PortServer® TS, Digi Connect®, and Digi One® Products

Cable Guide

Revision history—90000253

Revision	Date	Description
G	2013	Initial release.
H	February 2019	Updated branding and made editorial enhancements.
J	June 2020	Updated cabling information: RJ45 10-pin to DB9F modem cable and RJ45 10-pin to DB25F modem cable

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Contents

Specialty cables

Cabling solutions by Digi product and device

Digi Passport and Digi CM products use different pinouts, please refer to the appropriate product documentation.

RJ-45 to	Male or female	Straight or crossover	Applications	Cable or adapter	Part number	Pin out	Cable identifier
DB-9	F	Crossover	Bay Accelar, Nortel and other DB-9 DTE devices	Cable	76000645 (4')	RJ45 10-pin to DB9F terminal emulator cable	61090048
				Adapter (4-pack)	76000697	RJ45 to DB9 cable adapter	N/A

RJ-45 to	Male or female	Straight or crossover	Applications	Cable or adapter	Part number	Pin out	Cable identifier
DB-9	M	Crossover	The unit provides a single upstream (standard B-type receptacle) and 14 downstream (standard Atype receptacles) USB 2.0 compliant ports. The unit will attach to the upstream device as a Full-/Highspeed hub. The downstream ports support Low-Speed, Full-Speed and High-Speed downstream devices. Each downstream facing port provides a green LED status indicator. Color definitions are as follows:E devices with DB-9 female ports	Cable	76000264 (4')	RJ45 10-pin to DB9F terminal emulator cable	61080048
				Adapter	None	None	N/A
DB-9	F	Straight	Modems and other DCE devices with DB-9 male ports	Cable	76000201 (4')	RJ45 10-pin to DB9F modem cable	61070024 61070048
				Adapter	None	None	N/A
DB-9	M	Straight	Modems and other DCE devices with DB-9 female ports	Cable	76000240 (4')	RJ45 10-pin to DB9M modem cable	61060024 61060048
				Adapter (4-pack)	76000701	RJ45 to DB9M modem adapter	N/A

RJ-45 to	Male or female	Straight or crossover	Applications	Cable or adapter	Part number	Pin out	Cable identifier
DB-25	M	Crossover	Sun Sparc, Sun Ultra, terminals, printers and other DTE devices with DB-25 female ports	Cable	76000238 (4')	RJ45 10-pin to DB25F terminal emulator cable	61040048
				Adapter (4-pack)	76000698	RJ45 to DB25M console adapter	N/A
DB-25	F	Crossover	Cisco, IBM and other DTE devices with DB-25 male ports	Cable	N/A	RJ45 10-pin to DB25F terminal emulator cable	61050048
				Adapter (4-pack)	76000699	RJ45 to DB25F cable adapter	N/A
DB-25	M	Straight	Modems and other DCE devices with DB-25 female ports	Cable	76000195 (4')	RJ45 10-pin to DB25M modem cable	61020024
				Adapter (4-pack)	76000700	RJ45 to DB25M modem adapter	N/A
DB-25	F	Straight	Modems and other DCE devices with DB-25 male ports	Cable	76000199 (4’)	RJ45 10-pin to DB25F modem cable	61030024 61030048
				Adapter	None	N/A	N/A

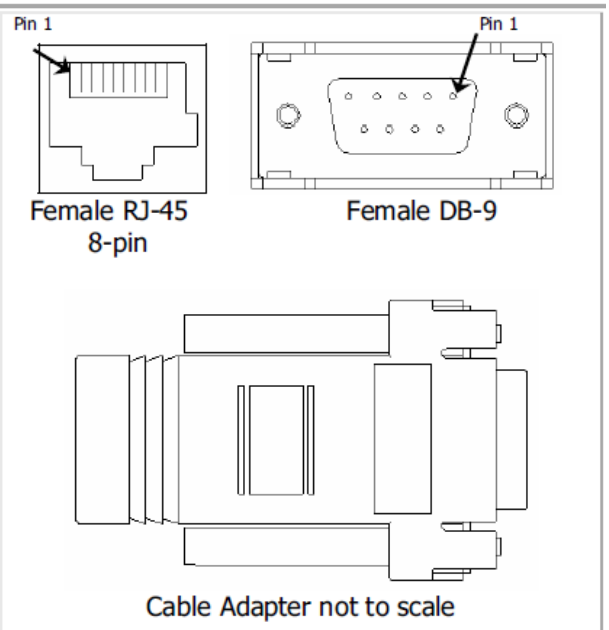
RJ-45 to	Male or female	Straight or crossover	Applications	Cable or adapter	Part number	Pin out	Cable identifier
RJ-45	M	*Special*	For use with Cisco and Sun RJ-45 console ports.	Cable	76000631 (6')	RJ45 (Altpin On) to RJ45 Cisco console adapter	63000222-02
				Adapter	None	None	N/A

- All RJ-45 to DBx cables are 10-pin. Only the RJ-45 to RJ-45 cable is an 8-pin cable.
- All RJ-45 adapters are 8-pin. When using these adapters with modems or other applications that require DCD on pin 1, you must turn on altpin.
- If altpin is turned off, the hardware signal on pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.

DB9 and DB25 DTE/console/terminal/printer adapters

RJ45 to DB9 cable adapter

From RJ-45	Signal	Direction	Signal	To DB-9
1	DCD	←	DTR	4
2	RTS	→	CTS	8
3	Ground	↔	Ground	Shell
4	TxD	→	RxD	2
5	RxD	←	TxD	3
6	SG	↔	SG	5
7	CTS	←	RTS	7
8	DTR	⇄	DCD	1
			DSR	6



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

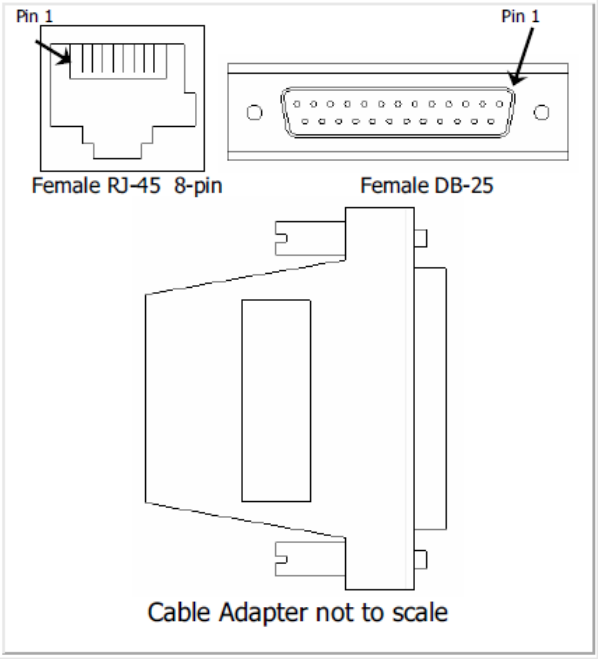
- DB9F Console Adapter: part #76000697

Notes:

- All RJ45 cable adapters are 8-pin.
- Altpin should be turned on when using this cable adapter so that DTR will drive DCD (standard usage).
- If altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable adapter utilizes the RTS signal of the serial device for hardware flow control (RTS/CTS).

RJ45 to DB25F cable adapter

From RJ-45	Signal	Direction	Signal	To DB-25
1	DCD	←	DTR	20
2	RTS	→	CTS	5
3	Ground	↔	Ground	Shell
4	TxD	→	RxD	3
5	RxD	←	TxD	2
6	SG	↔	SG	7
7	CTS	←	RTS	4
8	DTR	⇄	DSR	6
			DCD	8



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

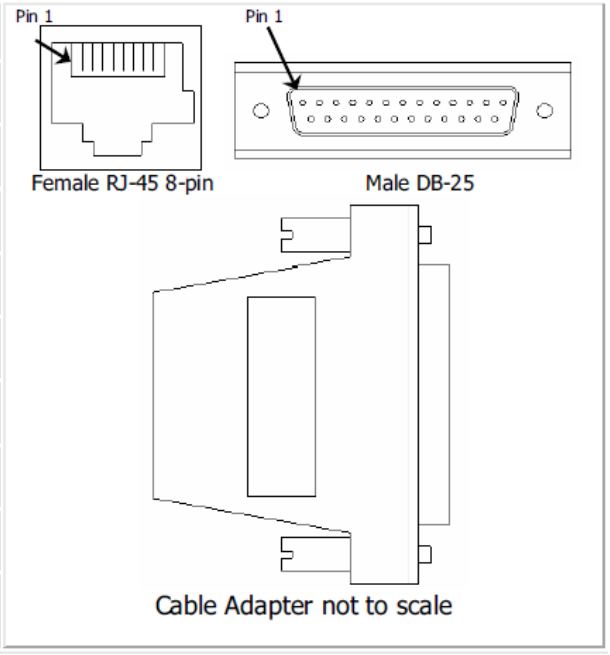
- DB25F Console Adapter: part #76000699

Notes:

- All RJ45 cable adapters are 8-pin.
- Altpin should be turned on when using this cable adapter so that DTR will drive DCD (standard usage).
- If altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable adapter utilizes the RTS signal of the serial device for hardware flow control (RTS/CTS).

RJ45 to DB25M console adapter

From RJ-45	Signal	Direction	Signal	To DB-25
1	DCD	←	DTR	20
2	RTS	→	CTS	5
3	Ground	↔	Ground	Shell
4	TxD	→	RxD	3
5	RxD	←	TxD	2
6	SG	↔	SG	7
7	CTS	←	RTS	4
8	DTR	⇄	DSR	6
			DCD	8



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

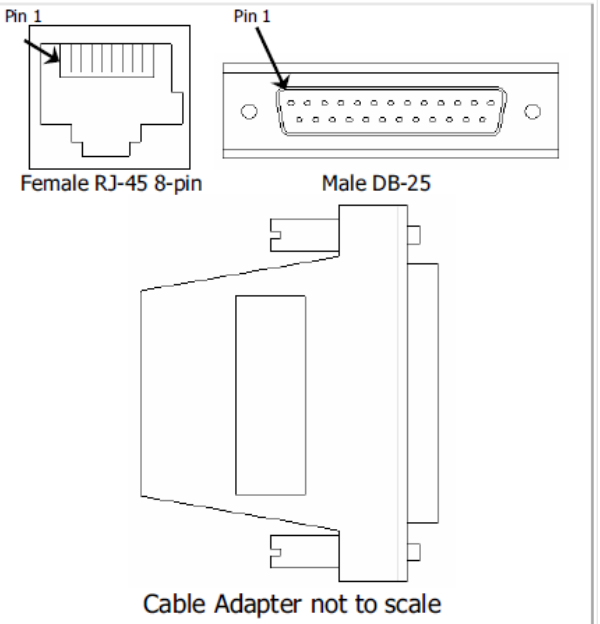
- DB25M Console Adapter: part #76000698

Notes:

- All RJ45 cable adapters are 8-pin.
- Altpin should be turned on when using this cable adapter so that DTR will drive DCD (standard usage).
- If altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable adapter utilizes the RTS signal of the serial device for hardware flow control (RTS/CTS).

RJ45 to DB25M printer adapter

From RJ-45	Signal	Direction	Signal	To DB-25
1	DCD	→	RTS	4
2	RTS	→	CTS	5
3	Ground	↔	Ground	Shell
4	TxD	→	RxD	3
5	RxD	←	TxD	2
6	SG	↔	SG	7
7	CTS	←	DTR	20
8	DTR	↱	DSR	6
			DCD	8



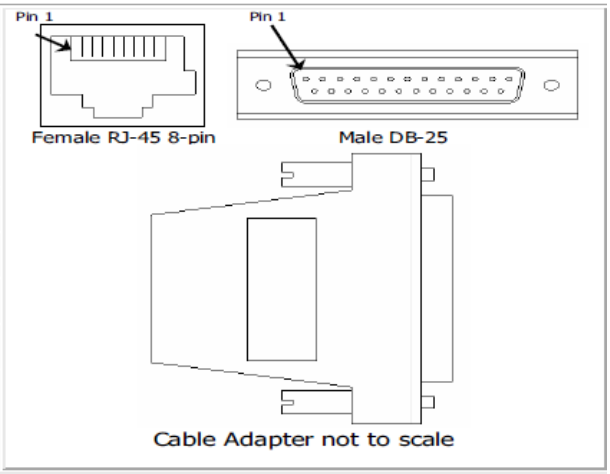
* Arrows indicate which direction the signal is flowing.

Notes:

- All RJ45 cable adapters are 8-pin.
- For use with Printers. This adapter utilizes the DTR signal of the serial device (instead of RTS) for hardware flow control (RTS/CTS).
- Okidata printers may use SSD (pin 11) instead of DTR (pin 20) on DB25 side of above diagram. If this is the case, the printer should be set to SSD+.
- Altpin should be turned on when using this cable so that DTR will drive DCD (standard usage).
- If altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.

RJ45 to DB25M modem adapter

From RJ-45	Signal	Direction	Signal	To DB-25
1	DCD	←	DCD	8
2	RTS	→	RTS	4
3	Ground	↔	Ground	Shell
4	TxD	→	TxD	2
5	RxD	←	RxD	3
6	SG	↔	SG	7
7	CTS	←	CTS	5
8	DTR	→	DTR	20



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

- DB25M Modem Adapter: part #76000700

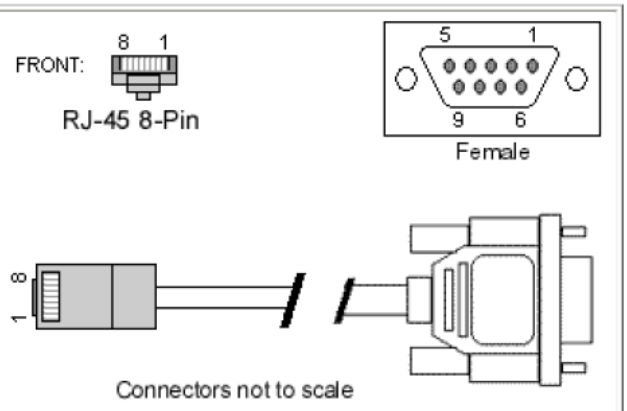
Notes:

- All RJ45 cable adapters are 8-pin.
- When using this adapter with a modem or other applications that require DCD on pin 1, you must turn on altpin.
- If altpin is turned off, the hardware signal on pin 1 becomes DSR instead of DCD.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

DB9 DTE/console/terminal/printer cables

RJ45 to DB9F terminal emulator cable

From RJ-45	Signal	Direction	Signal	To DB-9
3	GND	↔	GND	Shell
4	TxD	→	RxD	2
5	RxD	←	TxD	3
6	SG	↔	SG	5
7	CTS	←	RTS	7
1	DSR	←	DTR	4
2	RTS	→	CTS	8
8	DTR	→	DSR	6



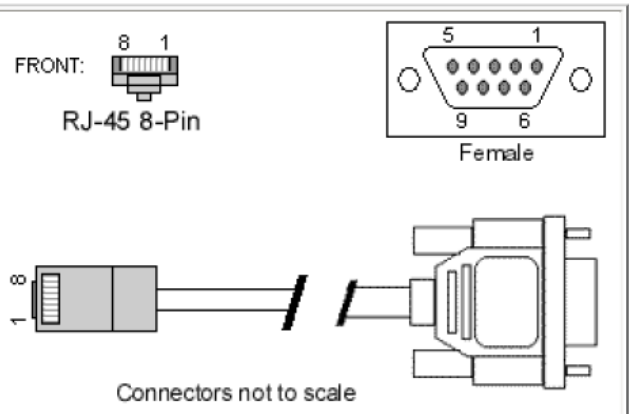
* Arrows indicate which direction the signal is flowing.

Notes:

- Altpin should be turned off when using this cable so that pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable utilizes the RTS signal of the PC terminal emulator for hardware flow control (RTS/CTS).

RJ45 (Altpin on) to DB9F terminal emulator cable

From RJ-45	Signal	Direction	Signal	To DB-9
3	GND	↔	GND	Shell
4	TxD	→	RxD	2
5	RxD	←	TxD	3
6	SG	↔	SG	5
7	CTS	←	RTS	7
1	DCD	←	DTR	4
2	RTS	→	CTS	8
8	DTR	→	DSR	6



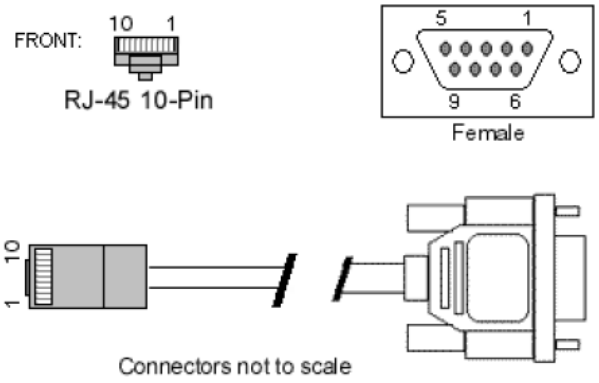
* Arrows indicate which direction the signal is flowing.

Notes:

- Altpin should be turned on when using this cable so that DTR will drive DCD (standard usage).
- If altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable utilizes the RTS signal of the PC terminal emulator for hardware flow control (RTS/CTS).

RJ45 10-pin to DB9F terminal emulator cable

From RJ-45	Signal	Direction	Signal	To DB-9
10	DCD	⇄	DTR	4
2	DSR			
6	RxD	←	TxD	3
5	TxD	→	RxD	2
9	DTR	⇄	DSR	6
			DCD	1
7	SG	↔	SG	5
3	RTS	→	CTS	8
8	CTS	←	RTS	7
4	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing

This cable can be purchased from Digi:

- 4' RJ-45 to DB9 Male Crossover: part #76000264

This cable can be purchased from Digi:

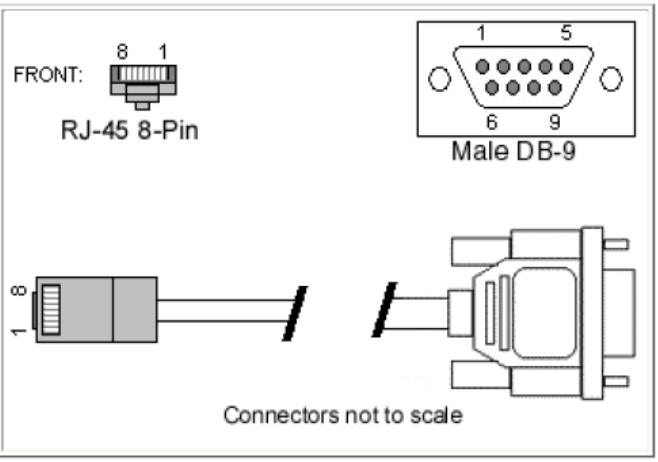
- 4' RJ-45 to DB9F crossover: part #76000645

Notes:

- Altpin should be turned off when using this cable.
- This cable utilizes the RTS signal of the PC terminal emulator for hardware flow control (RTS/CTS).

RJ45 (Altpin on) to DB9M terminal/printer cable

From RJ-45	Signal	Direction	Signal	To DB-9
3	GND	↔	GND	Shell
4	TxD	→	RxD	2
5	RxD	←	TxD	3
6	SG	↔	SG	5
7	CTS	←	DTR	4
1	DCD	←	RTS	7
2	RTS	→	CTS	8
8	DTR	→	DSR	6



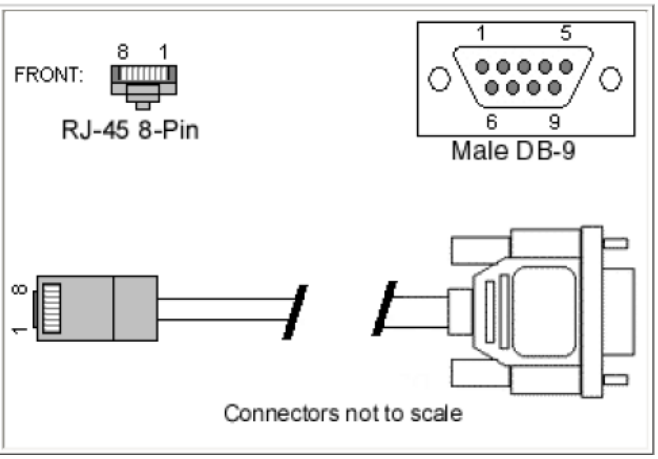
* Arrows indicate which direction the signal is flowing.

Notes:

- Altpin should be turned on when using this cable so that DTR will drive DCD (standard usage).
- If altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable utilizes the DTR signal of the terminal/printer for hardware flow control (RTS/CTS).
- EIA-232 cables cannot exceed 2500 pF.

RJ45 to DB9M terminal/printer cable

From RJ-45	Signal	Direction	Signal	To DB-9
3	GND	↔	GND	Shell
4	TxD	→	RxD	2
5	RxD	←	TxD	3
6	SG	↔	SG	5
7	CTS	←	DTR	4
1	DSR	←	RTS	7
2	RTS	→	CTS	8
8	DTR	→	DSR	6



* Arrows indicate which direction the signal is flowing.

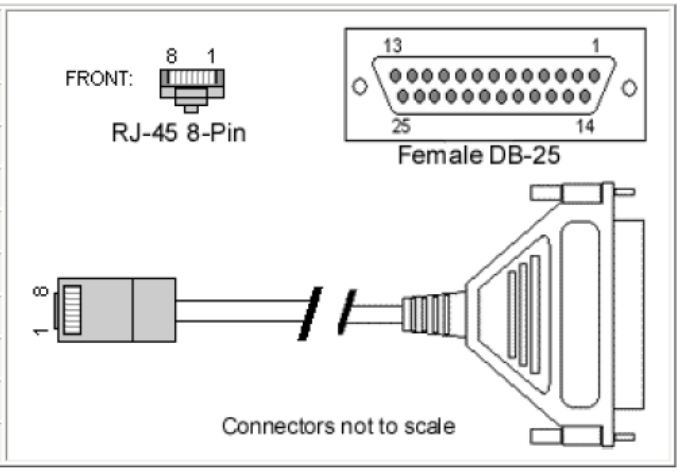
Notes:

- Altpin should be turned off when using this cable so that pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable utilizes the DTR signal of the terminal/printer for hardware flow control (RTS/CTS).

DB25 DTE/console/terminal/printer cables

RJ45 (Altpin on) to DB25F terminal emulator cable

From RJ-45	Signal	Direction	Signal	To DB-25
7	CTS	←	RTS	4
5	RxD	←	TxD	2
4	TxD	→	RxD	3
8	DTR	→	DSR	6
		→	DCD	8
6	SG	↔	SG	7
2	RTS	→	CTS	5
1	DCD	←	DTR	20
3	GND	↔	GND	Shell



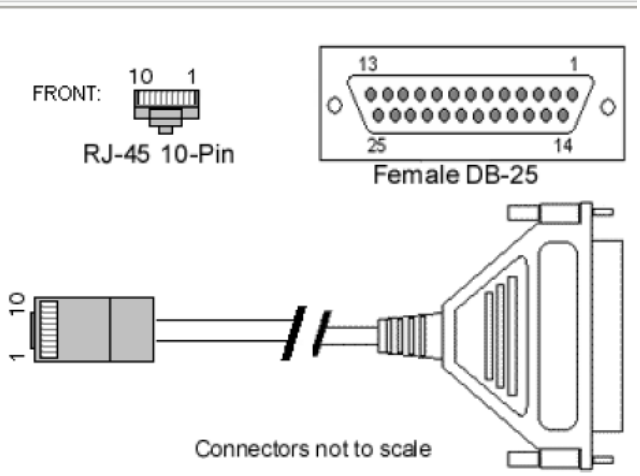
* Arrows indicate which direction the signal is flowing.

Notes:

- Altpin should be turned on when using this cable so that DTR will drive DCD (standard usage).
- If Altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.

RJ45 10-pin to DB25F terminal emulator cable

From RJ-45	Signal	Direction	Signal	To DB-25
10	DCD	←	DTR	20
2	DSR	→		
6	RxD	←	TxD	2
5	TxD	→	RxD	3
9	DTR	→	DSR	6
		←	DCD	8
7	SG	↔	SG	7
3	RTS	→	CTS	5
8	CTS	←	RTS	4
4	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

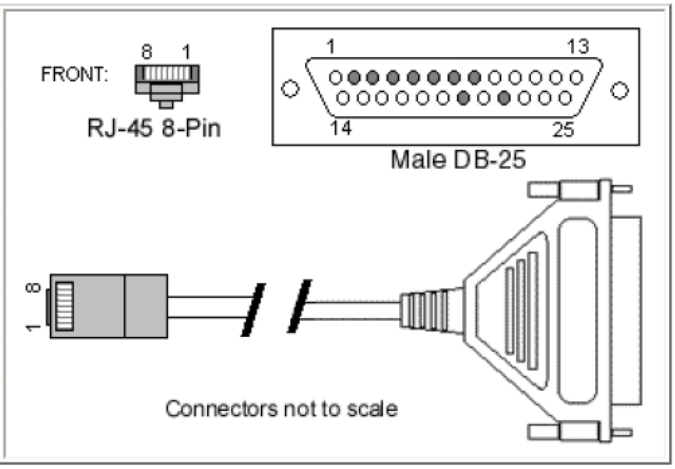
- 4' RJ-45 to DB25 Male Crossover: part #76000238

Notes:

- Altpin should be turned off when using this cable.
- This cable utilizes the RTS signal of the PC terminal emulator for hardware flow control (RTS/CTS).

RJ45 to DB25M terminal/printer cable

From RJ-45	Signal	Direction	Signal	To DB-25
1	DSR	←	RTS	4
5	RxD	←	TxD	2
4	TxD	→	RxD	3
8	DTR	→	DSR	6
			DCD	8
6	SG	↔	SG	7
2	RTS	→	CTS	5
7	CTS	←	DTR	20
3	GND	↔	GND	Shell



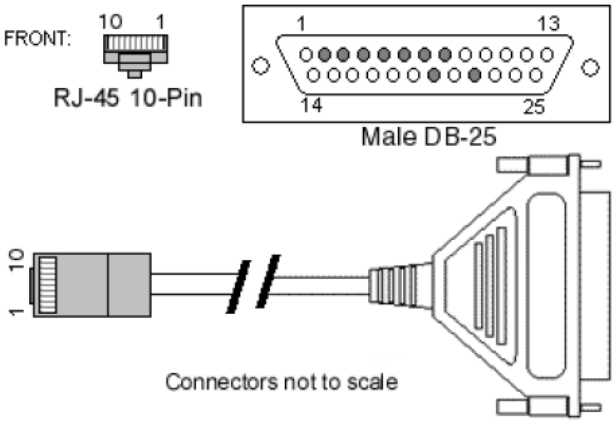
* Arrows indicate which direction the signal is flowing.

Notes:

- Altpin should be turned on when using this cable so that DTR will drive DCD (standard usage).
- If altpin is turned off, the hardware signal on RJ45 pin 1 becomes DSR instead of DCD. This alternative can be used if DCD is not required, and DSR is needed instead.
- This cable utilizes the DTR signal of the terminal/printer for hardware flow control (RTS/CTS).
- Okidata printers may use SSD (pin 11) instead of DTR (pin 20) on DB25 side of above diagram. If this is the case, the printer should be set to SSD+.

RJ45 10-pin to DB25M terminal/printer cable

From RJ-45	Signal	Direction	Signal	To DB-25
10	DCD	⇄	DTR	20
2	DSR			
6	RxD	←	TxD	2
5	TxD	→	RxD	3
9	DTR	⇄	DSR	6
			DCD	8
7	SG	↔	SG	7
3	RTS	→	CTS	5
8	CTS	←	RTS	4
4	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing.

This cable can also be purchased from Digi (part: RJ-45 10-pin to DB-25 - Part #76000238)

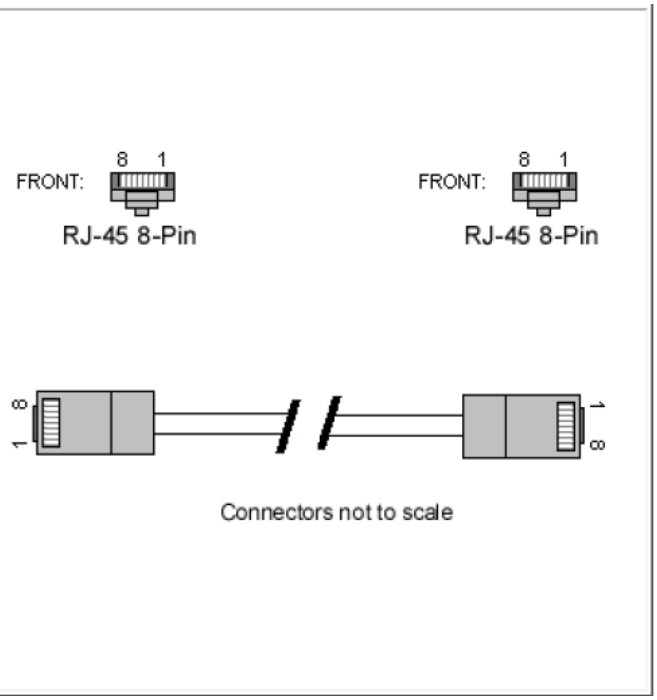
Notes:

- Altpin should be turned off when using this cable.
- This cable utilizes the DTR signal of the terminal/printer for hardware flow control (RTS/CTS).
- Okidata printers may use SSD (pin 11) instead of DTR (pin 20) on DB25 side of above diagram. If this is the case, the printer should be set to SSD+.

Digi-to-Digi Cables

Async RJ45 to RJ45 crossover cable - for cross-connecting Digi asynchronous ports together

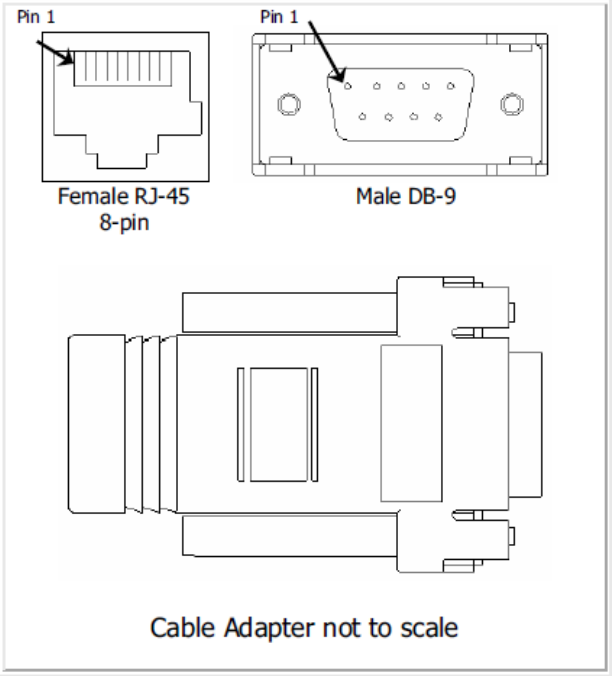
From RJ-45 Digi	Signal	Direction	Signal	To RJ-45 Digi
1	DSR	←	DTR	8
5	RxD	←	TxD	4
4	TxD	→	RxD	5
8	DTR	→	DSR	1
6	SG	↔	SG	6
2	RTS	→	CTS	7
7	CTS	←	RTS	2



* Arrows indicate which direction the signal is flowing.

RJ45 to DB9M modem adapter

From RJ-45	Signal	Direction	Signal	To DB-9
1	DCD	←	DCD	1
			DSR	6
2	RTS	→	RTS	7
3	Ground	↔	Ground	Shell
4	TxD	→	TxD	3
5	RxD	←	RxD	2
6	SG	↔	SG	5
7	CTS	←	CTS	8
8	DTR	→	DTR	4



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

- DB9M Modem Adapter: part #76000701

Notes:

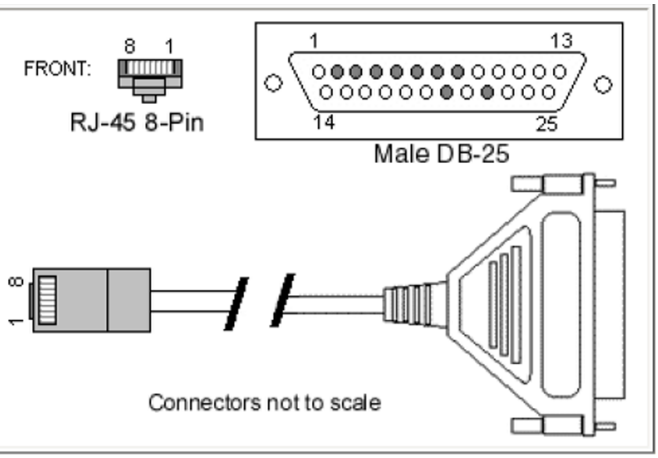
- All RJ45 cable adapters are 8-pin.
- When using this adapter with a modem or other applications that require DCD on pin 1, you must turn on altpin.
- If altpin is turned off, the hardware signal on pin 1 becomes DSR instead of DCD.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

DB25 and DB9 modem cables

RJ45 (Altpin on) to DB25M modem cable

The table shows the wiring diagram for an EIA-232 RJ45 8-pin connector, with Altpin on, to a DB25 modem cable.

From RJ-45	Signal	Direction	Signal	To DB-25
1	DCD	←	DCD	8
5	RxD	←	RxD	3
4	TxD	→	TxD	2
8	DTR	→	DTR	20
6	SG	↔	SG	7
2	RTS	→	RTS	4
7	CTS	←	CTS	5
3	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing.

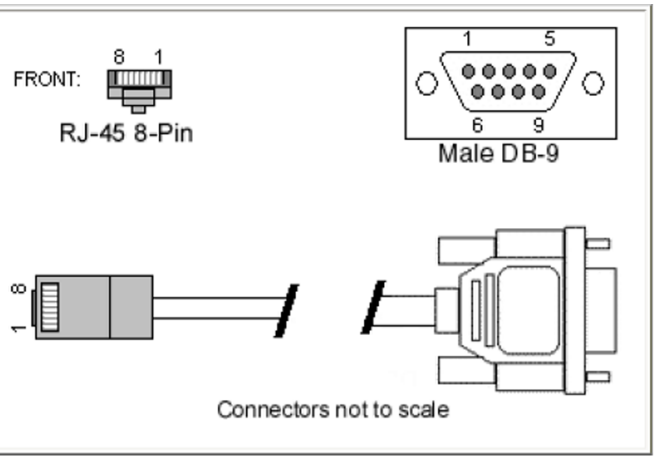
Notes:

- Altpin should be turned on when using this cable.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

RJ45 (Altpin on) to DB9M modem cable

The table shows the wiring diagram for an EIA-232 RJ45 8-pin connector, with Altpin on, to a DB9 modem cable.

From RJ-45	Signal	Direction	Signal	To DB-9
1	DCD	←	DCD	1
5	RxD	←	RxD	2
4	TxD	→	TxD	3
8	DTR	→	DTR	4
6	SG	↔	SG	5
2	RTS	→	RTS	7
7	CTS	←	CTS	8
3	GND	↔	GND	Shell



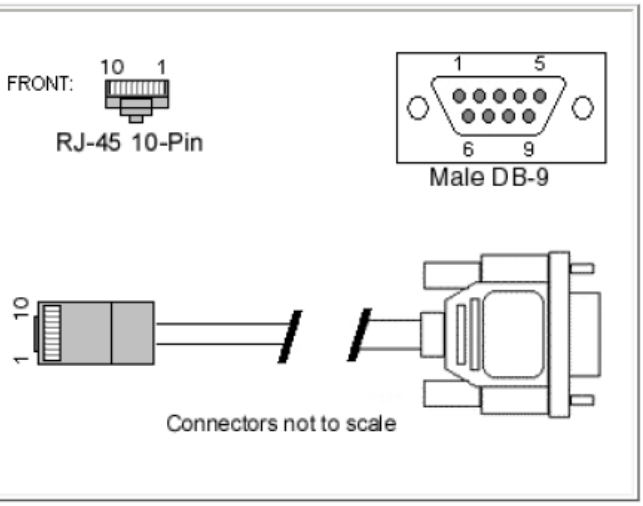
* Arrows indicate which direction the signal is flowing.

Notes:

- Altpin should be turned on when using this cable.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

RJ45 10-pin to DB9M modem cable

From RJ-45	Signal	Direction	Signal	To DB-9
10	DCD	←	DCD	1
6	RxD	←	RxD	2
5	TxD	→	TxD	3
9	DTR	→	DTR	4
7	SG	↔	SG	5
2	DSR	←	DSR	6
3	RTS	→	RTS	7
8	CTS	←	CTS	8
1	RI	←	RI	9
4	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

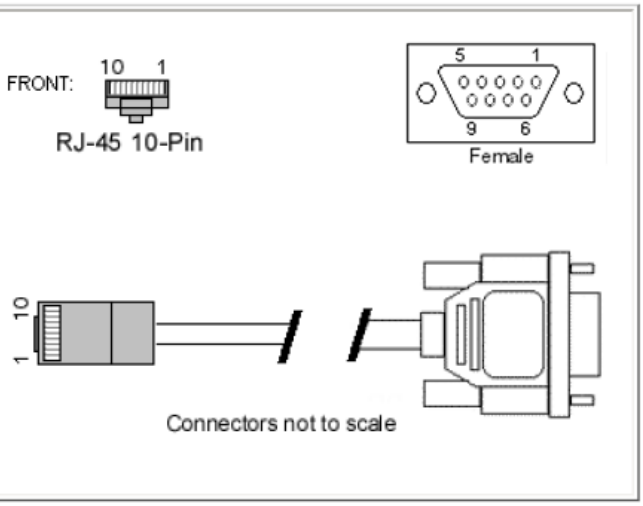
- 4' RJ-45 to DB9 Male straight: part #76000240

Notes:

- Altpin should be turned off when using this cable.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

RJ45 10-pin to DB9F modem cable

From RJ-45	Signal	Direction	Signal	To DB-9
10	DCD	←	DCD	1
6	RxD	←	RxD	2
5	TxD	→	TxD	3
9	DTR	→	DTR	4
7	SG	↔	SG	5
2	DSR	←	DSR	6
3	RTS	→	RTS	7
8	CTS	←	CTS	8
1	RI	←	RI	9
4	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

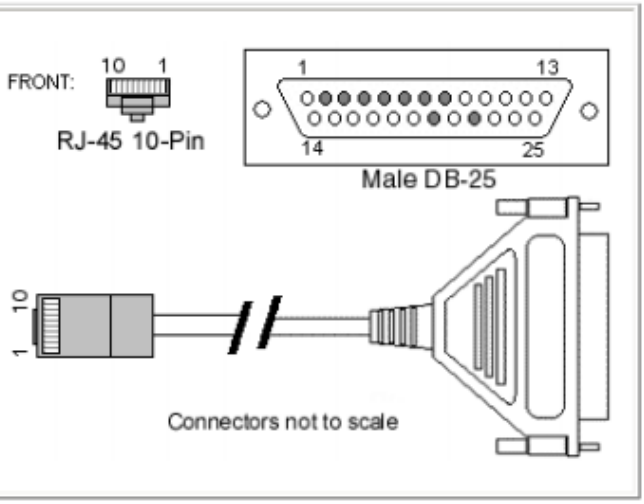
- 4' RJ-45 to DB9 Female straight: part #76000201

Notes:

- Altpin should be turned off when using this cable.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

RJ45 10-pin to DB25M modem cable

From RJ-45	Signal	Direction	Signal	To DB-25
10	DCD	←	DCD	8
6	RxD	←	RxD	3
5	TxD	→	TxD	2
9	DTR	→	DTR	20
7	SG	↔	SG	7
2	DSR	←	DSR	6
3	RTS	→	RTS	4
8	CTS	←	CTS	5
1	RI	←	RI	22
Shell	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

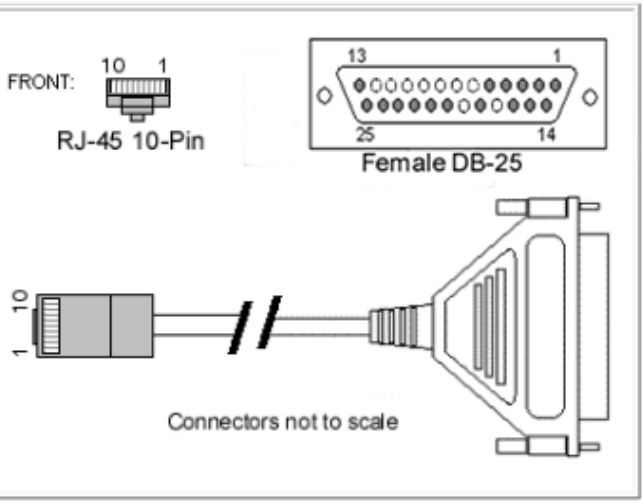
- 4' RJ-45 10-pin to DB25 Male Straight: part #76000195

Notes:

- Altpin should be turned off when using this cable.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

RJ45 10-pin to DB25F modem cable

From RJ-45	Signal	Direction	Signal	To DB-25
10	DCD	←	DCD	8
6	RxD	←	RxD	3
5	TxD	→	TxD	2
9	DTR	→	DTR	20
7	SG	↔	SG	7
2	DSR	←	DSR	6
3	RTS	→	RTS	4
8	CTS	←	CTS	5
1	RI	←	RI	22
Shell	GND	↔	GND	Shell



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

- 4' RJ-45 10-pin to DB25 Male Straight: part #76000199

Notes:

- Altpin should be turned off when using this cable.
- This cable utilizes the CTS signal of the modem for hardware flow control (RTS/CTS).

Specialty cables

Cisco console cables

Digi RJ45 to RJ45 cable adapters: 8-pin

RJ45 to RJ45 cable adapters can be purchased from Digi. These adapters consist of an 8-pin RJ45 plug connected to another 8-pin RJ45 plug with a crossover cable. These cables are used to connect the Digi devices to the serial console port of Cisco and Sun Netra devices. Pinout information and a graphic is included later in this chapter. See Digi RJ45 to RJ45 cable adapters: 8-pin for pinout and graphic information.

Part numbers for RJ45 to RJ45 8-pin crossover cable for Cisco & Sun Netra

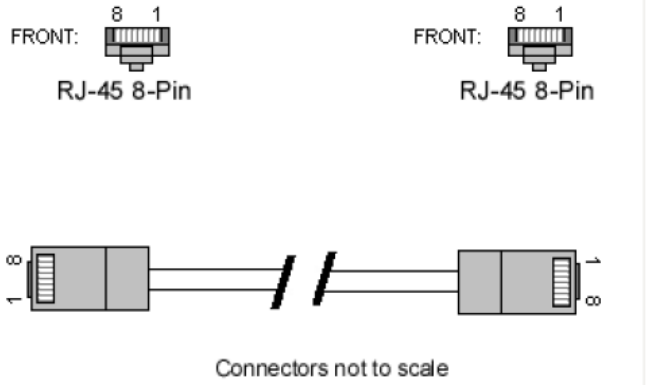
Cable description	Part #	Cable identifier
Cable RJ45 to RJ45 8-pin (single pack)	76000631	63000222-02

RJ45 (Altpin On) to RJ45 Cisco console adapter

The wiring diagram for an Altpin RJ-45 8-pin to a Cisco Console RJ-45 8-pin adapter cable is shown in the following table.

Table 1: EIA-232 Altpin RJ-45 to RJ-45

From RJ-45	Signal	Direction	Signal	To RJ-45 Cisco
1	DCD	←	DTR	2
5	RxD	←	TxD	3
4	TxD	→	RxD	6
8	DTR	→	DSR	7
6	SG	↔	SG	5
2	RTS	→	CTS	8
7	CTS	←	RTS	1
3	GND	↔	GND	4



* Arrows indicate which direction the signal is flowing.

This cable can be purchased from Digi:

- 6' RJ-45 to RJ-45 for Sun Netra/Cisco: part #76000631

Notes:

- Works for most current Cisco routers.
- Be careful not to swap cable ends. One end will go to DIGI and the other to the router.
- Altpin should be turned on when using this cable.