

# RocketPort<sup>®</sup> Plus Hardware Installation

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## Introduction

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This *Hardware Installation* document discusses the following information:

- Product overview
- [RocketPort terminology](#)
- [Before installing the hardware](#)
- [Installing the hardware](#)
- [Interface overview](#)
- Interface connectors and building loopback plugs
  - [DB9](#)
  - [DB25](#)
  - [RJ45](#)
- [Hardware specifications](#)
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- [Troubleshooting and creating diagnostics](#)
- [Contacting Technical Support](#)

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## Product Overview

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The RocketPort *Plus* series multiport serial card fits into the PCI slot of a personal computer, and uses a 44 MHz processor specifically designed to process asynchronous serial communications.

The RocketPort *Plus* series uses Application Specific Integrated Circuits (ASICs) technology to replace most hardware components, including:

- The processor
- Serial controller
- Bus interface logic and other miscellaneous logic

To eliminate memory mapping conflicts, the RocketPort *Plus* series is I/O mapped.

This *Hardware Installation* document discusses the following RocketPort *Plus* serial controllers:

Name	Ports	Interface Type
Quadcable*	4	Includes a fanout cable with standard DB25 or DB9 connectors.
Octacable	8	Includes a fanout cable with standard DB25, DB9, or RJ45 connectors.
2 Port	2	This model has 2 DB9 connectors on the mounting bracket. Cables are not included. Models are either RS-232 or SMPTE.

\* *Quadcables have the capability to be 8-port cards with an 8-port interface. Some drivers view the 4-port as an 8-port card.*

All RocketPort *Plus* series interfaces support RS-232. You can install up to four RocketPort *Plus* cards in one PC, for a total of 32 additional serial ports, and you can install a combination of PCI-bus and ISA-bus RocketPort cards.

For driver installation, see the [software installation and configuration](#) documentation or the driver [readme](#) file for your operating system.

**Note:** *Red underlined text denotes URL jumps.*

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## RocketPort Terminology

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For the purposes of the following discussions, these products are referred to as “RocketPort ISA” cards:

- RocketPort ISA-bus boards (any interface type including 4J, 8J, Quadcable, and Octacable)
- RocketPort 485

These products are referred to as “RocketPort PCI” cards:

- RocketPort PCI-bus boards (any interface type including 4J, Quadcable, and Octacable)
- RocketPort *Plus*
- RocketPort PCI 422

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## Before Installing the Hardware

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Read this subsection:

- If you already have one or more RocketPort ISA cards installed in your system.
- If you plan to install a combination of RocketPort ISA and RocketPort PCI cards at this time.

### Existing RocketPort ISA Cards Installed:

You must deconfigure and remove any existing RocketPort ISA cards before installing RocketPort PCI cards. After you have successfully installed the RocketPort PCI cards, reinstall the RocketPort ISA cards.

### Explanation:

I/O addressing for RocketPort PCI cards is handled automatically by the computer's BIOS when you first power up the computer after installing the cards.

I/O addresses for RocketPort ISA cards are set manually using DIP switches on the card. If you install an ISA card before installing a RocketPort PCI card, the ISA card addressing may interfere with the computer's ability to recognize the RocketPort PCI card which may prevent the PCI card from functioning properly.

### Additional Considerations:

If you are mixing RocketPort ISA and PCI cards, set the DIP switches on the ISA cards so that the first ISA card that you install is the "first" card for I/O addressing purposes, even if it is physically the second, third, or fourth card that you install.

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## Installing the RocketPort Hardware

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Hardware installation consists of:

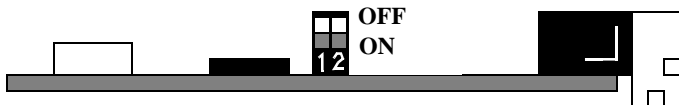
- Installing the card in the system. (Optionally setting the DIP switch for a port to DCE on the 2-port SMPTE card only).
- Connecting the peripherals.

**Note:** After installing the hardware, you must install the device driver for your operating system.

**Note:** If you are installing PCI and ISA RocketPort cards, install the PCI cards and driver before installing and configuring the ISA cards. See the [software installation and configuration](#) documentation or the driver readme file for information.

Use the following procedure to install the card.

1. For the 2 port SMPTE card only: to configure a specific port to DCE mode in SMPTE, set the switch for that port to ON.



**Note:** The default switch settings are set to OFF for DTE mode.

2. Turn off your computer.
3. Remove the system cover.
4. Select a PCI expansion slot.
5. Remove the slot cover.

**Note:** You may want to write down the model number and serial number of the card before installation.

6. Insert the card into the slot, seating it securely.
7. Reinstall the expansion slot retaining screw.

**Note:** You may want to leave the system unit cover off until the driver is installed and running, in case you need to change the DTE/DCE switch setting.

8. Attach the male end of the Quadcable or Octacable to the card.
9. Tighten the retaining screws.

**Note:** Quad and Octacable models support RS-232 exclusively.

10. Connect your peripheral devices.
11. Use the [software installation and configuration](#) documentation or device driver readme file to install the driver to complete your installation.

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## RocketPort Interface Overview

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The RocketPort series provides several interface options:

- Quadcable and Octacable fanout cables, which are available with the following configurations:
  - Quadcable DB25 and DB9.
  - Octacable DB25, DB9, and RJ45.

Octacable  
DB9

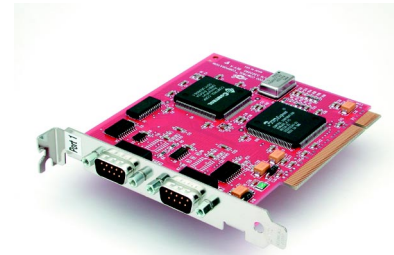


Quadcable  
DB25



**Note:** The RJ45 cable is not displayed.

- DB9 connectors on the mounting bracket

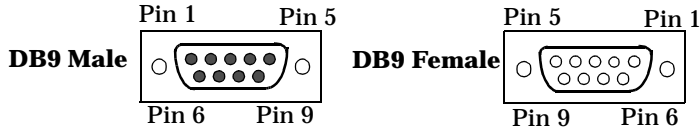


## DB9 Interface Connectors

There are Quadcable, Octacable, and two port models available with DB9 connectors on a fanout cable.

### DB9 Pinouts

Use this table and figure for information about the DB9 connectors used on the Quadcable, Octacable, and two port.



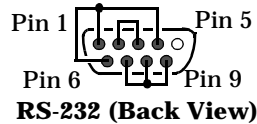
Pin	DB9 Male RS-232 Signal	DB9 Female SMPTE DTE	DB9 Female SMPTE DCE
1	CD	Chassis GND	Chassis GND
2	RxD	TxD-	RxD-
3	TxD	RxD+	TxD+
4	DTR	Signal GND	Signal GND
5	Signal GND	Not Used	Not Used
6	DSR	Signal GND	Signal GND
7	RTS	TxD+	RxD+
8	CTS	RxD-	TxD-
9	RI	Chassis GND	Chassis GND

### Building DB9 Female Loopback Plugs

Loopback plugs are used with the diagnostics to test serial ports.

Use this loopback plug with the Quadcable, Octacable, and two port models. Wire the following pins together:

- Pins 1 to 4 to 6
- Pins 2 to 3
- Pins 7 to 8 to 9



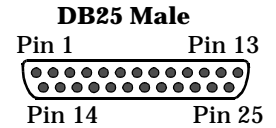
## DB25 Interfaces

Use the following subsections for DB25 connectors. Quadcable, and Octacable fanouts use male connectors.

### DB25 Pinouts

The following figures and table illustrate connector information for DB25 connectors.

Pin	RS-232 Signal
1	Not used
2	TxD
3	RxD
4	RTS
5	CTS
6	DSR
7	Signal ground
8	DCD
9 to 19	Not used
20	DTR
21	Not used
22	RI
23 to 25	Not used



### Building DB25 Female Loopback Plugs

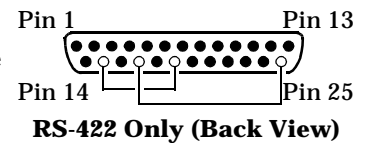
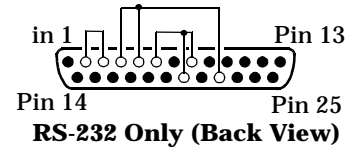
Loopback plugs are used with the diagnostics to test serial ports.

This loopback is used with Quadcable, Octacable, and the Surge interface boxes. Wire the following pins together for an RS-232 plug.

- Pins 2 to 3
- Pins 4 to 5 to 22
- Pins 6 to 8 to 20

Wire the following pins together for an RS-422 loopback plug (Surge interface box).

- Pins 15 to 19
- Pins 17 to 25

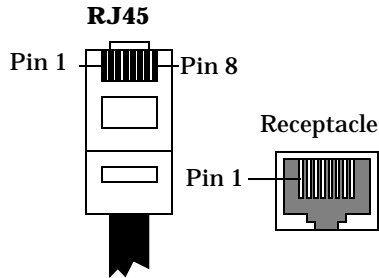


## RJ45 Interfaces

The Octacable model is available with RJ45 connectors.

### RJ45 Pinouts

Use the following table and figures for pinout information on the RJ connectors used on the Octacable.



Pin	RJ45
1	RTS
2	DTR
3	GND
4	TxD
5	RxD
6	DCD
7	DSR
8	CTS

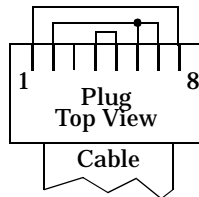
**Note:** Ring indicator is not supported on the RJ45 connector.

### Building RJ45 Loopback Plugs

Loopback plugs are used with the diagnostics to test serial ports.

This RJ45 loopback is used with the Octacable.

- Pins 4 to 5
- Pins 1 to 8
- Pins 2 to 6 to 7



## Specifications

The following tables illustrate RocketPort conditions and specifications.

Environmental Condition	Value
Air temperature: System on System off	0 to 40°C -20 to 85°C
Humidity (non-condensing): System on System off	8% to 80% 20% to 80%
Altitude	0 to 10,000 feet

Electromagnetic Compliance	Status
Emission (Octa/Quad only): Canadian EMC requirements CISPR-22/EN55022 Class A FCC PART 15: Class A	Yes
Emission (2 Port only): Canadian EMC requirements CISPR-22/EN55022 Class B FCC PART 15: Class B	Yes
Immunity (Octa/Quad and 2 Port): EN50082-2: 1995 IEC 1000-4-2: 1995 IEC 1000-4-4: 1995 IEC 1000-4-3: 1993	Yes
UL Recognized	Yes

RocketPort Plus Card	Specification									
Baud Rate (DTE)	200 to 921.6K bps									
<b>Note:</b> Baud rate is dependent upon hardware and operating system configuration.										
Bus interface	PCI									
Control by device driver: Data bits Parity Stop bits	7 or 8 Odd, Even, None 1 or 2									
Current Consumption Octa/Quad 2 Port	<table border="1"> <tr> <td><i>+5V</i></td> <td><i>+12V</i></td> <td><i>-12V</i></td> </tr> <tr> <td>510 mA</td> <td>100 mA</td> <td>160 mA</td> </tr> <tr> <td>180 mA</td> <td>40 mA</td> <td>50 mA</td> </tr> </table>	<i>+5V</i>	<i>+12V</i>	<i>-12V</i>	510 mA	100 mA	160 mA	180 mA	40 mA	50 mA
<i>+5V</i>	<i>+12V</i>	<i>-12V</i>								
510 mA	100 mA	160 mA								
180 mA	40 mA	50 mA								
Dimensions Octa/Quad 2 Port	6.5" by 4.2" 5.25" by 4.2"									
Heat output Octa/Quad 2 Port	19.74 BTU/Hr 6.75 BTU/Hr									
Interfaces Octa/Quad 2 Port	RS-232 RS-232 & SMPTE									
Interrupt ( <i>software selectable</i> )	None, 3, 4, 5, 9, 10, 11, 12, 15									

RocketPort Plus Card	Specification
Mean time between failures (MTBF) Qcta/Quad 2 Port	17.9 Years 101 Years
Power consumption Qcta/Quad 2 Port	5.79 W 1.89 W
RocketPort cards/system	4
Surge protection  Octa/Quad 2 Port	Provides ESD surge protection exceeding: 25 KV 15 KV
Weight Octa/Quad 2 Port	1 lb 10 oz. (with cable) 12 oz.

## FCC Notices

### Radio Frequency Interference (RFI) (FCC 15.105)

This equipment has been tested and found to comply with the limits for Class A digital devices pursuant to Part 15 of the FCC Rules.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### Labeling Requirements (FCC 15.19)

This equipment complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

### Modifications (FCC 15.21)

Changes or modifications to this equipment not expressly approved by Comtrol Corporation may void the user's authority to operate this equipment.

### Serial Cables (FCC 15.27)

This equipment is certified for Class A operation when used with shielded cables.

## Troubleshooting and Running Diagnostics

The first step to troubleshooting a problem is to determine that your RocketPort is functioning properly. To do so, you can create a bootable diskette.

You need two files to create a bootable floppy diagnostic diskette:

- The Rawrite utility that creates a bootable diagnostics diskette
- The diskette image file (\*.i).

You can find both files on the *Control Software and Documentation CD* or [download](#) them from the ftp site.

**Note:** If you have the Control Software and Documentation CD, you can use the Quick Start Card for procedures for your operating system.

### Creating a Bootable Diagnostics Diskette

This discussion outlines how to create a bootable diagnostics diskette. You can use our Web site <ftp://ftp.comtrol.com/bootdiag.htm> to:

- Download the necessary files.
- Easily find specific procedures for your operating system to create the bootable diskette.

### Diagnostics Overview

After you create a bootable diagnostic diskette, you can use the diagnostic program to:

- Confirm that the hardware is functioning.
- Determine resolutions to conflicts during installation.
- Provide you with the ability to stress test the cards.

For example, you may want to run the diagnostics overnight to evaluate a possible problem. You will need loopback plugs for each port that you want to stress test. If you need additional loopback plugs, you can use the appropriate *Building Loopback Plugs* discussion in this document to build additional loopback plugs.

### Running the Diagnostics

You can run the diagnostics using one of the following methods:

- Execute the `rocket.exe` file on the diskette in a native DOS environment.

**Note:** The diagnostic occasionally fails when running in Windows MS-DOS<sup>®</sup> windows.

- Boot the system from diagnostics diskette you created.

Use the following procedure to run the diagnostics:

1. Restart your machine in DOS mode or insert the diagnostics diskette.
2. Execute `rocket.exe` or start the machine.  
The diagnostic starts automatically,
3. Verify that the system locates the RocketPort card.
4. Follow the remainder of the on-line instructions.

If the diagnostics did not pass you may want to use the following discussion to diagnose your problem.

## Resolving Failures

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If the diagnostics could not find the card:

- Turn off the power and reseal the card into the slot.
- Check for proper cable connections.
- Check for proper installation of the loopback plug.

Try running the diagnostics again. If they fail again, you may have a bad port. [Contact Technical Support](#).

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## Technical Support

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Control has a staff of support technicians available to help you. Before you call, please have the following information available:

Item	Your System Information
Model number	
Serial number	
Interface type	
Operating system type and release	
Device driver version	
PC make, model, and speed	
List other devices in the PC and their addresses	

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Control	Headquarters	Europe
Phone	(763) 494-4100	+44 (0)1869 323220
FAX	(763) 494-4199	+44 (0)1869 323211
E-mail	<a href="mailto:support@comtrol.com">support@comtrol.com</a>	<a href="mailto:support@comtrol.co.uk">support@comtrol.co.uk</a>
Web support	<a href="#">Searchable Solution Database and FAQs</a>	
Web site	<a href="http://www.comtrol.com">www.comtrol.com</a>	<a href="http://www.comtrol.co.uk">www.comtrol.co.uk</a>
FTP site	<a href="ftp://ftp.comtrol.com">ftp.comtrol.com</a>	

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**2000046 Rev. D**