

# RocketPort<sup>®</sup> and RocketModem Series Driver Installation with Windows<sup>®</sup> 2000

# How to Use this Document

You can use the interactive <u>Table of Contents</u> to locate the information you need.

## **Driver Requirements**

This document discusses installing and configuring the RocketPort and RocketModem device driver for the Windows 2000 operating system. The RocketPort or RocketModem requires at least one host server running Windows<sup>®</sup> 2000.

Note: This driver supports only one ISA adapter.

For hardware specific information or the product overview, see the <u>Hardware Installation</u> documentation that is available on the Comtrol media (diskette or CD) shipped with your product or download the current version from the ftp/web site.

<u>Driver updates</u> can be downloaded at no charge from the Comtrol ftp/web site. Always check the web or ftp sites to make sure that you have the current driver and documentation. Software downloaded from the ftp/ web site are self-extracting zipped files that you must extract before installing.

# **Driver Features**

This driver has the following features:

- Can be installed on multiple servers.
- Supports up to 128 RocketPort or RocketModem ports per server.

*Note:* The critical limit is the number of ports your server can support. In most applications, this is defined by the number of RAS port supported, which is typically 256 ports per primary server.

• Allows you to inter-mix RocketPort and RocketModem ports.

# **Upgrading from Windows 95/98 or Windows NT**

If you are upgrading from another operating system, follow these steps:

Note: Do not use the Update Driver feature in the Device Manager to upgrade the driver.

- 1. Remove the driver from the Windows 95/98 or Windows NT operating system following the procedures outlined in that <u>software installation documentation</u>.
- 2. Turn off the system, remove the boards, and set them aside.
- 3. Upgrade your system to Windows 2000.
- 4. Install the adapters and turn on the system. If one is an ISA adapter, <u>set the DIP switch</u>. **This driver supports only one ISA adapter**.

Note: If you need information about re-installing adapters, see the Hardware Installation documentation.

5. Use the *Installing the Driver* and *Removing or Disabling the Adapter in Windows 2000* subsections to set up the new driver.

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# **Removing or Disabling the Adapter in Windows 2000**

Adapters cannot be removed through the Main Setup window. Use the following procedure to remove adapters:

- 1. On the Windows desktop, right-click on the My Computer icon and select Manage.
- 2. Double-click on the Device Manager.
- 3. Open the Multi-port serial adapters entry (click the [+] button to expand the list).
- 4. Right-click on the adapter you want to disable or uninstall.
- 5. Select on of the following:
  - Disable to disable the device in the current hardware profile but not remove it. To update the driver from the ftp/web site, you must first Disable the driver and then use the Device Manager to Update the driver.
  - Uninstall to completely remove the adapter.
  - Properties to display the Device Properties window.

*Note:* If you prefer, you can disable or enable the adapter by changing the *Device Usage* field on the Device Properties window, General tab.

6. Exit the Device Manager window and resume normal operations.

## **Installing the Driver**

Adapters cannot be added through the Device Manager or Main Setup window.

### **PCI Adapters**

The computer's Plug and Play feature should recognize the PCI-bus adapters, which should automatically launch the Add/Remove Hardware wizard. If Windows 2000 does not recognize your PCI adapter, or if you have installed an ISA-bus, follow the procedure below.

To install the driver for a PCI adapter, install the adapter using the hardware installation documentation. The system should automatically install the driver. You may need to <u>configure device or port properties</u>.

If you want to upgrade to the latest driver from the ftp site, <u>upgrade the driver</u> before configuring the device or port properties.

### **ISA Adapters**

Before installing the driver, you should <u>install the hardware</u> and restart the system. To install the driver, use the Add/Remove Hardware wizard.

- *Note:* This driver only supports one ISA adapter. If installing an ISA board, you must set the I/O DIP switch and you may need to change the software setting. See <u>Setting I/O Addresses and DIP Switches (ISA Only)</u>, if necessary.
- 1. On the Windows desktop, right-click the My Computer icon.
- 2. Click Properties.
- 3. Select the Hardware tab.
- 4. Select the Hardware Wizard button.
- 5. Select the Next button when the *Add/Remove Hardware* wizard appears.
- 6. Select the Add/Troubleshoot a device option and the Next button.
- 7. Select the Add a new device option and the Next button.
- 8. Select the No, I want to select the hardware from a list option and the Next button.
- 9. Highlight **Multi-port serial adapters** when asked to choose the type of hardware to install and the **Next** button.

Note: All Comtrol products are considered multi-port serial adapters.

10. Select Comtrol Corporation as the manufacturer, the appropriate Comtrol product you wish to install, and the Next button.

Add/Remove Hardware Wizard		
Select a Device Driver Which driver do you want to i	nstall for this device?	
	nd model of your hardware device and then click he driver you want to install, click Have Disk. Models:	Next. If you
Control Corporation Digi International Equinox Systems Inc. Specialix International Ltd. Stallion Technologies	RocketHUB 4 Port Device RocketHUB 8 Port Device RocketModem 4 Port, ISA-BUS RocketModem 8 Port, ISA-BUS RocketModem II 4 Port, PCI-BUS	
		Have Disk
	< <u>B</u> ack <u>N</u> ext >	Cancel

11. Select the Next button at the Start Hardware Installation screen.

*Note:* It may take up to several minutes for Windows 2000 to load the driver.

12. Select the Finish button to complete the driver installation process.

After you complete driver installation, additional steps may be necessary to configure the ports through the Main Setup tab.

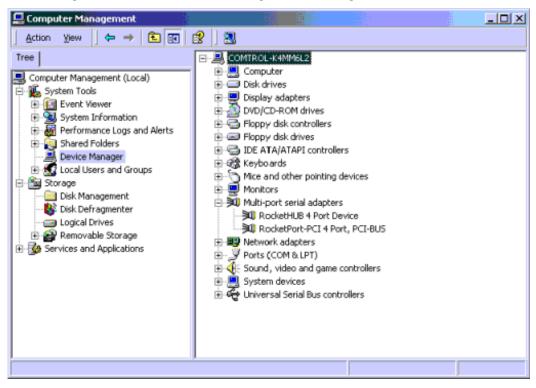
# **Upgrading the Driver**

Use this procedure if you want to upgrade the driver in the Windows 2000 operating system. An upgraded driver may be available from the following:

- Downloaded from the Comtrol ftp/web site.
- Contained on Comtrol media shipped with the product.

Before you can install a more current version of the driver, first remove the existing driver and the adapter. Use the following procedure to install a new driver:

- 1. Unzip the file into a new subdirectory, for example: \Comtrol.
- 2. On the Windows desktop, right-click on the My Computer icon and select Manage.
- 3. Double-click on the Device Manager.
- 4. Open the Multi-port serial adapters item.
- 5. Highlight the device for which you want to update the driver, right-click, and select **Disable**. *Note: All Comtrol products are considered multi-port serial adapters.*



6. Select Yes when this pop screen appears:

RocketPo	ort-PCI 4 Port, PCI-BUS					×
⚠	Disabling this device will cause i	t to stop f	unctioning	. Do you real	ly want to disable	e it?
	<u>Y</u> es		<u>N</u> o	]		

- 7. Double-click on the disabled device and select the Driver tab.
- 8. Select the Update Driver button.

9. Select the Next button to start the Upgrade Driver wizard.

Upgrade Device Driver Wizard	
	Velcome to the Upgrade Device Driver Wizard his wizard helps you upgrade a device driver for a andware device.
	< Back Next > Cancel

10. Select the Display a list of the known drivers for this device so that I can choose a specific button and the Next button.

Upgrade Device Driver Wizard
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.
This wizard upgrades drivers for the following hardware device:
RocketPort-PCI 4 Port, PCI-BUS
Upgrading to a newer version of a device driver may add functionality to or improve the performance of this device.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< <u>B</u> ack <u>N</u> ext > Cancel

11. Select the Have Disk button, browse to the location of the driver file that you extracted, and then select the Ok button.

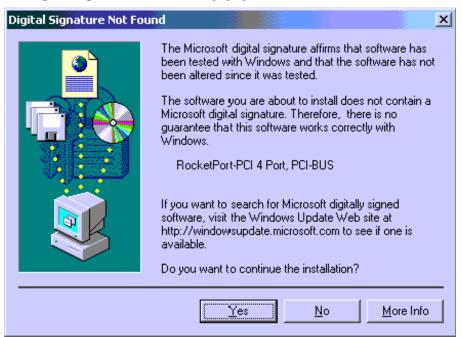
Upgrade	Device Driver Wizard			
	ct a Device Driver /hich driver do you want to install for this c	levice?		
»Ú	Select the manufacturer and model of yo have a disk that contains the driver you u	ur hardware device want to install, click	and then c Have Disk.	lick Next. If you
	Port-PCI 4 Port, PCI-BUS Port-PCI 4 Port, PCI-BUS Version: 4.34.0.	0 [10/19/1999]		
-	w <u>c</u> ompatible hardware w <u>a</u> ll hardware of this device class			<u>H</u> ave Disk
		< <u>B</u> ack	<u>N</u> ext >	Cancel

- 12. Highlight the device and select the Next button to install the driver with the default settings.
- 13. Select Yes to the Update Driver Warning popup window.

Update D	Priver Warning						×
⚠	Installing this device driv compatible with your har work correctly and your Do you want to continue	dware. If the computer migh	driver i: ht becom	s not comp	atible, your hard	dware will no	t
	E	<u>Y</u> es		No			

14. Select the Next button at the Install Device Driver screen.

15. Select Yes at the "Digital Signature Not Found" popup screen.



- 16. Select the Finish button to complete the driver installation process.
- 17. Select the Close button when you return to the Properties screen.
- 18. Select Yes to this popup screen to restart your system.

System 9	Settings Change
?	Your hardware settings have changed. You must restart your computer for these changes to take effect.
	Do you want to restart your computer now?
	<u>Y</u> es <u>N</u> o

After you complete driver installation, additional steps may be necessary to configure the ports through the Main Setup tab.

# Accessing the Main Setup Tab

- 1. On the Windows desktop, right-click the My Computer icon and select Manage.
- 2. Double-click on the Device Manager.
- 3. Click the [+] button for the adapter under Multi-port serial adapters to expand the view.
- 4. Highlight the adapter that you want to access.
- 5. Select Action --> Properties.
- 6. Select the Main Setup tab.



*Note:* For information on using port options, use the context-sensitive help in the Main Setup or Options screens.

# **Changing Device Properties**

You can change the following device properties:

- Device name
- Starting COM port number.

To change device properties, follow this procedure to access the Device Setup tab:

- 1. <u>Access the Main Setup screen</u>.
- 2. Highlight the device name and select **Properties**.
- 3. After making your changes, select the Ok button and follow any other driver prompts.
  - *Note:* Use the Help button if you need detailed information about procedures or use context-sensitive help for any field.

COM Port Range   Starting COM Port:   COMS9	Summary RocketPort - 4 PCI Name: RocketPort Plus	evice Properties ?
Summary   RocketPort - 4 PCI   Name: RocketPort Plus	Summary RocketPort - 4 PCI Name: RocketPort Plus	Device Setup
Summary RocketPort - 4 PCI Name: RocketPort Plus	Summary RocketPort - 4 PCI Name: RocketPort Plus	DOCKETDODT
RocketPort - 4 PCI Name: RocketPort Plus	COM Port Range	
Name: RocketPort Plus	Name: RocketPort Plus	
COM Port Range	COM Port Range	
		Name: RocketPort Plus

# **Configuring Device Properties**

You can optionally configure the following Device Properties:

- Verbose event log for diagnostic purposes.
- Scan rate to adjust latency for timingcritical applications.
- Enable RS-485 mode.

Use the following procedure:

- 1. Access the Main Setup screen.
- 2. Select the Options tab.
- 3. Enable the features you want to use.
- 4. If you enable the RS-485 feature, an RS485 tab appears behind the COM Port Properties tab that you may need to configure.

*Note:* Use the Help button if you need detailed information about procedures or use context-sensitive help for any field.

RocketPort-PCI 8 Port, PCI-BU	IS Properties		? ×
General   Main Setup Options	Driver Reso	urces	
TroubleShooting Options			
Verbose Event Log			
Performance Adjustments			
<u>S</u> can Rate(ms): <u>10(Defau</u>			
RS-485			
Enable <u>B</u> S-485 options for	or all devices		
(NOTE: External RS-232			
required when stardard p	orts are used in r	15-485 mode)	
Defaults			
Derauks			
	OK	Cancel	Help

# **Configuring Port Properties**

You can also configure specific port properties for this adapter:

- Override and lock baud rate
- Timeout on transmit data
- Map CD to DSR
- Map 2 stop bits to 1
- Wait on physical transmission
- Emulate modem hardware RING signal
- Clone all Comtrol ports for this server

Use the following procedure to access the Port Properties tab:

- 1. Access the Main Setup screen.
- 2. Highlight the port you want to configure and select the **Properties** button.
- 3. Enable the features you want to use and select the OK button. To configure all ports on the *adapter* with the same features, select Clone.

*Note:* Use the Help button if you need detailed information about procedures or use context-sensitive help for any field.

# **Adding Additional Adapters**

Install the adapter and configure the ports. *Note: This driver supports only one ISA adapter.* 

M19 Properties			21
Port Setup   RS495			
General Diverside and jock baud rate to: Emeout on transmit data on por Map CD to DSR Map 2 stop bits to 1 Wait on physical transmissio Emulate modern hardware R	n before co	1999 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	
Clone Goply these settings to all po	xia.		
Defasts			
	OK.	Cancel	Help

# Troubleshooting

If you are having trouble with a RocketPort or RocketModem, try the following.

Note: Most customer problems reported to <u>Technical Support</u> are traced to cabling or network problems.

- 1. Verify that you are using the correct types of cables in the correct places and that all cables are tightly connected.
- 2. If ISA, make sure that you set the I/O DIP switch correctly.
- 3. Enable the Verbose Event Log feature under the Setup Options tab and then reboot the server.
- 4. Verify that you are addressing the port correctly. In many applications, device names above COM9 require the prefix \\.\ to be recognized. For example, to reference COM20, use \\.\COM20 as the file or port name.
- 5. Use the <u>Test Terminal</u> program (wcom32.exe) to troubleshoot communications on a port-by-port basis.
- 6. Use the <u>Port Monitor</u> program (portmon.exe) to check for errors, modem control, and status signals. In addition, it provides you with raw byte input and output counts.
- 7. Use the <u>Peer Tracer</u> program (peer.exe) to trace driver events.
- 8. <u>Remove</u> and reinstall the latest released driver from the <u>ftp site</u>.

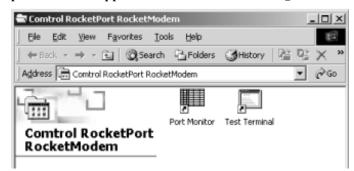
## Adding a Program Group Under the Start Button

Perform the following procedure if you want to add a program group under your Start button.

- 1. <u>Access the Main Setup screen</u>, highlight the adapter and select the Properties button.
- 2. Change the name of the adapter or change a parameter and select the Ok button.
  - *Note:* Changing the adapter name in the Main Setup screen does not change the device's name in the Device Manager. If necessary, reset the parameter back to it's original value after completing <u>Step 4</u>.
- 3. Select Yes when this popup screen appears:

Comtrol RocketPort/RocketModem Setup	×
Would you like to add program manager menu selections for the u	utilities?.
Yes No	

4. Close the Program group. Now it will appear under the Start ---> Programs button.



### **Using Test Terminal**

WCOM32 is a terminal program that enables you to open a port, send characters and commands to the port, and toggle the control signals.

*Note:* WCOM32 will **not** work on ports used by RAS **if Remote Access Service is running** or any other application is using the port. If you are using RAS, you must stop the service before starting WCOM32 to test RAS COM ports. To test ports that are not used by RAS, you do not need to stop RAS.

1. To start WCOM32, select Test Terminal from the <u>Comtrol program group</u>. The program window displays:

Ξw	com - Te	at Termin	al			_ 🗆 X
Port	$\underline{\underline{S}} ettings$	<u>W</u> indow	Help			

- 2. Select **Open Port** from the **Port** menu. A list of possible COM port numbers displays.
- 3. Select the COM port you want to test.

If the COM port does not exist or if it is currently being used by another program, a *Create File Error* message displays.

If the COM port is available, a terminal window pops up:

Wcom - Test Terminal	
Port Settings Window Help	
СОМЗ	- 🗆 ×
CTSDSRCD ri RTSDTR loop	
abcdefghijklmnopqrstuvwxyz ABCD	
abcdefghijklmnopqrstuvwxyz ABCDE abcdefghijklmnopqrstuvwxyz ABCDEF	
abcdefghijklmnopgrstuvwxyz ABCDEFG	
abcdefghijklmnopgrstuvwxyz ABCDEFGH shodefghijklmnopgretuwcyz ABCDEFGH	

*Note:* Notice the <loop> button in the terminal window. If this option is activated, it is green and uppercase (IDDE), the COM port internal loopback feature is activated, and the data is returned by the COM port hardware. If this option is deactivated, it is gray and lowercase (IDDE), the internal loopback is deactivated, and the data is sent out the COM port.

### **Testing a RocketPort**

Use the following procedure to test a port.

Note: RocketModem: use the subsection called <u>Testing a RocketModem</u>

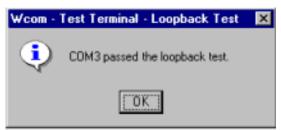
- 1. Place a loopback plug on the COM port you are testing. Make sure all connectors are seated firmly and that the loop button is off.
- 2. From the Port menu, select Send Test Data. The program sends out a repeating data stream.

*Note:* To stop the data stream, select Send Test Data again.

- If the loopback plug is in place and the port is working correctly, the test data should be echoed back to the screen.
- If the loopback plug is **not** in place or the port is not working correctly, no data or garbled data is echoed back to the screen.

*Note:* If no characters appear, try putting the loopback plug on an adjacent port. It may be that you have the ports mixed up.

3. If further testing is required, select Loopback Test from the Port menu. If the loopback plug is in place and the port is working correctly, the system should return the message "Passed."



If the loopback plug is not in place or the port is not working correctly, the system will return the message "Failed."

- 4. If the port has failed in Step 2 or 3, and the RocketPort is equipped with an external interface box or fanout cable, click the loop button to switch the internal loopback feature on.
- 5. Repeat Steps 2 and 3. If the port now passes the tests, the fault may lie in the interface box or fan-out cable. Contact Comtrol technical support for more assistance.

### **Testing a RocketModem**

The following test may be used to ensure functionality of the RocketModem.

Note: Make sure the loop button is off for the following tests.

### Test 1: The following steps check to see if the modem responds.

- 1. Type atz. This should return an OK.
- 2. Type at&v. This should display the modem configuration.

### Test 2: The following test calls from the modem to an ordinary telephone.

- 1. Connect the modem to a phone line.
- 2. Enter **atdt** *phonenumber*. The telephone should ring.

Where *phonenumber* is the phone number of an ordinary telephone.

### Test 3: This example has one modem call another modem.

- 1. Enter +++**ath** to hang up.
- 2. Connect two modems to phone lines, open two Test Terminal sessions, and use one modem to call the other. Send typed characters from one modem to the other.

### Test 4: You can call into a host system and use Test Terminal to emulate an ANSI terminal session.

### **Modem Control Signals**

The terminal window displays the modem control signals as gray or green lights at the top of the window. The first four are inputs:

### cts dsr cd ri

The lights are green if they are turned on, or gray if off. The text on the light also changes from uppercase (CTS), which is on, to lowercase (cts), which is off.

Note: Ring Indicator (RI) is available on the RocketPort Plus only.

The next two lights are outputs: **ATSDTR** 

# *Note: RocketPort*: If you have a loopback plug connected and you click on one of the outputs, the corresponding signal is sent to the input and the input lights should toggle accordingly.

You can use RTS and DTR to send flow-control signals to the modem. However, this does not register on the input lights.

The rightmost light is the loop indicator: **loop** 

If this is on, the COM port internal loopback feature is activated and any information or code entered in the terminal window loops back through the COM port circuitry. If this is off, the COM port internal loopback is deactivated, and any information or code entered in the terminal window is sent out of the port.

### **Using Port Monitor**

The Port Monitor program (portmon.exe) offers a summary of all RocketPort or RocketModem statistics in one spreadsheet view. It also enables you to verify operation of all RocketPort or RocketModem ports from a single window.

The Port Monitor display follows the familiar spreadsheet model: each COM port is a horizontal row, and each vertical column displays a variable or value for the respective COM port. For definitions of the abbreviations used, see the *Port Monitor Variable List*.

Port Monitor can also produce statistics and reports that can help you verify the operation of the COM ports and connected peripherals.

Some immediate feedback includes:

- The state of the modem control and status signals
- **Open ports**
- Raw byte input and output counts obtained from the driver
- Port errors

The available statistics include:

- Instantaneous characters per second (CPS) calculations
- Minute, hour, and day CPS averages and peaks
- Carrier detect (CD) signal runtime and transition count

Reports can be automatically generated on an hourly and/or daily basis, and can cover all ports collectively or a separate report for each port. You can also set how often the values are recalculated, fine-tuning thoroughness against system efficiency, and automatically run external batch files to perform additional processing and analysis.

### **Starting Port Monitor**

To run Port Monitor, select Port Monitor from the Comtrol program group.

The monitor window displays:

Note: To change the appearance of the screen, see the following discussion.

Once the monitor window displays, Port Monitor is active and collecting data. If any cumulative data has been saved from previous sessions, it is automatically brought in and used.

Port Monitor continues to run and collect data until you terminate it, at which point all accumulated data is automatically saved for use in the next session.

E Port M	Port Monitor									
<u>Ele E</u> dt	Help									
Device	Oper	CTS	DSI	CD	RT	DTI	TxTotal	RxTotal	TxCPSInst	<b>RxCPS</b>
COM3	Off	Off	Off	Off	Off	Off	0	0	0	0
COM4	Off	Off	Off	Off	Off	Off	0	0	0	0
COM5	Off	Off	Off	Off	Off	Off	0	0	0	0
COM6	Off	Off	Off	Off	Off	Off	0	0	0	0
COM7	Off	Off	Off	Off	Off	Off	0	0	0	0
COM8	Off	Off	Off	Off	Off	Off	0	0	0	0
COM9	Off	Off	Off	Off	Off	Off	0	0	0	0

### **Changing Screen Appearance**

While Port Monitor is running, there are a number of commands and controls that change the appearance of the screen.

Port Monitor Screen Commands	<b>Port Monitor</b>	Screen	<b>Commands</b>
------------------------------	---------------------	--------	-----------------

<b>Desired Change</b>	Procedure
Change the monitor window font.	Select Font from the Edit menu.
Change width of a single column.	Left-click on the column separator (vertical) line and drag it to the desired width.
Change column placement.	Left-click in the middle of the column you want to move and drag it to the desired location.
Remove a column.	Right-click on the column you want to remove and select <b>Remove</b> from the pop-up menu.
Clear all fields and reset them to null values.	Right-click on the upper left cell in the table and select <b>Reset</b> from the pop-up menu.*
Clear any single field <i>except</i> the upper left cell.	Right-click on the field to be cleared and select <b>Reset</b> from the pop-up menu.*
Add a column.	Right-click on the column now occupying the desired location and select Add from the pop-up menu. You are prompted to name the variable you want to display, as well as other information. (See <i>Column Setup</i> , below.) After you click <b>OK</b> , the column is inserted in the selected location and the existing column is moved to the right.
Change other properties of a column.	Right-click on the column and select <b>Properties</b> from the pop-up menu. (See <i>Column Setup</i> , below.)

\* The **Reset** command does not clear raw data from the calcs.dat file. It simply resets the selected display fields to their null values. For more information regarding calcs.dat see <u>page 17</u>.

### **Column Setup**

When you select Add or Properties from the column pop-up menu, the Column Setup window displays:

Column S	etup	2
	Enors 💌	
<u>N</u> ame:	Errors	
Width	12	
	Color0	
	Colori	
<u>D</u>	Cancel Help	

- Use the **Input** droplist to select the variable displayed in the column.
- Use the Type droplist to select the way in which the value displays: either as an integer, as an on/off state, as an integer with a kilo, mega, or giga suffix, or as an hh:mm:ss time stamp. This defaults to the appropriate type for the selected Input variable.
- Use the Name variable to change the column heading name.
- Use the Width variable to specify the column width in characters.
- Use Color0 to set the column character color when the value is zero.
- Use Color1 to set the column character color when the value is not zero.
- When done, click OK to save your changes and return to Port Monitor.

#### **Report Configuration**

To configure reports, select **Config** from the Edit menu.

The Single report options cover all ports and are overwritten each time the reports are generated. The Multiple report options generate a separate report for each port, and each report file is appended each time the report is generated.

For Hour reports, use the Single and Multiple droplists to select whether you are generating single or multiple reports, or both. For each report type, select from the following types of data to include:

- None: no report is generated.
- Hour Data: only variables with "Hour" in the name are included.
- All Data: all variables are included.
- View Data: only variables that appear onscreen are included.

Program Setup	×
Hour Reports Single: None	
External Program Test	
Day Reports Single: None Multiple: None Test	
Update Time(seconds) 2 QK Qancel Help	

The External Program field is used to enter a command line to run another program after the hourly reports have been generated. For example, you can use this to run a batch file that performs custom report processing. The Test button causes the command line to be executed immediately.

For Day reports, the single and multiple droplists behave the same, but your choices are:

• None: no report is generated.

- Day Data: only variables with the words "Day" or "Raw" in the names are included.
- All Data: all variables are included.
- View Data: only the variables that appear in the Port Monitor window are included.

Likewise, the External Program field is used to enter a command line to be executed after the daily reports have been generated.

The Update Time option allows you to set the rate at which the port information is obtained and the calculations performed. There is a trade-off between Port Monitor efficiency and response time. If you are using Port Monitor to view the port activity on the screen, you may want to set the update time to 1 or 2 seconds, so that the screen is updated frequently. If you are concerned about the monitor program using CPU resources, set this to a higher value, (6 to 20 seconds) in order to decrease the time required by the program to perform the calculations and update the screen.

If Port Monitor is left active to generate reports, minimizing or reducing the display area of the program will help reduce the CPU overhead of updating the screen.

### **Port Monitor Files**

Port Monitor creates and uses the following files:

- portmon.vew
- calcs.dat

The default column layout is saved in **portmon.vew**. If you have been experimenting with the appearance of the monitor screen, you can use the File menu Save option to save your customized layout in another.vew file. You can retrieve this file later by using the File menu **Open** option, or you can use the Edit menu **View Default** option to retrieve **portmon.vew** and restore the default view.

All Port Monitor calculations are saved at program exit and on the hour in a binary file named calcs.dat. This enables you to halt Port Monitor execution without losing accumulated data.

Port Monitor also creates a \REPORTS directory. All hourly and daily reports are saved in this directory, under the following names:

- hall.txt hourly single report
- dall.txt daily single report
- hcomx.txt hourly multiple reports, where *x* is the port number
- **dcomx.txt** daily multiple reports, where *x* is the port number

*Caution:* Since multiple reports append new data each time they are written, the multiple report files grow in size. It is up to you to delete them periodically.

Some safeguards are built into the program to avoid filling up a hard disk drive due to growing report files. The monitoring program stops writing additional data to the multiple reports if they reach a size of 2 MB. Also, the program will not write out data files to the disk drive if the spare room on the drive is less than 2 MB in size.

To view or edit an hourly or daily report, use the Edit Report option on the File menu, or use a system tool such as NOTEPAD.

For more information, see the Port Monitor Help file.

### **Port Monitor Variables**

The following table lists Port Monitor variables.

Variable	Description				
Cd	Input CD (carrier detect) pin status.				
CDDayRuns	Carrier detect turn-on count in the last day.				
CDDayRunsWrk	Carrier detect turn-on count in the current day.				
CDDayRunTime	Time in seconds carrier detect has been on in the last day.				
CDDayRunTimeWrk	Time in seconds carrier detect has been on this day.				
CDHourRunTime	Time in seconds carrier detect has been on in the last hour.				

#### **Port Monitor Variable List**

	Port Monitor Variable List (Continued)
Variable	Description
CDHourRunTimeWrk	Time in seconds carrier detect has been on this hour.
CDRuns	Carrier detect turn-on count.
CDRunTime	Time in seconds carrier detect has been on.
Cts	Input CTS pin status.
Dsr	Input DSR pin status.
Dtr	Output DTR pin status.
Errors	Total hardware receive errors (parity, framing, and overruns.)
FramingErrors	Total count of receive framing errors.
FramingErrorsRaw	Total count of receive framing errors, from the driver.
Open	Open status, on if open, off if closed.
OverrunErrors	Total count of receive overrun errors.
OverrunErrorsRaw	Total count of receive overrun errors, from the driver.
ParityErrors	Total count of receive parity errors.
ParityErrorsRaw	Total count of receive parity errors, from the driver.
Rts	Output RTS pin status.
RxCPSDayAvMax	Peak RxMinCPS for the last day.
RxCPSDayAvMaxWrk	Peak RxHourCPS for the current day.
RxCPSHourAvMax	Peak RxMinCPS for the last hour.
RxCPSHourAvMaxWrk	Peak RxMinCPS for the current hour.
RxCPSInst	Instantaneous average of receive characters per second.
RxCPSMinAvMax	Peak RxCPSInst for the last minute.
RxCPSMinAvMaxWrk	Peak RxCPSInst for the current minute.
RxDayCnt	Receive bytes count sent in the last day.
RxDayCntWrk	Receive bytes count sent in this day.
RxHourCnt	Receive bytes count sent in the last hour.
RxHourCntWrk	Receive bytes count sent in this hour.
RxMinCnt	Receive bytes count sent in the last minute.
RxMinCntWrk	Receive bytes count sent in this minute.
RxMinCPS	Last minute average of receive characters per second.
RxPkts	Raw count of total receive packets sent.
RxTotal	Total bytes received.
RxTotalRaw	Total number of receive bytes raw data from the driver.
StatusFlags	Bit flags, Open, CTS, DSR, CD, RTS, DTR
TxCPSDayAvMax	Peak TxMinCPS for the last day.
TxCPSDayAvMaxWrk	Peak TxHourCPS for the current day.
TxCPSHourAvMax	Peak TxMinCPS for the last hour.
TxCPSHourAvMaxWrk	Peak TxMinCPS for the current hour.
TxCPSInst	Instantaneous average of transmit characters per second.

## Port Monitor Variable List (Continued)

Variable	Description
TxCPSMinAvMax	Peak TxCPSInst for the last minute.
TxCPSMinAvMaxWrk	Peak TxCPSInst for the current minute.
TxDayCnt	Transmit bytes count sent in the last day.
TxDayCntWrk	Transmit bytes count sent in this day.
TxHourCnt	Transmit bytes count sent in the last hour.
TxHourCntWrk	Transmit bytes count sent in this hour.
TxMinCnt	Count of transmit bytes sent in last minute.
TxMinCntWrk	Transmit bytes count sent in this minute.
TxMinCPS	Last minute average of transmit characters per second.
TxPkts	Raw count of total transmit packets sent.
TxTotal	Total bytes transmitted.
TxTotalRaw	Total number of transmit bytes raw data from the driver.

### Port Monitor Variable List (Continued)

# **Using Peer Tracer**

The **Peer Tracer** program (**peer.exe**) is specifically designed to view the internal operations of the driver for the purpose of troubleshooting communications on Windows 2000 systems. **Peer** enables you to see:

- Receive and transmit data
- Internal driver event traces
- Advanced configuration and status information

Like Test Terminal, Peer acts as a simple terminal session, and is used to send and receive text information to and from the driver. To use Peer, you type in commands, and status and information are sent back. Unlike Test Terminal, Peer enables you to keep a continuous log of the commands sent and the results received in a file named peer.log.

Comtrol Technical Support may ask you to run Peer in order to help diagnose reported problems.

### **Starting Peer**

Peer Tracer does not appear in the Comtrol program group. To use it, you must open Windows Explorer, access the C:\WINDOWS\system32\ directory, and double-click on peer.exe. The Peer Tracer window displays:

### **Log Functions**

All logging functions are found under the File menu. To start keeping a log, select Log to Disk from the File menu. The other options on this menu are View Disk Log, Clear Disk Log, Clear Screen, and Exit.

### **Using Peer**

To use peer, simply type in commands at the : prompt. (It may be necessary to press Enter to make the : prompt appear.) For example, to examine COM5, type:

### PORT COM5 <Enter>

To gather some information about the port, type:

### STAT <Enter>

This should return details about the port.



To turn on monitoring of any calls into driver (events), type:

MON EV <Enter>

To send strings and commands to attached peripherals—for example, to send "ATH0" to a modem—type: SEND ATH0 <Enter>

A return and linefeed are always appended to each string sent.

### **Other Commands**

Enter commands at the : prompt and follow each command with Enter.

Command	Effect
MON TX	Monitor data being transmitted through the selected port.
MON RX	Monitor data being received through the selected port.
М	Turn off all monitoring.
?	Display Peer Tracer command summary.
PORT COMxx	Change port being examined to COM <i>xx</i> .

**Peer Tracer Commands** 

Keep in mind that all commands are processed in the driver, and that **Peer** simply acts as a conduit for this information. For more information, see the **Peer.hlp** help file.

Note: Use the Help button if you need detailed information about any field.

# Setting I/O Addresses and DIP Switches (ISA Only)

This discussion concerns ISA-bus adapters only. This driver supports only one ISA adapter. When you install an ISA-bus adapter, you must set the base I/O address in two places:

- In the driver software.
- On the adapter itself, using a block of DIP switches.
- *Note: PCI-bus adapters use base I/O addresses that are assigned by the system BIOS. As a rule, you cannot change these addresses.*

### **Software I/O Address**

During installation, the software base I/O address is set to default values by the Add/Remove Hardware wizard.

After you finish the software installation, you can use the **Device Properties Resources** tab to view or change the Input/Output Range resource setting. If the default values prove incorrect:

- 1. Highlight the Input/Output Range from the Resource Type list.
- 2. Click the Change Setting button.
- 3. You may need to choose a hardware configuration from the Setting Based On droplist to activate the Edit Input/Output Range window.

*Note:* The I/O range setting is based on your hardware configuration setting, you can have multiple hardware configuration settings, and this control may be locked in some configurations.

### Hardware I/O Address

The hardware base I/O address is set using a block of DIP switches on the adapter circuit board. See your <u>*Hardware Installation*</u> documentation for instructions on how to set the DIP switches.

The software and hardware I/O address settings must match each other. For example, if you set the DIP switches to 180 (hex), you must select 180 (hex) in the software.

# **Technical Support**

Comtrol has a staff of support technicians available to help you.

You should review <u>Troubleshooting</u> and run through the diagnostics before calling Technical Support. In

addition, the web site has <u>On-Line Technical Support</u> available. If you call for Technical Support, please have the following information available.

Information

	<u>Comtrol Headquarters</u>	<u>Comtrol Europe</u>
Internet URL:	www.comtrol.com	www.comtrol.co.uk
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FTP site:	<u>ftp.comtrol.com</u>	
FAQ On-line Help	www.comtrol.com/coperate.htm	

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