10 km)
XENPAK-10GB-ER	1550 nm	SC, SMF	24.85 miles (40 km)
C3-XENPAK-10GB-SR	850 nm	SC; FDDI[1] grade MMF SC; OM3 MMF	85.3 feet (26 m) 984.25 feet (300 m)

1. FDDI = fiber distributed data interface

For more information about XENPAK modules, see your XENPAK module documentation.

Note The 10-Gigabit Ethernet XENPAK modules are referred to as 10-Gigabit Ethernet module ports in the software documentation.

Console Port

The console port uses an 8-pin RJ-45 connector, which is described in Table B-4 and Table B-5. The supplied RJ-45-to-DB-9 adapter cable is used to connect the console port of the switch to a console PC. You need to provide a RJ-45-to-DB-25 female DTE adapter if you want to connect the switch console port to a terminal. You can order a kit (part number ACS-DSBUASYN=) containing that adapter from Cisco. For console port and adapter pinout information, see Table B-4 and Table B-5.

Cable and Adapter Specifications

These sections describe the cables and adapters used with Catalyst 3750 switches:

SFP Module Cable Specifications

Table B-3 lists the cable specifications for the fiber-optic SFP module connections. Each port must match the wave-length specifications on the other end of the cable, and for reliable communications, the cable must not exceed the required cable length. Copper 1000BASE-T SFP transceivers use standard four twisted-pair, Category 5 or greater cable at lengths up to 328 feet (100 meters).

Table B-3 Fiber-Optic SFP Module Port Cabling Specifications

SFP Module	Wavelength (nanometers)	Fiber Type	Core Size/Cladding Size (micron)	Modal Bandwidth (MHz/km)[1]	Cable Distance
100BASE-BX (GLC-FE-100BX-D GLC-FE-100BX-U)	1310 TX 1550 RX	SMF	G.652[2]	—	32,810 feet (10 km)
100BASE-FX (GLC-GE-100FX)	1310	MMF	50/125 62.5/125	500 500	6,562 feet (2 km) 6,562 feet (2 km)
100BASE-FX (GLC-FE-100FX)	1310	MMF	50/125 62.5/125	500 500	6,562 feet (2 km) 6,562 feet (2 km)
100BASE-LX (100BASE-LX10)	1310	SMF	G.652[2]	—	32,810 feet (10 km)
1000BASE-BX10-D (GLC-BX-D)	1490 TX 1310 RX	SMF	G.652[2]	—	32,810 feet (10 km)
1000BASE-BX10-U (GLC-BX-U)	1310 TX 1490 RX	SMF	G.652[2]	—	32,810 feet (10 km)
1000BASE-SX (GLC-SX-MM)	850	MMF	62.5/125 62.5/125 50/125 50/125	160 200 400 500	722 feet (220 m) 902 feet (275 m) 1640 feet (500 m) 1804 feet (550 m)
1000BASE-LX/LH (GLC-LH-SM)	1310	MMF[3] SMF	62.5/125 50/125 50/125 G.652[2]	500 400 500 —	1804 feet (550 m) 1804 feet (550 m) 1804 feet (550 m) 32,810 feet (10 km)

Table B-3 Fiber-Optic SFP Module Port Cabling Specifications (continued)

SFP Module	Wavelength (nanometers)	Fiber Type	Core Size/Cladding Size (micron)	Modal Bandwidth (MHz/km)[1]	Cable Distance
1000BASE-ZX (GLC-ZX-SM	1550	SMF	G.652[2]	—	43.4 to 62 miles (70 to 100 km)[4]
CWDM	1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610	SMF	G.652[2]	—	62 miles (100 km)

1. Modal bandwidth applies only to multimode fiber.
2. A mode-field diameter/cladding diameter = 9 micrometers/125 micrometers
3. A mode-conditioning patch cord is required. Using an ordinary patch cord with MMF, 1000BASE-LX/LH SFP modules, and a short link distance can cause transceiver saturation, resulting in an elevated bit error rate (BER). When using the LX/LH SFP module with 62.5-micron diameter MMF, you must also install a mode-conditioning patch cord between the SFP module and the MMF cable on both the sending and receiving ends of the link. The mode-conditioning patch cord is required for link distances greater than 984 feet (300 m).
4. 1000BASE-ZX SFP modules can send data up to 62 miles (100 km) by using dispersion-shifted SMF or low-attenuation SMF; the distance depends on the fiber quality, the number of splices, and the connectors.

Two Twisted-Pair Cable Pinouts

Figure B-7 and Figure B-8 show the schematics of two twisted-pair cables for 10/100 ports.

Figure B-7 Two Twisted-Pair Straight-Through Cable Schematic

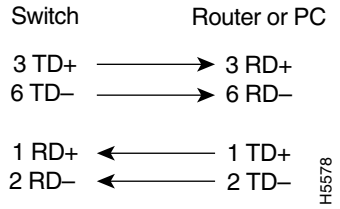
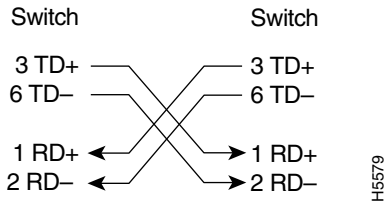


Figure B-8 Two Twisted-Pair Crossover Cable Schematic



Four Twisted-Pair Cable Pinouts for 10/100 Ports

Figure B-9 and Figure B-10 show the schematics of four twisted-pair cables for 10/100/1000 ports.

Figure B-9 Four Twisted-Pair Straight-Through Cable Schematic for 10/100/1000 Ports

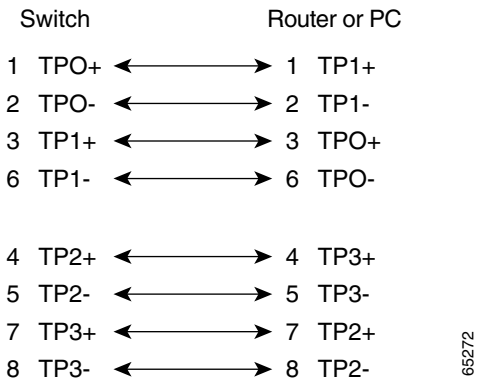
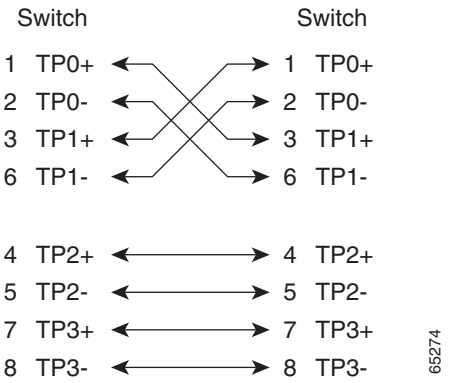


Figure B-10 Four Twisted-Pair Crossover Cable Schematic for 10/100/1000 Ports



Identifying a Crossover Cable

You can identify a crossover cable by comparing the two modular ends of the cable. Hold the cables side-by-side with the tab at the back. The first (far left) colored wire (pin 1) at one end of the cable is the third colored wire (pin 3) at the other end of the cable. The second colored wire (pin 2) at one end of the cable is the sixth colored wire (pin 6) at the other end of the cable. See Figure B-11.

Figure B-11 Crossover Cable

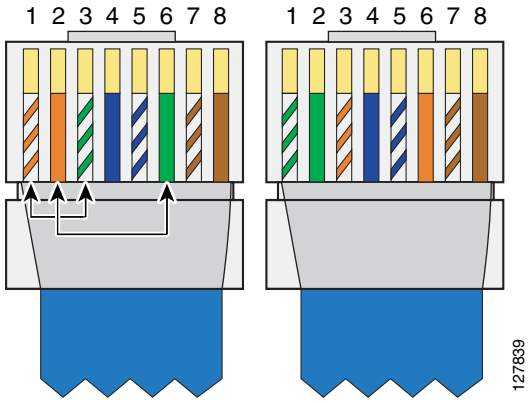
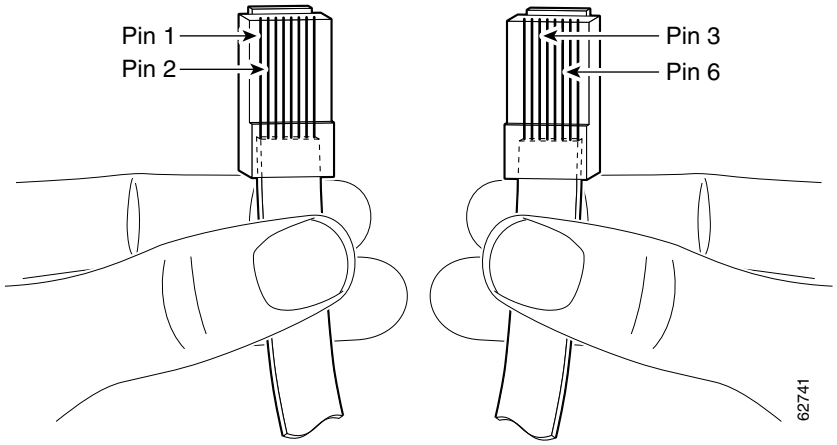


Figure B-12 RJ-45 Crossover Cable Identification



Four Twisted-Pair Cable Pinouts for 1000BASE-T Ports

Figure B-13 and Figure B-14 show the schematics of four twisted-pair cables for 10/100/1000 ports on Catalyst 3750 switches.

Figure B-13 Four Twisted-Pair Straight-Through Cable Schematic for 10/100/1000 Ports

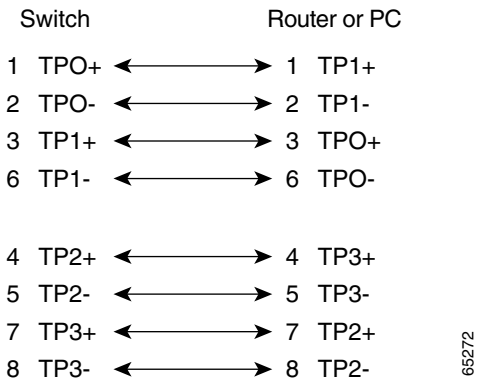
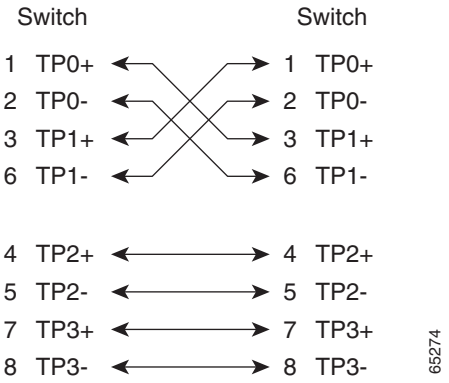


Figure B-14 Four Twisted-Pair Crossover Cable Schematics for 10/100/1000 and 1000BASE-T SFP Module Ports



Crossover Cable and Adapter Pinouts

This section describes the adapter pinouts.

Table B-4 lists the pinouts for the console port, the RJ-45-to-DB-9 adapter cable, and the console device.

Table B-4 Console Port Signaling Using a DB-9 Adapter

Switch Console Port (DTE)	RJ-45-to-DB-9 Terminal Adapter	Console Device
Signal	**DB-9 Pin**	**Signal**
RTS	8	CTS
DTR	6	DSR

Table B-4 Console Port Signaling Using a DB-9 Adapter (continued)

Switch Console Port (DTE)	RJ-45-to-DB-9 Terminal Adapter	Console Device
Signal	**DB-9 Pin**	**Signal**
TxD	2	RxD
GND	5	GND
GND	5	GND
RxD	3	TxD
DSR	4	DTR
CTS	7	RTS

Table B-5 lists the pinouts for the console port, RJ-45-to-DB-25 female DTE adapter, and the console device.

Note The RJ-45-to-DB-25 female DTE adapter is not supplied with the switch. You can order a kit (part number ACS-DSBUASYN=) containing this adapter from Cisco.

Table B-5 Console Port Signaling Using a DB-25 Adapter

Switch Console Port (DTE)	RJ-45-to-DB-25 Terminal Adapter	Console Device
Signal	**DB-25 Pin**	**Signal**
RTS	5	CTS
DTR	6	DSR
TxD	3	RxD
GND	7	GND
GND	7	GND
RxD	2	TxD
DSR	20	DTR
CTS	4	RTS