

# Cabling Specifications

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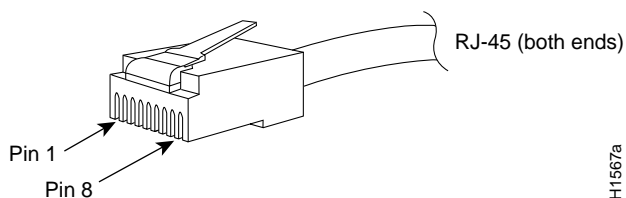
This appendix describes cables and cabling guidelines that should be used with the Cisco 1400 series router and contains the following sections:

- 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-

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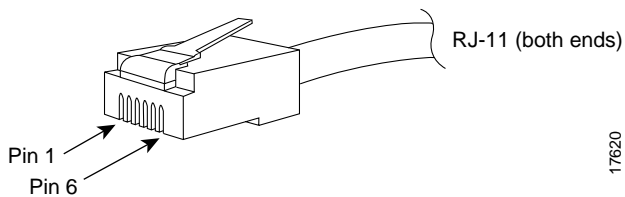
**Note** If you want to connect the ATM-25 port to the ATM port on another router, you must supply an RJ-45-to-RJ-45 crossover cable.

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## 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**



**Table C-2**      **ADSL Cable Pinouts**

Pin <sup>1</sup>		Pin
2 <sup>2</sup>	<—>	2
3	<—>	3
4	<—>	4
5	<—>	5

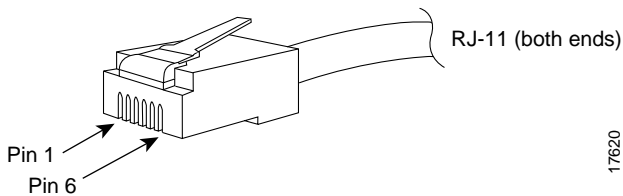
1 Pins 1 and 6 are not used.

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**



**Table C-3 POTS Crossover Cable Pinouts**

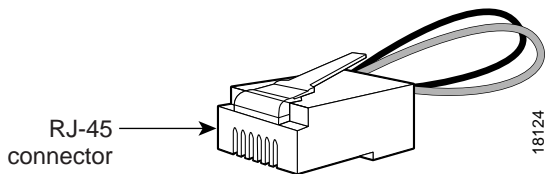
Pin <sup>1</sup>		Pin
2	<—>	3
3	<—>	2
4	<—>	5
5	<—>	4

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**



**Table C-4 ATM Loopback Plug Pinouts**

Pin <sup>1</sup>	Signal		Pin	Signal
1	RD +	<—>	7	TD +
2	RD -	<—>	8	TD -

<sup>1</sup> 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**

<b>RJ-45 Pin<sup>1</sup></b>	<b>Signal</b>	<b>Direction</b>	<b>RJ-45 Pin</b>
1	TX+	—>	1
2	TX-	—>	2
3	RX+	<—	3
6	RX-	<—	6

<sup>1</sup> 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:

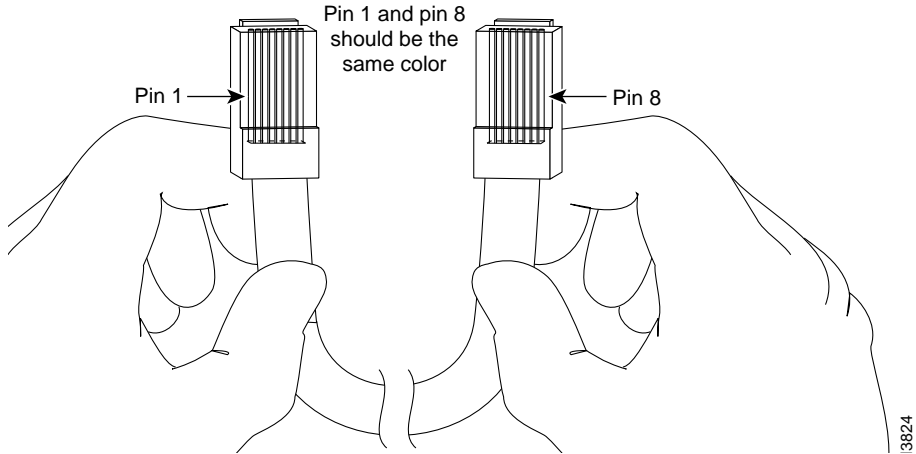
- RJ-45-to-RJ-45 console cable (blue)
- RJ-45-to-DB-25 adapter (gray)
- RJ-45-to-DB-9 adapter (gray)

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-to-RJ-45 Console Cable	Adapter	Adapter	Signal
	RJ-45 Pin	RJ-45 Pin	DB-9 Pin	DB-25 Pin	
–	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 <sup>1</sup>	4
Maximum number of nodes per segment	1024
Cable type supported	UTP Category 3, 4, or 5

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