APPENDIX B

Connectors and Cables

This appendix provides connector and cable descriptions for the following switch ports:

- Switched 10BaseT and 100BaseTX RJ-45 ports
- Switched 100BaseFX SC port
- Switched 100-Mbps fiber ports
- Switched 10-Mbps AUI port
- Console port

Switched 10BaseT and 100BaseTX RJ-45 Ports

The 10BaseT ports (1x through 12x or 24x) and the 100BaseTX ports (Ax and Bx) use RJ-45 connectors (Figure B-1). Table B-1 describes the port pin assignments.

Figure B-1 10BaseT RJ-45 Connector

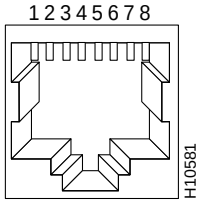


Table B-1 10BaseT and 100BaseTX RJ-45 Port Pin Assignments

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

As indicated by the X, the 10BaseT and 100BaseTX ports have their transmit (TD) and receive (RD) signals internally crossed for attachment of an adapter using a straight-through cable.

When connecting the 10BaseT ports to 10BaseT-compatible servers, routers, or workstations, use a *straight-through* cable wired for 10BaseT. When connecting to other switches or repeaters, use a *crossover* cable.

When connecting the 100BaseTX ports to 100BaseT-compatible servers, routers, or workstations, use a *straight-through* cable. When connecting to the 100BaseTX port on another switch or hub, use a *crossover* cable.

Note Always observe the following general rules when connecting devices: Use a straight-through cable to connect two ports when one of the ports is designated with an **X**; use a crossover cable to connect two ports when both ports are designated with an **X**.

The schematics for the crossover and straight-through cables are shown in Figure B-2 and Figure B-3, respectively.

Figure B-2 Crossover Cable Schematic

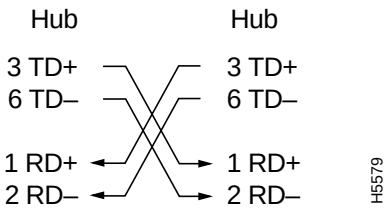
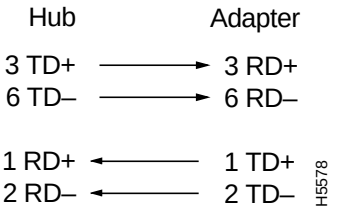


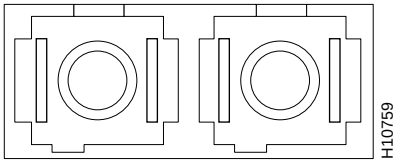
Figure B-3 Straight-Through Cable Schematic



Switched 100BaseFX Duplex SC Port

The 100BaseFX port (Ax), as illustrated in Figure B-4, uses a duplex SC connector.

Figure B-4 SC Connector



The fiber-optic connections between the switch and the attached device can be as follows:

- If the switch port and the port on the attached device are configured for half-duplex operation, the connection can be over distances of up to 412 meters.
- If the switch port and the port on the attached device are configured for full-duplex operation, the connection can be over distances of up to 2 kilometers.

Switched 100-Mbps MT-RJ Fiber Ports

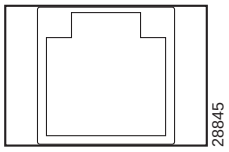
The 100-Mbps fiber ports (A and B), as illustrated in Figure B-5, uses MT-RJ connectors, and you must use the appropriate MT-RJ fiber-optic patch cable to connect these ports to the SC or ST port(s) on the other 100BaseFX-compatible device(s). For information about fiber-optic cabling distances, see the “Switched 100BaseFX Duplex SC Port” section on page B-3.

You can order MT-RJ patch cable from your cable vendor, or you can order these cables from Cisco:

- CAB-MTRJ-SC-MM-1M (1-meter, MT-RJ-to-SC multimode cable)
- CAB-MTRJ-SC-MM-3M (3-meter, MT-RJ-to-SC multimode cable)
- CAB-MTRJ-SC-MM-5M (5-meter, MT-RJ-to-SC multimode cable)
- CAB-MTRJ-ST-MM-1M (1-meter, MT-RJ-to-ST multimode cable)
- CAB-MTRJ-ST-MM-3M (3-meter, MT-RJ-to-ST multimode cable)
- CAB-MTRJ-ST-MM-5M (5-meter, MT-RJ-to-ST multimode cable)

The fiber-optic wavelength of the ports is 1300 nanometers.

Figure B-5 MT-RJ Connectors



Switched 10-Mbps AUI Port

The Ethernet AUI port uses a 15-pin female connector, as shown in Figure B-6. The pin assignments for this port are described in Table B-2.

Figure B-6 AUI Port

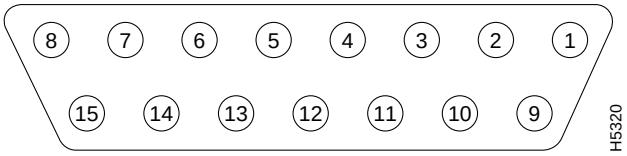


Table B-2 AUI Port Pin Assignments

Pin	Label	Description
1	GND	Ground
2	CI+	Positive AUI differential collision-data input
3	TX+	Positive AUI differential transmit-data input
4	GND	Ground
5	RX+	Positive AUI differential receive-data output
6	GND	Ground
7	NC	—
8	GND	Ground
9	CI-	Negative AUI differential collision data
10	TX-	Negative AUI differential transmit-data input
11	GND	Ground
12	RX-	Negative AUI differential receive data output
13	+12V	12V supply for external MAU
14	GND	Ground
15	NC	—

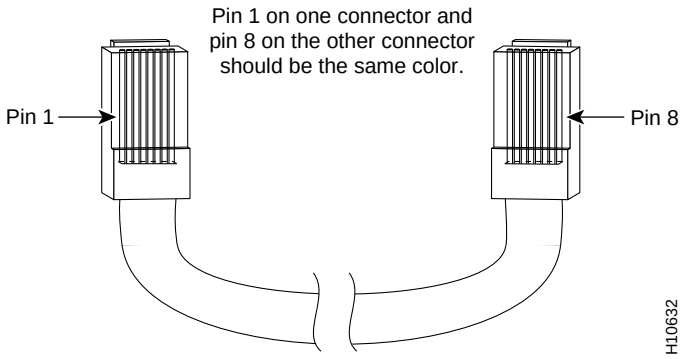
Console Port

The console port uses an 8-pin RJ-45 connector, as shown in Figure B-1. The supplied RJ-45-to-RJ-45 rollover cable and adapters are used to connect the switch console port to a management station or modem. The following sections describe the rollover cable and adapters for the console port.

Identifying a Rollover Cable

You can identify a rollover cable by comparing 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 the same color as the wire connected to the pin on the outside of the right plug (see Figure B-7).

Figure B-7 Identifying a Rollover Cable



Connecting to a PC

Use the thin, flat, RJ-45-to-RJ-45 rollover cable and RJ-45-to-DB-9 female DTE adapter (labeled TERMINAL) to connect the console port to a PC running terminal emulation software. Figure B-8 shows how to connect the console port to a PC. Table B-3 lists the pin assignments for the console port, the RJ-45-to-RJ-45 rollover cable, and the RJ-45-to-DB-9 female DTE adapter (labeled TERMINAL). This adapter is supplied with the switch.

Figure B-8 Connecting the Console Port to a PC

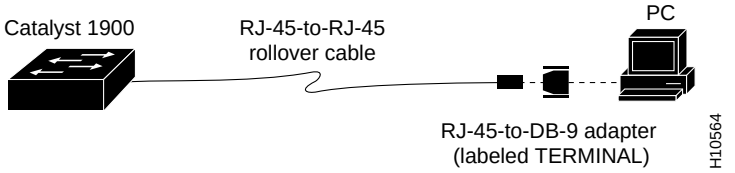


Table B-3 Console Port Signaling and Cabling Using a DB-9 Adapter

Console Port (DTE)	RJ-45-to-RJ-45 Rollover Cable		RJ-45-to-DB-9 Terminal Adapter	Console Device
Signal	**RJ-45 Pin**	**RJ-45 Pin**	**DB-9 Pin**	**Signal**
RTS	1[1]	8	8	CTS
DTR	2	7	6	DSR
TxD	3	6	2	RxD
GND	4	5	5	GND
GND	5	4	5	GND
RxD	6	3	3	TxD
DSR	7	2	4	DTR
CTS	8[1]	1	7	RTS

1 Pin 1 is connected (inside the terminal adapter) to Pin 8.

Connecting to a Terminal

Table B-4 lists the pin assignments for the console port, the RJ-45-to-RJ-45 rollover cable, and the RJ-45-to-DB-25 female DTE adapter.

Note This adapter is not supplied with the switch.

Table B-4 Console Port Signaling and Cabling Using a DB-25 Adapter

Console Port (DTE)	RJ-45-to-RJ-45 Rollover Cable		RJ-45-to-DB-25 Terminal Adapter	Console Device
Signal	**RJ-45 Pin**	**RJ-45 Pin**	**DB-25 Pin**	**Signal**
RTS	1[1]	8	5	CTS
DTR	2	7	6	DSR
TxD	3	6	3	RxD
GND	4	5	7	GND
GND	5	4	7	GND
RxD	6	3	2	TxD
DSR	7	2	20	DTR
CTS	8[1]	1	4	RTS

1 Pin 1 is connected (inside the terminal adapter) to Pin 8.

Connecting to a Modem

Table B-5 lists the pin assignments for the console port, the RJ-45-to-RJ-45 rollover cable, and the RJ-45-to-DB-25 male DCE adapter.

Note This adapter is not supplied with the switch.

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

Console Port (DTE)	RJ-45-to-RJ-45 Rollover Cable		RJ-45-to-DB-25 Modem Adapter	Modem
Signal	**RJ-45 Pin**	**RJ-45 Pin**	**DB-25 Pin**	**Signal**
RTS	1[1]	8	4	RTS
DTR	2	7	20	DTR
TxD	3	6	3	TxD
GND	4	5	7	GND
GND	5	4	7	GND
RxD	6	3	2	RxD
DSR	7	2	8	DCD
CTS	8[1]	1	5	CTS

1 Pin 1 is connected (inside the terminal adapter) to Pin 8.