

# Cable Specifications

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This appendix provides the following pinout information:

- Console and Auxiliary Port Signals and Pinouts
- Ethernet Cable Assembly and Pinouts
- Token Ring Port Pinouts
- Synchronous Serial Cable Assemblies and Pinouts
- ISDN BRI Port and Cable Pinouts

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**Note** All pins not listed in the tables in this appendix are not connected.

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If you prefer to order cables, refer to the section “Obtaining Service and Support” in the “Overview of the Router” chapter for information about how to contact service.

## Console and Auxiliary Port Signals and Pinouts

Your router comes with a console and auxiliary cable kit, which contains the cable and adapters you need to connect a console terminal (an ASCII terminal or PC running terminal emulation software) or modem to your router. The console and auxiliary cable kit includes the following items:

- RJ-45-to-RJ-45 roll-over cable. (See the next section, “Identifying a Roll-Over Cable,” for more information.)
- RJ-45-to-DB-9 female DTE adapter (labeled “TERMINAL”).

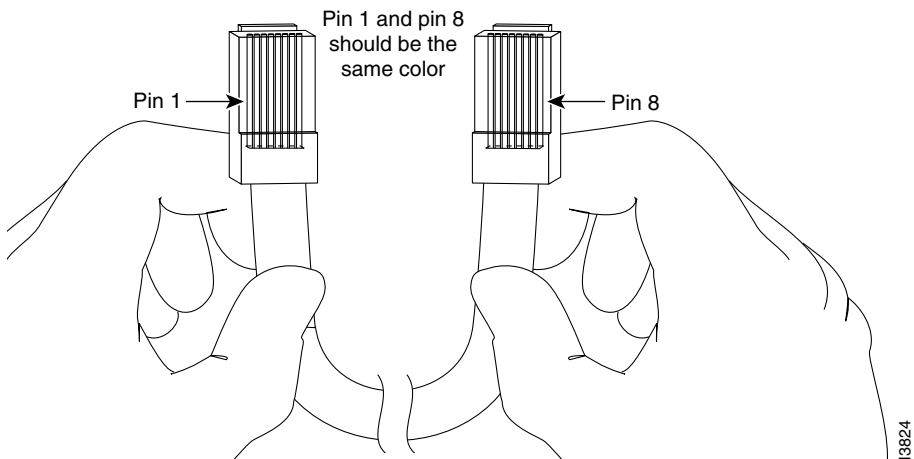
- RJ-45-to-DB-25 female DTE adapter (labeled “TERMINAL”).
- RJ-45-to-DB-25 male DCE adapter (labeled “MODEM”).

For console connections, proceed to the section “Console Port Signals and Pinouts” later in this appendix; for modem connections, proceed to the section “Auxiliary Port Signals and Pinouts” later in this appendix.

### Identifying a Roll-Over Cable

You can identify a roll-over cable by comparing the two modular ends of the cable. Holding the cables 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 C-1.) If your cable came from Cisco Systems, pin 1 will be white on one connector, and pin 8 will be white on the other (a roll-over cable reverses pins 1 and 8, 2 and 7, 3 and 6, and 4 and 5).

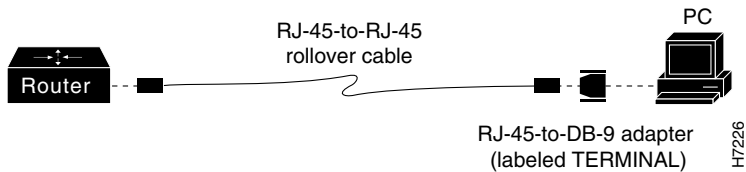
**Figure C-1** Identifying a Roll-Over Cable



## Console Port Signals and Pinouts

Use the thin, flat, RJ-45-to-RJ-45 roll-over 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 C-2 shows how to connect the console port to a PC. Table C-1 lists the pinouts for the asynchronous serial console port, the RJ-45-to-RJ-45 roll-over cable, and the RJ-45-to-DB-9 female DTE adapter (labeled “TERMINAL”).

**Figure C-2 Connecting the Console Port to a PC**



**Table C-1 Console Port Signaling and Cabling Using a DB-9 Adapter**

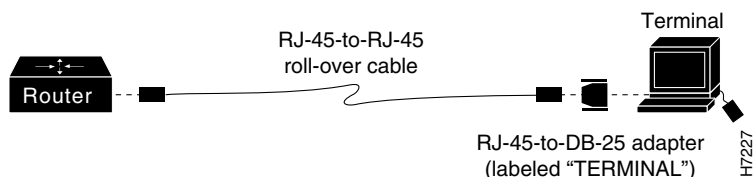
Console Port (DTE)	RJ-45-to-RJ-45 Roll-Over Cable		RJ-45-to-DB-9 Terminal Adapter	Console Device
Signal	RJ-45 Pin	RJ-45 Pin	DB-9 Pin	Signal
RTS	1 <sup>1</sup>	8	8	CTS
DTR	2	7	6	DSR
TxD	3	6	2	RxD
GND	4	5	5	GND
GND	5	4	5	GND
RxD	6	3	3	TxD
DSR	7	2	4	DTR
CTS	8 <sup>1</sup>	1	7	RTS

1. Pin 1 is connected internally to Pin 8.

## Console and Auxiliary Port Signals and Pinouts

Use the thin, flat, RJ-45-to-RJ-45 roll-over cable and RJ-45-to-DB-25 female DTE adapter (labeled “TERMINAL”) to connect the console port to a terminal. Figure C-3 shows how to connect the console port to a terminal. Table C-2 lists the pinouts for the asynchronous serial console port, the RJ-45-to-RJ-45 roll-over cable, and the RJ-45-to-DB-25 female DTE adapter (labeled “TERMINAL”).

**Figure C-3 Connecting the Console Port to a Terminal**



**Table C-2 Console Port Signaling and Cabling Using a DB-25 Adapter**

Console Port (DTE) <sup>1</sup>	RJ-45-to-RJ-45 Roll-Over Cable		RJ-45-to-DB-25 Terminal Adapter	Console Device
Signal	RJ-45 Pin	RJ-45 Pin	DB-25 Pin	Signal
RTS	1 <sup>2</sup>	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 <sup>1</sup>	1	4	RTS

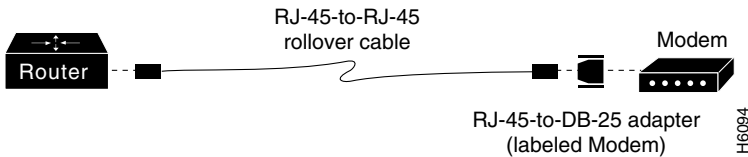
1. You can use the same cabling to connect a console to the auxiliary port.

2. Pin 1 is connected internally to Pin 8.

## Auxiliary Port Signals and Pinouts

Use the thin, flat, RJ-45-to-RJ-45 roll-over cable and RJ-45-to-DB-25 male DCE adapter (labeled “MODEM”) to connect the auxiliary port to a modem. Figure C-4 shows how to connect the auxiliary port to a modem. Table C-3 lists the pinouts for the asynchronous serial auxiliary port, the RJ-45-to-RJ-45 roll-over cable, and the RJ-45-to-DB-25 male DCE adapter (labeled “MODEM”).

**Figure C-4 Connecting the Auxiliary Port to a Modem**



**Table C-3 Auxiliary Port Signaling and Cabling Using a DB-25 Adapter**

Auxiliary Port (DTE)	RJ-45-to-RJ-45 Roll-Over Cable		RJ-45-to-DB-25 Modem Adapter	Modem
	RJ-45 Pin	RJ-45 Pin	DB-25 Pin	
RTS	1 <sup>1</sup>	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 <sup>1</sup>	1	5	CTS

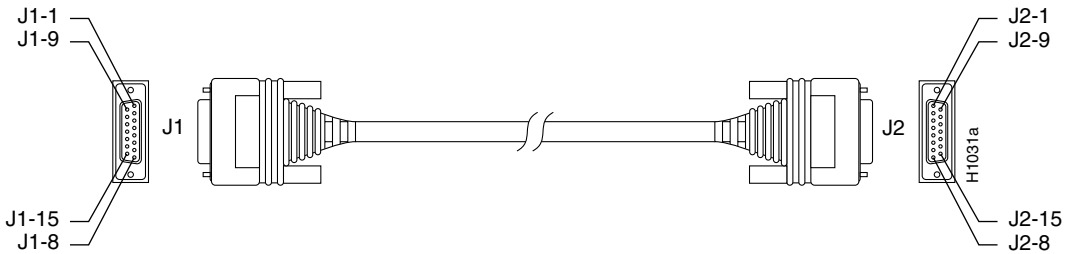
1. Pin 1 is connected internally to Pin 8.

# Ethernet Cable Assembly and Pinouts

This section describes the pinouts for an Ethernet AUI cable.

Figure C-5 shows an Ethernet AUI cable assembly, and Table C-4 lists the cable pinouts.

**Figure C-5 Ethernet AUI Cable Assembly**



**Table C-4 Ethernet AUI Cable Pinouts (DB-15)**

Pin	Ethernet Circuit	Signal
3	DO-A	Data Out Circuit A
10	DO-B	Data Out Circuit B
11	DO-S	Data Out Circuit Shield
5	DI-A	Data In Circuit A
12	DI-B	Data In Circuit B
4	DI-S	Data In Circuit Shield
2	CI-A	Control In Circuit A
9	CI-B	Control In Circuit B
1	CI-S	Control In Circuit Shield
6	VC	Voltage Common
13	VP	Voltage Plus

**Table C-4 Ethernet AUI Cable Pinouts (DB-15) (Continued)**

Pin	Ethernet Circuit	Signal
14	VS	Voltage Shield (L25 and M25)
Shell	PG	Protective Ground

## Token Ring Port Pinouts

Table C-5 lists the Token Ring port pinouts. Use a Token Ring lobe cable (not included) to connect the Token Ring port to a MAU.

**Table C-5 Token Ring Port (DB-9) Pinouts**

9 Pin <sup>1</sup>	Signal
1	Receive
3	+5V <sup>2</sup>
5	Transmit
6	Receive
9	Transmit

1. Pins 2, 4, 7, and 8 are ground.
2. 600 mA maximum.

## Synchronous Serial Cable Assemblies and Pinouts

The illustrations and tables in this section provide assembly drawings and pinouts for the EIA-530 DCE, EIA/TIA-232, EIA/TIA-449, V.35, and X.21 DTE and DCE cables, which are used with the synchronous serial WAN port (labeled “SERIAL”).

### EIA-530

Figure C-6 shows the EIA-530 serial cable assembly, and Table C-6 lists the pinouts. Arrows indicate signal direction: —> indicates DTE to DCE, and <— indicates DCE to DTE.

**Figure C-6** EIA-530 Serial Cable Assembly

**Table C-6** EIA-530 DTE Cable Pinouts (DB-60 to DB-25)

60 Pin	Signal	25 Pin	Signal	Direction	
				DTE	DCE <sup>1</sup>
J1-11	TxD/RxD+	J2-2	BA(A), TxD+	—>	
J1-12	TxD/RxD-	J2-14	BA(B), TxD-	—>	
J1-28	RxD/TxD+	J2-3	BB(A), RxD+	<—	
J1-27	RxD/TxD-	J2-16	BB(B), RxD-	<—	
J1-9	RTS/CTS+	J2-4	CA(A), RTS+	—>	
J1-10	RTS/CTS-	J2-19	CA(B), RTS-	—>	

**Table C-6 EIA-530 DTE Cable Pinouts (DB-60 to DB-25) (Continued)**

60 Pin	Signal	25 Pin	Signal	Direction	
				DTE	DCE <sup>1</sup>
J1-1	CTS/RTS+	J2-5	CB(A), CTS+	<—	
J1-2	CTS/RTS–	J2-13	CB(B), CTS–	<—	
J1-3	DSR/DTR+	J2-6	CC(A), DSR+	<—	
J1-4	DSR/DTR–	J2-22	CC(B), DSR–	<—	
J1-46	Shield_GND	J2-1	Shield		Shorted
J1-47	MODE_2	–	–		
J1-48	GND	–	–		Shorted
J1-49	MODE_1	–	–		
J1-5	DCD/DCD+	J2-8	CF(A), DCD+	<—	
J1-6	DCD/DCD–	J2-10	CF(B), DCD–	<—	
J1-24	TxC/RxC+	J2-15	DB(A), TxC+	<—	
J1-23	TxC/RxC–	J2-12	DB(B), TxC–	<—	
J1-26	RxC/TxCE+	J2-17	DD(A), RxC+	<—	
J1-25	RxC/TxCE–	J2-9	DD(B), RxC–	<—	
J1-44	LL/DCD	J2-18	LL	—>	
J1-45	Circuit_GND	J2-7	Circuit_GND	–	
J1-7	DTR/DSR+	J2-20	CD(A), DTR+	—>	
J1-8	DTR/DSR–	J2-23	CD(B), DTR–	—>	
J1-13	TxCE/TxC+	J2-24	DA(A), TxCE+	—>	
J1-14	TxCE/TxC–	J2-11	DA(B), TxCE–	—>	
J1-51	GND	—	—		Shorted
J1-52	MODE_DCE	—	—		

1. The EIA-530 interface operates in DTE mode only. A DCE cable is not available for the EIA-530 interface.

### EIA/TIA-232

Figure C-7 shows the EIA/TIA-232 cable assembly. Table C-7 lists the DTE pinouts. Table C-8 lists the DCE pinouts. Arrows indicate signal direction: —> indicates DTE to DCE, and <— indicates DCE to DTE.

**Figure C-7 EIA/TIA-232 Cable Assembly**

**Table C-7 EIA/TIA-232 DTE Cable Pinouts (DB-60 to DB-25)**

60 Pin	Signal	Description	Direction	25 Pin	Signal
J1-50	MODE_0	Shorting group	-	-	-
J1-51	GND				
J1-52	MODE_DCE				
J1-46	Shield GND	Single	-	J2-1	Shield GND
J1-41	TxD/RxD	Twisted pair no. 5	—>	J2-2	TxD
Shield	-		-	Shield	-

**Table C-7 EIA/TIA-232 DTE Cable Pinouts (DB-60 to DB-25) (Continued)**

60 Pin	Signal	Description	Direction	25 Pin	Signal
J1-36	RxD/TxD	Twisted pair no. 9	<—	J2-3	RxD
Shield	—		—	Shield	—
J1-42	RTS/CTS	Twisted pair no. 4	—>	J2-4	RTS
Shield	—		—	Shield	—
J1-35	CTS/RTS	Twisted pair no. 10	<—	J2-5	CTS
Shield	—		—	Shield	—
J1-34	DSR/DTR	Twisted pair no. 11	<—	J2-6	DSR
Shield	—		—	Shield	—
J1-45	Circuit GND	Twisted pair no. 1	—	J2-7	Circuit GND
Shield	—		—	Shield	—
J1-33	DCD/LL	Twisted pair no. 12	<—	J2-8	DCD
Shield	—		—	Shield	—
J1-37	TxC/NIL	Twisted pair no. 8	<—	J2-15	TxC
Shield	—		—	Shield	—
J1-38	RxC/TxCE	Twisted pair no. 7	<—	J2-17	RxC
Shield	—		—	Shield	—
J1-44	LL/DCD	Twisted pair no. 2	—>	J2-18	LTST
Shield	—		—	Shield	—
J1-43	DTR/DSR	Twisted pair no. 3	—>	J2-20	DTR
Shield	—		—	Shield	—
J1-39	TxCE/TxC	Twisted pair no. 6	—>	J2-24	TxCE
Shield	—		—	Shield	—

## Synchronous Serial Cable Assemblies and Pinouts

**Table C-8 EIA/TIA-232 DCE Cable Pinouts (DB-60 to DB-25)**

60 Pin	Signal	Description	Direction	25 Pin	Signal
J1-50	MODE_0	Shorting group	—	—	—
J1-51	GND				
J1-46	Shield GND	Single	—	J2-1	Shield GND
J1-36	RxD/TxD	Twisted pair no. 9	<—	J2-2	TxD
Shield	—		—	Shield	—
J1-41	TxD/RxD	Twisted pair no. 5	—>	J2-3	RxD
Shield	—		—	Shield	—
J1-35	CTS/RTS	Twisted pair no. 10	<—	J2-4	RTS
Shield	—		—	Shield	—
J1-42	RTS/CTS	Twisted pair no. 4	—>	J2-5	CTS
Shield	—		—	Shield	—
J1-43	DTR/DSR	Twisted pair no. 3	—>	J2-6	DSR
Shield	—		—	Shield	—
J1-45	Circuit GND	Twisted pair no. 1	—	J2-7	Circuit GND
Shield	—		—	Shield	
J1-44	LL/DCD	Twisted pair no. 2	—>	J2-8	DCD
Shield	—		—	Shield	—
J1-39	TxCE/TxC	Twisted pair no. 7	—>	J2-15	TxC
Shield	—		—	Shield	—
J1-40	NI/L/RxC	Twisted pair no. 6	—>	J2-17	RxC
Shield	—		—	Shield	—
J1-33	DCD/LL	Twisted pair no. 12	<—	J2-18	LTST
Shield	—		—	Shield	—

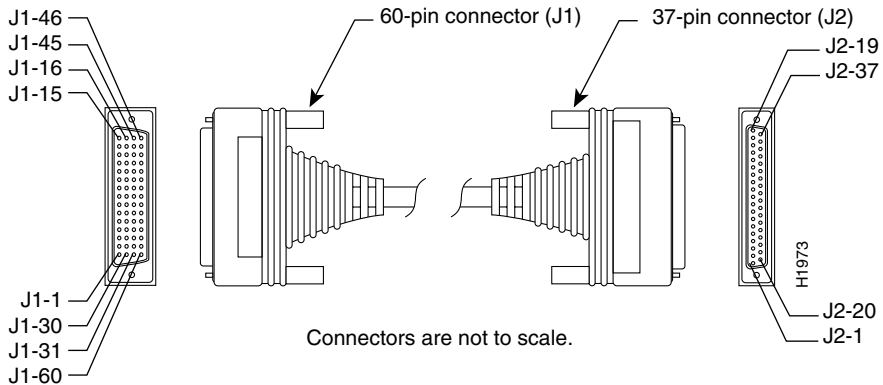
**Table C-8 EIA/TIA-232 DCE Cable Pinouts (DB-60 to DB-25) (Continued)**

60 Pin	Signal	Description	Direction	25 Pin	Signal
J1-34	DSR/DTR	Twisted pair no. 11	<—	J2-20	DTR
Shield	—		—	Shield	—
J1-38	RxC/TxCE	Twisted pair no. 8	<—	J2-24	TxCE
Shield	—		—	Shield	—

## EIA/TIA-449

Figure C-8 shows the EIA/TIA-449 cable assembly. Table C-9 lists the DTE pinouts. Table C-10 lists the DCE pinouts. Arrows indicate signal direction: —> indicates DTE to DCE, and <— indicates DCE to DTE.

**Figure C-8 EIA/TIA-449 Cable Assembly**



## Synchronous Serial Cable Assemblies and Pinouts

**Table C-9 EIA/TIA-449 DTE Cable Pinouts (DB-60 to DB-37)**

60 Pin	Signal	Description	Direction	37 Pin	Signal
J1-49	MODE_1	Shorting group	–	–	–
J1-48	GND				
J1-51	GND	Shorting group	–	–	–
J1-52	MODE_DCE				
J1-46	Shield_GND	Single	–	J2-1	Shield GND
J1-11	TxD/RxD+	Twisted pair no. 6	→	J2-4	SD+
J1-12	TxD/RxD–		→	J2-22	SD–
J1-24	TxC/RxC+	Twisted pair no. 9	←	J2-5	ST+
J1-23	TxC/RxC–		←	J2-23	ST–
J1-28	RxD/TxD+	Twisted pair no. 11	←	J2-6	RD+
J1-27	RxD/TxD–		←	J2-24	RD–
J1-9	RTS/CTS+	Twisted pair no. 5	→	J2-7	RS+
J1-10	RTS/CTS–		→	J2-25	RS–
J1-26	RxC/TxCE+	Twisted pair no. 10	←	J2-8	RT+
J1-25	RxC/TxCE–		←	J2-26	RT–
J1-1	CTS/RTS+	Twisted pair no. 1	←	J2-9	CS+
J1-2	CTS/RTS–		←	J2-27	CS–
J1-44	LL/DCD	Twisted pair no. 12	→	J2-10	LL
J1-45	Circuit_GND		–	J2-37	SC
J1-3	DSR/DTR+	Twisted pair no. 2	←	J2-11	DM+
J1-4	DSR/DTR–		←	J2-29	DM–
J1-7	DTR/DSR+	Twisted pair no. 4	→	J2-12	TR+
J1-8	DTR/DSR–		→	J2-30	TR–
J1-5	DCD/DCD+	Twisted pair no. 3	←	J2-13	RR+
J1-6	DCD/DCD–		←	J2-31	RR–

**Table C-9 EIA/TIA-449 DTE Cable Pinouts (DB-60 to DB-37) (Continued)**

60 Pin	Signal	Description	Direction	37 Pin	Signal
J1-13	TxCE/TxC+	Twisted pair no. 7	—>	J2-17	TT+
J1-14	TxCE/TxC-		—>	J2-35	TT-
J1-15	Circuit_GND	Twisted pair no. 9	-	J2-19	SG
J1-16	Circuit_GND		-	J2-20	RC

**Table C-10 EIA/TIA-449 DCE Cable Pinouts (DB-60 to DB-37)**

60 Pin	Signal	Description	Direction	37 Pin	Signal
J1-49	MODE_1	Shorting group	-	-	-
J1-48	GND				
J1-46	Shield_GND	Single	-	J2-1	Shield GND
J1-28	RxD/TxD+	Twisted pair no. 11	<—	J2-4	SD+
J1-27	RxD/TxD-		<—	J2-22	SD-
J1-13	TxCE/TxC+	Twisted pair no. 7	—>	J2-5	ST+
J1-14	TxCE/TxC-		—>	J2-23	ST-
J1-11	TxD/RxD+	Twisted pair no. 6	—>	J2-6	RD+
J1-12	TxD/RxD-		—>	J2-24	RD-
J1-1	CTS/RTS+	Twisted pair no. 1	<—	J2-7	RS+
J1-2	CTS/RTS-		<—	J2-25	RS-
J1-24	TxC/RxC+	Twisted pair no. 9	—>	J2-8	RT+
J1-23	TxC/RxC-		—>	J2-26	RT-
J1-9	RTS/CTS+	Twisted pair no. 5	—>	J2-9	CS+
J1-10	RTS/CTS-		—>	J2-27	CS-
J1-29	NIL/LL	Twisted pair no. 12	—>	J2-10	LL
J1-30	Circuit_GND		-	J2-37	SC

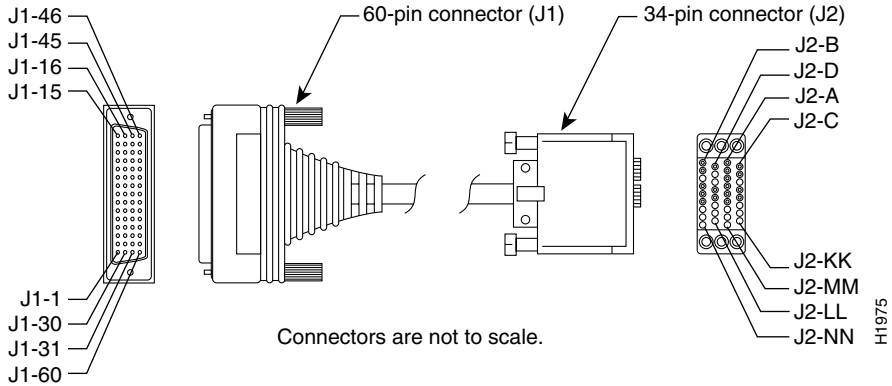
**Table C-10 EIA/TIA-449 DCE Cable Pinouts (DB-60 to DB-37) (Continued)**

60 Pin	Signal	Description	Direction	37 Pin	Signal
J1-7	DTR/DSR+	Twisted pair no. 4	—>	J2-11	DM+
J1-8	DTR/DSR-		—>	J2-29	DM-
J1-3	DSR/DTR+	Twisted pair no. 2	<—	J2-12	TR+
J1-4	DSR/DTR-		<—	J2-30	TR-
J1-5	DCD/DCD+	Twisted pair no. 3	—>	J2-13	RR+
J1-6	DCD/DCD-		—>	J2-31	RR-
J1-26	RxC/TxCE+	Twisted pair no. 10	<—	J2-17	TT+
J1-25	RxC/TxCE-		<—	J2-35	TT-
J1-15	Circuit_GND	Twisted pair no. 8	_	J2-19	SG
J1-16	Circuit_GND		_	J2-20	RC

### V.35

Figure C-9 shows the V.35 cable assembly. Table C-11 lists the DTE pinouts. Table C-12 lists the DCE pinouts. Arrows indicate signal direction: —> indicates DTE to DCE, and <— indicates DCE to DTE.

**Figure C-9 V.35 Cable Assembly**



**Table C-11 V.35 DTE Cable Pinouts (DB-60 to 34-Pin)**

60 Pin	Signal	Description	Direction	34 Pin	Signal
J1-49	MODE_1	Shorting group	–	–	–
J1-48	GND				
J1-50	MODE_0	Shorting group	–	–	–
J1-51	GND				
J1-52	MODE_DCE				
J1-53	TxC/NIL	Shorting group	–	–	–
J1-54	RxC_TxCE				
J1-55	RxD/TxD				
J1-56	GND				
J1-46	Shield_GND	Single	–	J2-A	Frame GND
J1-45	Circuit_GND	Twisted pair no. 12	–	J2-B	Circuit GND
Shield	–		–	Shield	–
J1-42	RTS/CTS	Twisted pair no. 9	—>	J2-C	RTS
Shield	–		–	Shield	–

## Synchronous Serial Cable Assemblies and Pinouts

**Table C-11 V.35 DTE Cable Pinouts (DB-60 to 34-Pin) (Continued)**

60 Pin	Signal	Description	Direction	34 Pin	Signal
J1-35	CTS/RTS	Twisted pair no. 8	<—	J2-D	CTS
Shield	—		—	Shield	—
J1-34	DSR/DTR	Twisted pair no. 7	<—	J2-E	DSR
Shield	—		—	Shield	—
J1-33	DCD/LL	Twisted pair no. 6	<—	J2-F	RLSD
Shield	—		—	Shield	—
J1-43	DTR/DSR	Twisted pair no. 10	—>	J2-H	DTR
Shield	—		—	Shield	—
J1-44	LL/DCD	Twisted pair no. 11	—>	J2-K	LT
Shield	—		—	Shield	—
J1-18	TxD/RxD+	Twisted pair no. 1	—>	J2-P	SD+
J1-17	TxD/RxD-		—>	J2-S	SD-
J1-28	RxD/TxD+	Twisted pair no. 5	<—	J2-R	RD+
J1-27	RxD/TxD-		<—	J2-T	RD-
J1-20	TxCE/TxC+	Twisted pair no. 2	—>	J2-U	SCTE+
J1-19	TxCE/TxC-		—>	J2-W	SCTE-
J1-26	RxC/TxCE+	Twisted pair no. 4	<—	J2-V	SCR+
J1-25	RxC/TxCE-		<—	J2-X	SCR-
J1-24	TxC/RxC+	Twisted pair no. 3	<—	J2-Y	SCT+
J1-23	TxC/RxC-		<—	J2-AA	SCT-

**Table C-12 V.35 DCE Cable Pinouts (DB-60 to 34-Pin)**

60 Pin	Signal	Description	Direction	34 Pin	Signal
J1-49	MODE_1	Shorting group	—	—	—
J1-48	GND				

**Table C-12 V.35 DCE Cable Pinouts (DB-60 to 34-Pin) (Continued)**

60 Pin	Signal	Description	Direction	34 Pin	Signal
J1-50	MODE_0	Shorting group	–	–	–
J1-51	GND				
J1-53	TxC/NIL	Shorting group	–	–	–
J1-54	RxC_TxCE				
J1-55	RxD/TxD				
J1-56	GND				
J1-46	Shield_GND	Single	–	J2-A	Frame GND
J1-45	Circuit_GND	Twisted pair no. 12	–	J2-B	Circuit GND
Shield	–		–	Shield	–
J1-35	CTS/RTS	Twisted pair no. 8	<—	J2-C	RTS
Shield	–		–	Shield	–
J1-42	RTS/CTS	Twisted pair no. 9	—>	J2-D	CTS
Shield	–		–	Shield	–
J1-43	DTR/DSR	Twisted pair no. 10	—>	J2-E	DSR
Shield	–		–	Shield	–
J1-44	LL/DCD	Twisted pair no. 11	—>	J2-F	RLSD
Shield	–		–	Shield	–
J1-34	DSR/DTR	Twisted pair no. 7	<—	J2-H	DTR
Shield	–		–	Shield	–
J1-33	DCD/LL	Twisted pair no. 6	<—	J2-K	LT
Shield	–		–	Shield	–
J1-28	RxD/TxD+	Twisted pair no. 5	<—	J2-P	SD+
J1-27	RxD/TxD–		<—	J2-S	SD–
J1-18	TxD/RxD+	Twisted pair no. 1	—>	J2-R	RD+
J1-17	TxD/RxD–		—>	J2-T	RD–
J1-26	RxC/TxCE+	Twisted pair no. 4	<—	J2-U	SCTE+
J1-25	RxC/TxCE–		<—	J2-W	SCTE–

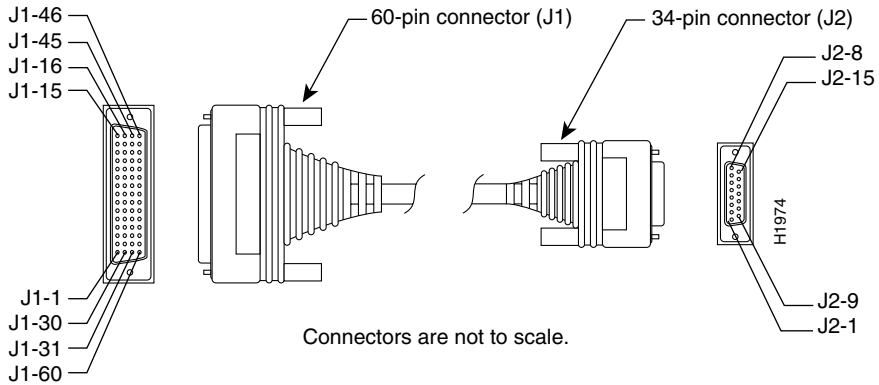
**Table C-12 V.35 DCE Cable Pinouts (DB-60 to 34-Pin) (Continued)**

<b>60 Pin</b>	<b>Signal</b>	<b>Description</b>	<b>Direction</b>	<b>34 Pin</b>	<b>Signal</b>
J1-22	NIL/RxC+	Twisted pair no. 3	—>	J2-V	SCR+
J1-21	NIL/RxC-		—>	J2-X	SCR-
J1-20	TxCE/TxC+	Twisted pair no. 2	—>	J2-Y	SCT+
J1-19	TxCE/TxC-		—>	J2-AA	SCT-

X.21

Figure C-10 shows the X.21 cable assembly. Table C-13 lists the DTE pinouts. Table C-14 lists the DCE pinouts. Arrows indicate signal direction: —> indicates DTE to DCE, and <— indicates DCE to DTE.

**Figure C-10 X.21 Cable Assembly**



**Table C-13 X.21 DTE Cable Pinouts (DB-60 to DB-15)**

60 Pin	Signal	Description	Direction	15 Pin	Signal
J1-48	GND	Shorting group	—	—	—
J1-47	MODE_2				
J1-51	GND	Shorting group	—	—	—
J1-52	MODE_DCE				
J1-46	Shield_GND	Single	—	J2-1	Shield GND
J1-11	TxD/RxD+	Twisted pair no. 3	—>	J2-2	Transmit+
J1-12	TxD/RxD-		—>	J2-9	Transmit-

**Table C-13 X.21 DTE Cable Pinouts (DB-60 to DB-15) (Continued)**

60 Pin	Signal	Description	Direction	15 Pin	Signal
J1-9	RTS/CTS+	Twisted pair no. 2	—>	J2-3	Control+
J1-10	RTS/CTS-		—>	J2-10	Control-
J1-28	RxD/TxD+	Twisted pair no. 6	<—	J2-4	Receive+
J1-27	RxD/TxD-		<—	J2-11	Receive-
J1-1	CTS/RTS+	Twisted pair no. 1	<—	J2-5	Indication+
J1-2	CTS/RTS-		<—	J2-12	Indication-
J1-26	RxC/TxCE+	Twisted pair no. 5	<—	J2-6	Timing+
J1-25	RxC/TxCE-		<—	J2-13	Timing-
J1-15	Control_GND	Twisted pair no. 4	-	J2-8	Control GND
Shield	-		-	Shield	-

**Table C-14 X.21 DCE Cable Pinouts (DB-60 to DB-15)**

60 Pin	Signal	Description	Direction	15 Pin	Signal
J1-48	GND	Shorting group	-	-	-
J1-47	MODE_2				
J1-46	Shield_GND	Single	-	J2-1	Shield GND
J1-28	RxD/TxD+	Twisted pair no. 6	<—	J2-2	Transmit+
J1-27	RxD/TxD-		<—	J2-9	Transmit-
J1-1	CTS/RTS+	Twisted pair no. 1	<—	J2-3	Control+
J1-2	CTS/RTS-		<—	J2-10	Control-
J1-11	TxD/RxD+	Twisted pair no. 3	—>	J2-4	Receive+
J1-12	TxD/RxD-		—>	J2-11	Receive-
J1-9	RTS/CTS+	Twisted pair no. 2	—>	J2-5	Indication+
J1-10	RTS/CTS-		—>	J2-12	Indication-

**Table C-14 X.21 DCE Cable Pinouts (DB-60 to DB-15) (Continued)**

60 Pin	Signal	Description	Direction	15 Pin	Signal
J1-24	TxC/RxC+	Twisted pair no. 4	—>	J2-6	Timing+
J1-23	TxC/RxC-		—>	J2-13	Timing-
J1-15	Control_GND	Twisted pair no. 5	-	J2-8	Control GND
Shield	-		-	Shield	-

## ISDN BRI Port and Cable Pinouts

Table C-15 lists the ISDN BRI port pinouts. The straight-through RJ-45-to-RJ-45 cable, used to connect to the ISDN BRI port, is not included.

**Table C-15 BRI Port (RJ-45) Pinouts**

RJ-45 8 Pin <sup>1</sup>	TE <sup>2</sup>	NT <sup>3</sup>	Polarity
3	Transmit	Receive	+
4	Receive	Transmit	+
5	Receive	Transmit	-
6	Transmit	Receive	-

1. Pins 1, 2, 7, and 8 are not used.
2. TE refers to terminal terminating layer 1 aspects of TE1, TA, and NT2 functional groups.
3. NT refers to network terminating layer 1 aspects of NT1 and NT2 functional groups.