Selecting a Serial Cable

This appendix provides the following information:

- How to select a serial cable to connect your serial device
- Cisco part numbers for serial cables that you can order

How to Select a Serial Cable

To select a serial cable, you must answer the following questions about the serial device that you plan to connect to the router serial port:

- Is this device a data terminal equipment (DTE) or data communications equipment (DCE) device?
- What signaling standard does the serial connector on the device require?
- Is the serial connector on the device male or female?

The following sections provide information to help you answer these questions.

DTE or DCE

There are two types of devices that can communicate over a serial interface: DCE and DTE. A DCE provides a physical connection to a network and forwards traffic. A DTE connects to a network through a DCE device. Typically, a DTE device is connected to a DCE device (or vice versa) rather than another DTE device.

Check the documentation that ships with your serial device to determine if it is a DTE or DCE device. If you cannot find the information in the serial device documentation, refer to Table A-1. This table summarizes serial devices that can be connected to the router serial

port and whether the device is considered a DTE or DCE device. The Cisco 805 router is a DTE device by default. Table A-2 describes the type of cable needed to connect a DTE or DCE device to your router.

Table A-1   DTE and DCE Devices

Serial Device	DTE	DCE	Selectable DTE or DCE[1]
Modems (asynchronous and synchronous)		X	
Channel service unit/data service unit (CSU/DSU)		X	
Multiplexers		X	
Terminals	X		
Routers			X
Hubs			X
Switches			X
Access server			X

1   These serial devices usually have a jumper, switch, or software command that selects the DTE or DCE mode.

Table A-2   Cable Type Needed to Connect Serial Devices

Serial Device Type	Cable Type Needed
DTE	DCE
DCE	DTE

Signaling Standards

Several standards define the signaling over the serial connectors on the router and serial device, the serial cable, and the cable connectors. You can connect a serial device with the following types of connectors to the router serial port:

- EIA/TIA-232
- EIA/TIA-449
- EIA/TIA-530
- EIA/TIA-530A
- X.21
- V.35

Check the documentation that ships with your serial device to determine the type of serial connector on your serial device.

Connector Gender

If pins protrude from the base of a connector, the connector is male. If the connector has holes to accept the pins, the connector is female.
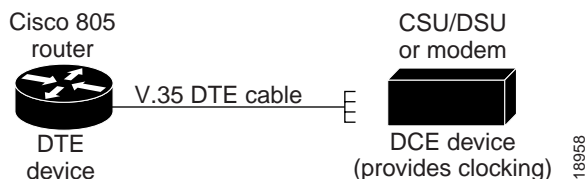
A DTE device typically has a male connector, while a DCE device typically has a female connector.

Examine the serial connector on your serial device to determine its gender.

Serial Connection Example

Figure A-1 shows a typical serial connection for the Cisco 805 router. In this example, the router, which is a DTE device, is connected to a CSU/DSU or modem, which are DCE devices.

Figure A-1   **Serial Connection Example**

The CSU/DSU or modem and its serial connector have the following characteristics:

- DCE device

- V.35

- Female

Because the serial devices are DCE, you should use a DTE cable to connect the router and the CSU/DSU or modem. (For more information on the cable type needed to connect a serial device, refer to Table A-2.)

Given these characteristics, the appropriate serial cable to connect the router and the CSU/DSU or modem is a DTE V.35 male cable.

Note   Some CSU/DSUs have a proprietary serial connector that will not mate with a Cisco serial cable. If this situation occurs, you must provide an adapter (pigtail) cable that makes the proprietary serial connector compatible with the Cisco serial connector. The gender of the adapter cable should match the gender of the proprietary serial connector.

Serial Cable Part Numbers

Table A-3 summarizes serial cables that you can order from Cisco.

Table A-3   Cisco Serial Cables

Mode	Signaling	Gender	Part Number
DCE	EIA/TIA-232	Female	CAB-SS-232FC
DTE	EIA/TIA-232	Male	CAB-SS-232MT
DCE	EIA/TIA-449	Female	CAB-SS-449FC
DTE	EIA/TIA-449	Male	CAB-SS-449MT
DCE	EIA/TIA-530	Female	CAB-SS-530FC
DTE	EIA/TIA-530	Male	CAB-SS-530MT
DCE	EIA/TIA-530A	Female	CAB-SS-530AFC
DTE	EIA/TIA-530A	Male	CAB-SS-530AMT
DCE	X.21	Female	CAB-SS-X21FC
DTE	X.21	Male	CAB-SS-X21MT
DCE	V.35	Female	CAB-SS-V35FC
DTE	V.35	Female	CAB-SS-V35FT
DCE	V.35	Male	CAB-SS-V35MC
DTE	V.35	Male	CAB-SS-V35MT