

# Building Custom Cables

This section contains cabling information and how to build your own custom cables for RocketPort controllers. To go to any of the following topics, merely click on the topic:

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## Building Custom Cables

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Use this subsection if you want to build customized cables for the Control RocketPort controllers.

Usually you can buy the correct cables from distributors and electronics stores for your controller. In some cases, your peripheral equipment may need custom cables.

Check your equipment to understand what kind of cable to use, Data Terminal Equipment (DTE) or Data Communications Equipment (DCE). All Control serial connectors are configured as DTE.

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## Shielding Cables

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The controller falls within the limits for a Class A computing device established by the FCC. To comply with these limits, the serial cables used to connect the controller to external devices should be shielded. The shield should be connected to a metal or metallized connector shroud on each end of the cable.

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## Using Modular Connectors

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The RJ45 and RJ11 connector is similar to the phone-jack type of connector. Both the connector and cable are easily available from your distributor or any electronics store. You may want to connect your peripherals using a D-shell type of connector to an RJ45 interface with a straight-through cable and an adapter that you build.

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## DTE to DCE Straight-Through Cables

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The following figure shows the most common types of DTE to DCE cables. This configuration also referred to as a modem cable, because it works with most modems.

**Note:** *If you have a DTE to DCE interface but are uncertain as to what signals are needed, you can use a full 25-wire cable. This cable is constructed like the following cable example, but in addition, all of the remaining pins are connected*

RocketPort Connector						Remote Connector		
Signal Name	DB25 Pins	RJ45 Pins	RJ11 Pins	DB9 Pins		DB9 Pins	DB25 Pins	Signal Name
TxD	2	4	3	3	→	3	2	TxD
RxD	3	5	4	2	←	2	3	RxD
RTS	4	1	N/A	7	→	7	4	RTS
CTS	5	8	N/A	8	←	8	5	CTS
DSR	6	7	N/A	6	←	6	6	DSR
GND	7	3	2	5	→	5	7	GND
DCD	8	6	5	1	←	1	8	DCD
DTR	20	2	1	4	→	4	20	DTR

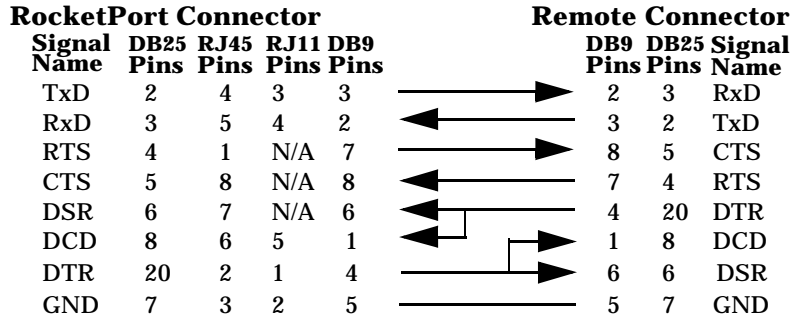
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## DTE to DTE Null-Modem Cables

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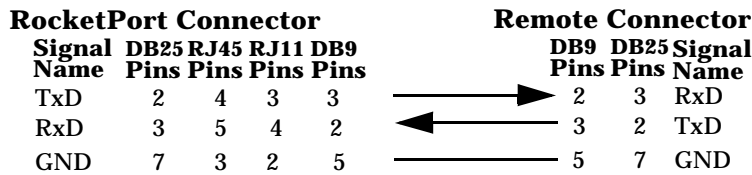
If you need RTS-CTS/DTR-DSR hardware flow control, you can probably use the following figure. Some equipment may require different connections for the control signals.

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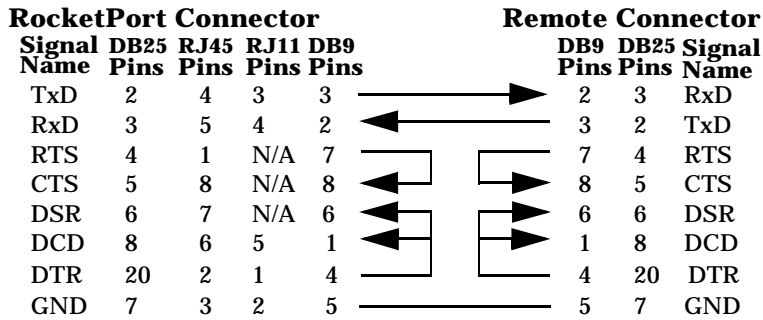
### DTE to DTE Data-Only Null Modem Cables

If no hardware flow is needed, use the following figure. With a 3-wire cable, software flow control must be used, if control is needed.



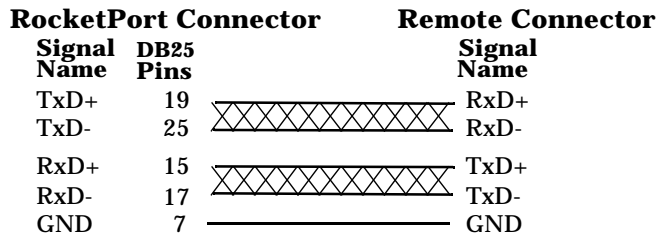
### DTE to DTE Control Loop-Back Cables

Some equipment may not require hardware handshaking, but may require that certain control signals are active before sending data.



## RS-422 DTE to DTE Cables

Most RS-422 communication links usually do not use hardware handshaking or signal ground lines. The following figure shows twisted-pair transmission lines that work in most cases.



## Pinouts for DB25 Connectors

Use the following table and figure for pinout information for all interface boxes and DB25 connectors on the Quadcable and Octacable.

**Note:** *The Quadcable, Octacable, and the RJ45 Rack Mount do not support RS-422 mode.*

Table 1. DB25 Connector Pinouts

Pin	RS-232 Signal	RS-422 Signal
1	Not used	Not used
2	TxD	Not used*
3	RxD	Not used*
4	RTS	Not used*
5	CTS	Not used*
6	DSR	Not used*
7	Signal ground	Signal ground*
8	DCD	Not used*
9 through 14	Not used	Not used
15	Not used	RxD+
16	Not used	Not used
17	Not used	RxD-
18	Not used	Not used
19	Not used	TxD+

Table 1. DB25 Connector Pinouts (Continued)

Pin	RS-232 Signal	RS-422 Signal
20	DTR	Not used*
21 through 24	Not used	Not used
25	Not used	TxD-

\* All RS-232 signals are present in RS-422 mode.

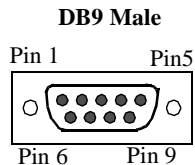


## Pinouts for DB9 Connectors

Use the following table and figure for pinout information for the DB9 connectors on the Quad/Octacable.

Table 2. DB9 Connector Pinouts

Pin	RS-232 Signal
1	CD
2	RxD
3	TxD
4	DTR
5	Signal ground
6	DSR
7	RTS
8	CTS
9	Not used



## Pinouts for RJ45 Connectors

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Use the following table and figure for pinout information for the RJ45 connectors on the RocketPort 4J.

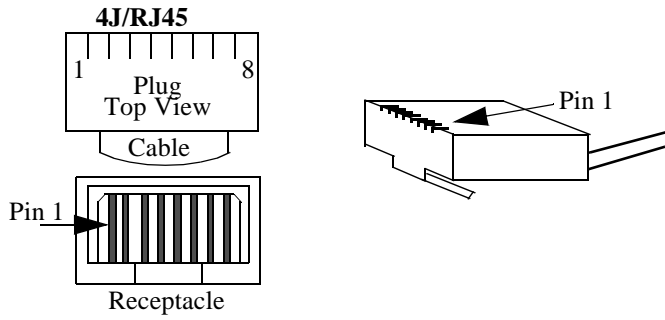
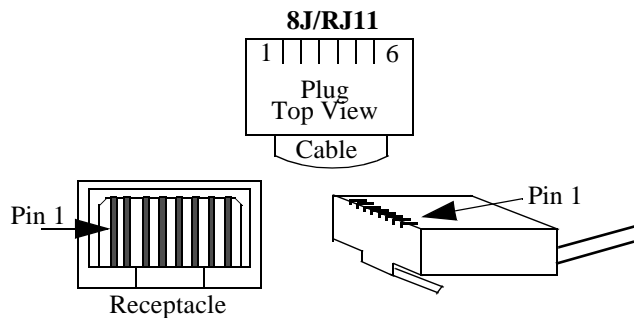


Table 3. RJ45 Connector Pinouts

Pin	RS-232 Signals 4J/RJ45
1	RTS
2	DTR
3	GND
4	TxD
5	RxD
6	DCD
7	DSR
8	CTS

## Pinouts for RJ11 Connectors

Use the following table and figure for pinout information for the RJ11 connectors on the RocketPort 8J.



**Table 4. RJ11 Connector Pinouts**

Pin	RS-232 Signals 8J/RJ11
1	DTR
2	GND
3	TxD
4	RxD
5	DCD
6	Not Connected
7	Not Applicable
8	Not Applicable