



## APPENDIX **B**

# Connector and Cable Specifications

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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” section on page B-1](#)
- [“Cable and Adapter Specifications” section on page B-4](#)

## Connector Specifications

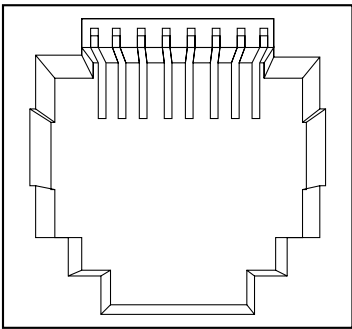
These sections describe the connectors used with the Catalyst 3750 switches:

- [“10/100 and 10/100/1000 Ports” section on page B-2](#)
- [“100BASE-FX Ports” section on page B-2](#)
- [“SFP Module Ports” section on page B-3](#)
- [“XENPAK Module Ports \(Catalyst 3750G-16TD Switch\)” section on page B-4](#)
- [“Console Port” section on page B-4](#)

## 10/100 and 10/100/1000 Ports

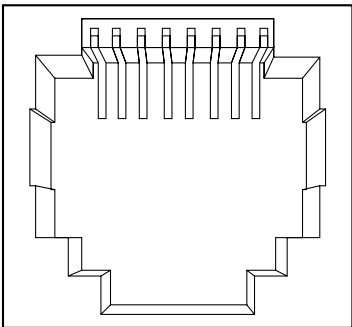
The 10/100 and 10/100/1000 Ethernet ports on Catalyst 3750 switches use standard RJ-45 connectors and Ethernet pinouts with internal crossovers. [Figure B-2](#) and [Figure B-1](#) show the pinouts.

**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								

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**Figure B-2** 10/100/1000 Port Pinouts

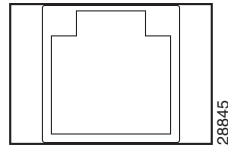
Pin	Label	1	2	3	4	5	6	7	8
1	TP0+								
2	TP0-								
3	TP1+								
4	TP2+								
5	TP2-								
6	TP1-								
7	TP3+								
8	TP3-								

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## 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.

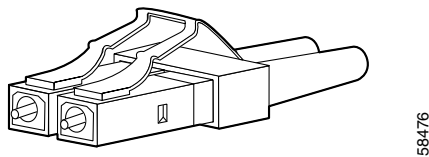
You can connect a 100BASE-FX port to an SC or ST port on a target device by using one of the MT-RJ fiber-optic patch cables listed in [Table B-1](#). Use the Cisco part numbers in [Table B-1](#) to order the patch cables that you need.

**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.

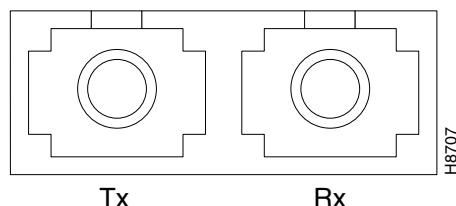
**Figure B-4** Fiber-Optic SFP Module LC Connector**Figure B-5** Copper SFP Module RJ-45 Connector

Pin	Label	1	2	3	4	5	6	7	8
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 <sup>1</sup> 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](#), page B-5
- [Two Twisted-Pair Cable Pinouts](#), page B-6

- [Four Twisted-Pair Cable Pinouts for 10/100 Ports, page B-6](#)
- [Identifying a Crossover Cable, page B-7](#)
- [Four Twisted-Pair Cable Pinouts for 1000BASE-T Ports, page B-8](#)
- [Crossover Cable and Adapter Pinouts, page B-8](#)

## 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) <sup>1</sup>	Cable Distance
100BASE-BX (GLC-FE-100BX-D GLC-FE-100BX-U)	1310 TX 1550 RX	SMF	G.652 <sup>2</sup>	—	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 <sup>2</sup>	—	32,810 feet (10 km)
1000BASE-BX10-D (GLC-BX-D)	1490 TX 1310 RX	SMF	G.652 <sup>2</sup>	—	32,810 feet (10 km)
1000BASE-BX10-U (GLC-BX-U)	1310 TX 1490 RX	SMF	G.652 <sup>2</sup>	—	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 <sup>3</sup>  SMF	62.5/125 50/125 50/125 G.652 <sup>2</sup>	500 400 500 —	1804 feet (550 m) 1804 feet (550 m) 1804 feet (550 m) 32,810 feet (10 km)
1000BASE-ZX (GLC-ZX-SM)	1550	SMF	G.652 <sup>2</sup>	—	43.4 to 62 miles (70 to 100 km) <sup>4</sup>
CWDM	1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610	SMF	G.652 <sup>2</sup>	—	62 miles (100 km)

1. Modal bandwidth applies only to multimode fiber.

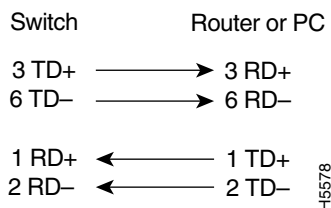
2. A mode-field diameter/cladding diameter = 9 micrometers/125 micrometers

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.

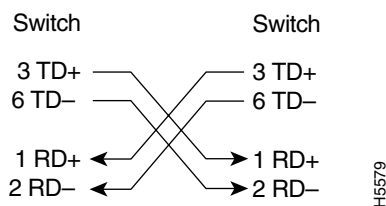
## Two Twisted-Pair Cable Pinouts

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**



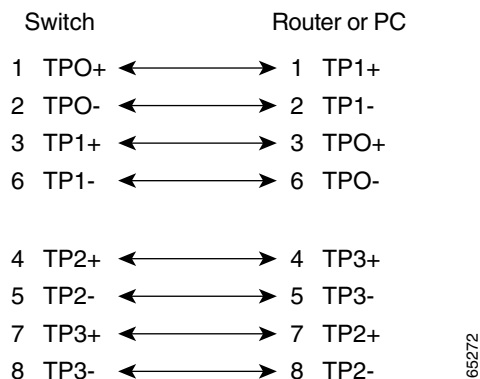
**Figure B-8 Two Twisted-Pair Crossover Cable Schematic**



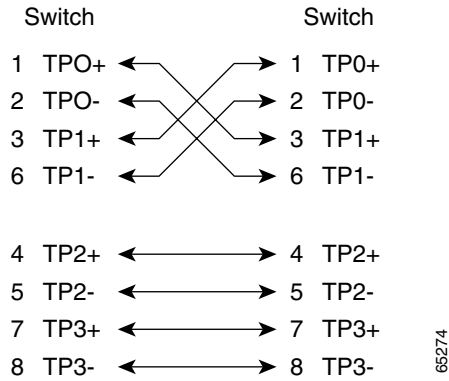
## Four Twisted-Pair Cable Pinouts for 10/100 Ports

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**



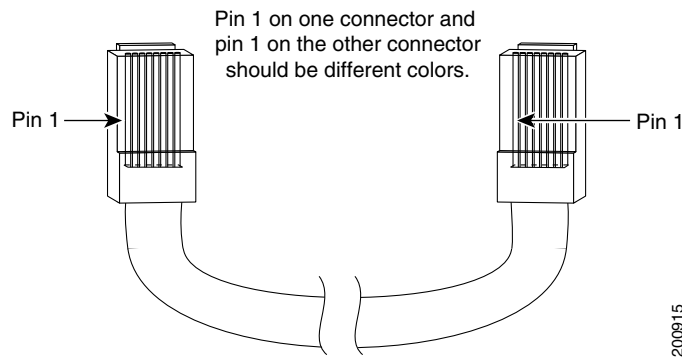
**Figure B-10 Four Twisted-Pair Crossover Cable Schematic for 10/100/1000 Ports**



## Identifying a Crossover Cable

To identify a crossover cable, compare the two modular ends of the cable. Hold the cable ends side-by-side, with the tab at the back. The wire connected to the pin on the outside of the left plug should be a different color from the wire connected to the pin on the inside of the right plug. (See [Figure B-11](#).)

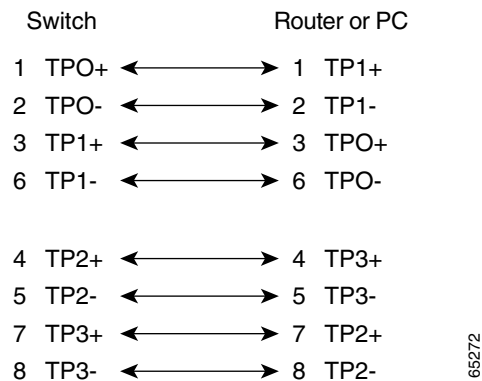
**Figure B-11 Identifying a Crossover Cable**



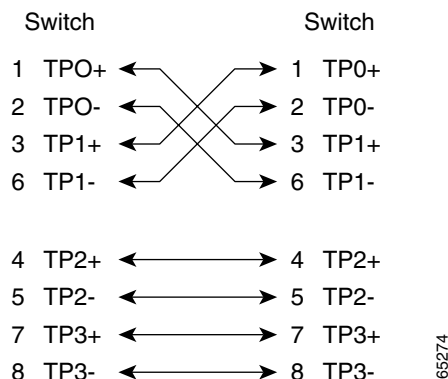
## Four Twisted-Pair Cable Pinouts for 1000BASE-T Ports

Figure B-12 and Figure B-13 show the schematics of four twisted-pair cables for 10/100/1000 ports on Catalyst 3750 switches.

**Figure B-12** Four Twisted-Pair Straight-Through Cable Schematic for 10/100/1000 Ports



**Figure B-13** 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

