# Cabling Specifications

This appendix describes cables and cabling guidelines that should be used with the
Cisco 1400 series router and contains the following sections:

- ATM-25 Cable

- ADSL Cable

- POTS Crossover Cable

- ATM Loopback Plug

- Ethernet Cable

- Console Cable

- Ethernet Network Cabling Guidelines

ATM-25 Cable

The green RJ-45-to-RJ-45 ATM-25 cable connects the Cisco 1401 router through a DSL modem to the ADSL line. This cable must be a Category 3, 4, or 5 unshielded twisted-pair (UTP) cable. The cable that came with your router is Category 5 and is shown in Figure C-1. The signal associated with each pin is described in Table C-1.

Figure C-1   ATM-25 Cable
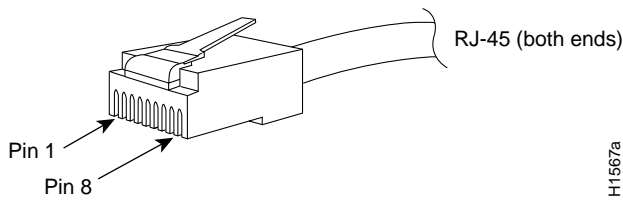
Table C-1   ATM-25 Cable Pinouts

| Pin	Signal
1	RD+
2	RD–
3	Not used
4	Not used
5	Not used
6	Not used
7	TD+
8	TD–

Note If you want to connect the ATM-25 port to the ATM port on another router, you must supply an RJ-45-to-RJ-45 crossover cable.

ADSL Cable

The purple RJ-11-to-RJ-11 ADSL cable connects the Cisco 1407 and Cisco 1417 routers to the ADSL line. This cable must be a Category 3, 4, or 5 unshielded twisted-pair (UTP) cable. The cable that came with your router is Category 5 and is shown in Figure C-2. Cable pinouts are described in Table C-2. Pins 2 and 5 are used for data.

Figure C-2   ADSL Cable

RJ-11 (both ends)

Pin 1

Pin 6

17620
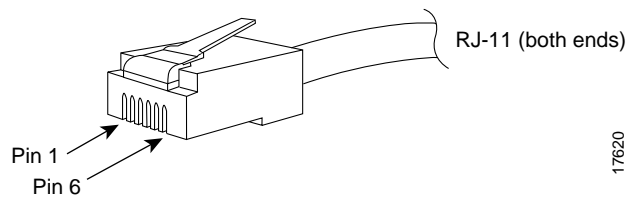
Table C-2   ADSL Cable Pinouts

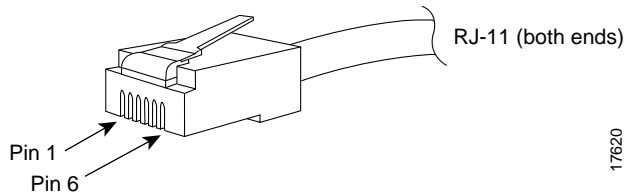| Pin[1]		Pin
2[2]	<—>	2
3	<—>	3
4	<—>	4
5	<—>	5

1   Pins 1 and 6 are not used.
2   Pins 2 and 5 are used for data.

POTS Crossover Cable

The purple (with a blue stripe) RJ-11-to-RJ-11 POTS crossover cable connects the Cisco 1407 and Cisco 1417 routers to POTS splitters that use pins 3 and 4 for data. (The Cisco 1417 router uses pins 2 and 5 for data.) This cable can be ordered from Cisco. If you provide your own cable, it must be a Category 3, 4, or 5 unshielded twisted-pair (UTP) cable. The orderable Cisco cable is Category 5 and is shown in Figure C-3. Cable pinouts are described in Table C-3.

Figure C-3   POTS Crossover Cable

RJ-11 (both ends)

Pin 1

Pin 6

17620

Table C-3   POTS Crossover Cable Pinouts

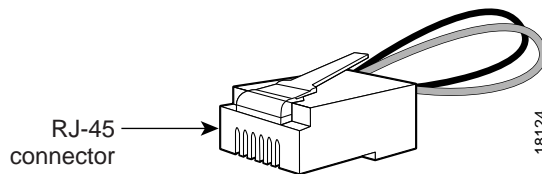| Pin[1]		Pin
2	<—>	3
3	<—>	2
4	<—>	5
5	<—>	4

1   Pins 1 and 6 are not used.

ATM Loopback Plug

An ATM loopback plug is used when performing a loopback test on the Cisco 1401 router. The loopback plug is shown in Figure C-4 and plug pinouts are described in Table C-4.

Figure C-4   ATM Loopback Plug

RJ-45
connector

18124

Table C-4   ATM Loopback Plug Pinouts

Pin[1]	Signal		Pin	Signal
1	RD +	< — >	7	TD +
2	RD –	< — >	8	TD –

1   Pins 3, 4, 5, and 6 are not used.

Ethernet Cable

This section describes the yellow RJ-45-to-RJ-45 Ethernet cable used to connect the router to your local Ethernet network. This cable is shipped with the router. The signal associated with each pin is described in Table C-5.

Table C-5   **Straight-Through Ethernet Cable Pinouts**

RJ-45 Pin[1]	Signal	Direction	RJ-45 Pin
1	TX+	—>	1
2	TX–	—>	2
3	RX+	<—	3
6	RX–	<—	6

1   Pins 4, 5, 7, and 8 are not used.

Console Cable

and Adapters

A console cable kit is provided with your router. Use this kit when connecting your router to a PC or terminal.

The console cable kit contains these items:

- RJ-45-to-RJ-45 console cable (blue)

- RJ-45-to-DB-25 adapter (gray)

- RJ-45-to-DB-9 adapter (gray)

Table C-6 describes the wiring for the console port, the console cable, and both adapters. Figure C-5 illustrates how to identify the console cable, which is also referred to as a *rollover* cable.

Table C-6   Console Cable and Adapter Pinouts

Signal	CONSOLE Port (DTE) RJ-45 Pin	RJ-45-to-RJ-45 Console Cable RJ-45 Pin	Adapter DB-9 Pin	Adapter DB-25 Pin	Signal
–	1	8	7	4	–
DTR	2	7	4	20	DSR
TxD	3	6	3	2	RxD
GND	4	5	5	7	GND
GND	5	4	5	7	GND
RxD	6	3	2	3	TxD
DSR	7	2	6	6	DTR
–	8	1	8	5	–

Figure C-5   Identifying a Rollover Cable
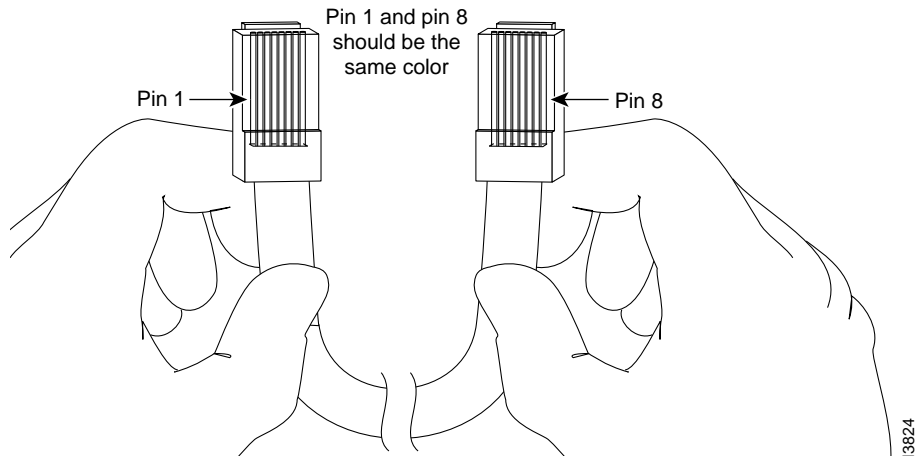
Ethernet Network Cabling Guidelines

Table C-7 describes guidelines to follow when creating Ethernet networks. Exact figures might vary depending on the manufacturer of the network equipment.

Table C-7   Ethernet Cabling Guidelines

Specification	10BaseT
Maximum segment length	100 meters
Maximum number of segments per network	5
Maximum hop count[1]	4
Maximum number of nodes per segment	1024
Cable type supported	UTP Category 3, 4, or 5

1   Hop count = Routing metric used to measure the distance between a source and a destination.