

I/O8+ Cable Specifications

The I/O8+ ports are wired for RS232 with RJ12 connectors. The pinouts of these are:

I/O8+ RJ12 Pinouts

Pin	Signal	Description
1	DCD	Data Carrier Detect (IN)
2	RXD	Receive Data (IN)
3	DTR/RTS	Data Terminal Ready/ Request To Send (OUT)
4	GND	Ground
5	TXD	Transmit Data (OUT)
6	CTS	Receive Hardware Flow Control

- If you only need TXD and RXD (i.e. you don't need modem control) you can connect RJ11 connectors to the I/O8+.
- Pin 1 (DCD) - modem connections only. The modem raises this signal to tell the I/O8+ that a carrier has been detected.
- Pin 3 (DTR/RTS) - if the port is used for a modem connection, this signal acts as DTR, i.e. it will be dropped when the I/O8+ wants the modem to disconnect. If the port is being used for a local connection with hardware flow control, the signal acts as RTS, i.e. it is normally high, but if the input buffers become full it will be dropped to tell the other end to stop sending data.
- Pin 6 (CTS) - this signal is only used when hardware handshaking is set. It is an input to the I/O8+ and is normally kept high. The device at the other end of the line will drop the signal if it wants the I/O8+ to stop sending data.

Loopback connector

RJ12	
DCD	1_
DTR	3_
CTS	6_
RXD	2_
TXD	5_

RJ12 to RJ12 converters

Simple terminal connection:

RJ12		RJ12	
I/O8+	RXD 2 <-----	TXD	
	GND 4 -----	GND	Terminal
	TXD 5 ----->	RXD	

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Terminal using hardware flow control:

	RJ12		RJ12	
	RXD	2	<-----	TXD
	DTR/RTS	3	----->	CTS
I/O8+	GND	4	-----	GND
	TXD	5	----->	RXD
	CTS	6	<-----	RTS

- Here pin 3 on the I/O8+ acts as an input hardware flow control pin. The pins used for hardware flow control may vary from terminal to terminal but pin 6 (output hardware flow control) on the I/O8+ port must be connected to the pin on the terminal which indicates that its buffer is full.
- Bi-directional hardware flow control is not supported under ISC UNIX. However, by using the modem device (ttyI**) you can obtain output hardware flow control.
- Some terminals need additional signals on the connector. These may not be supported by the I/O8+ or your cable. The normal way to overcome this is to loop back one of the output lines from the terminal into the required input. Refer to the documentation supplied with your terminal, or the supplier of the terminal, for information on which loopbacks, if any, are required.

Modem connection:

	RJ12		RJ12	
	DCD	1	<-----	DCD
	RXD	2	<-----	TXD
	DTR/RTS	3	----->	DTR
I/O8+	GND	4	-----	GND
	TXD	5	----->	RXD
	CTS	6	<-----	RTS

On modem devices, pin 3 on the I/O8+ is configured as the modem control pin (DTR) and there is no hardware flow control on input (RTS).

Serial printer connection:

Connections for a serial printer depend on whether the printer supports independent hardware flow control or not. Under ISC UNIX, which doesn't support independent hardware flow control, make sure the modem device is used for the port. Connections for a printer with hardware flow control are:

	RJ12		RJ12	
	RXD	2	<-----	TXD
	GND	4	-----	GND
I/O8+	TXD	5	----->	RXD
	CTS	6	<-----	DTR

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RJ12 to DB25 Converters

You can purchase Specialix RJ12 to DB25 converter cables from your supplier. If you want to make your own, connect the following pins:

Simple terminal connection:

	RJ12		DB25	
	RXD	2 <-----	2	TXD
I/O8+	GND	4 -----	7	GND
	TXD	5 ----->	3	RXD
				Terminal

RJ12 to DB25 (DCE) converter CIO8+F:

	DCD	1 <-----	8	DCD
	RXD	2 <-----	2	TXD
	DTR/RTS	3 ----->	5	CTS
		_>	6	DSR
RJ12	GND	4 -----	7	GND
	TXD	5 ----->	3	RXD
	CTS	6 <-----	4	RTS
				DB25

RJ12 to DB25 (DTE) converter CIO8+M:

	DCD	1 <-----	8	DCD
	RXD	2 <-----	3	RXD
	RTS/DTR	3 ----->	4	RTS
		_>	20	DTR
RJ12	GND	4 -----	7	GND
	TXD	5 ----->	2	TXD
	CTS	6 <-----	5	CTS
				DB25

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RJ12 to DB9 Converters

RJ12 to DB9 (DCE Male) converter:

	DCD	1	<-----	1	DCD	
	RXD	2	<-----	2	RXD	
	DTR/RTS	3	----->	4	DTR	
			_>	7	RTS	
RJ12	GND	4	-----	5	GND	DB9
	TXD	5	----->	3	TXD	
	CTS	6	<-----	8	CTS	

RJ12 to DB9 (DTE Female) PC converter:

	DCD	1	<-----	1	DCD	
	RXD	2	<-----	3	TXD	
	DTR/RTS	3	----->	6	DSR	
			_>	8	CTS	
RJ12	GND	4	-----	5	GND	DB9
	TXD	5	----->	2	RXD	
	CTS	6	<-----	7	RTS	