



# RocketPort<sup>®</sup> and RocketModem Driver Installation for Windows<sup>®</sup> NT

## How to Use this Document

You can use the interactive [Table of Contents](#) to locate the information you need.

## Driver Requirements

This document discusses installing and configuring the RocketPort and RocketModem device driver for the Windows NT operating systems:

- Microsoft<sup>®</sup> Windows<sup>®</sup> NT (3.51 and 4.0)
- Citrix<sup>®</sup> WinFrame<sup>®</sup> (1.7 and 1.8)

**Note:** *This product was developed and tested using Windows NT Release 3.51, Windows NT Release 4.0, and Citrix WinFrame Release 1.7*

This driver supports the following products:

- RocketPort ISA
- RocketPort PCI (4J, 8/16/32-port, and Quad/Octacable models)
- RocketPort PCI/422
- RocketPort 485
- RocketPort *Plus* (2-port and Quad/octacable models)
- RocketModem (ISA)
- RocketModemII and RocketModem *i* (PCI)

**Note:** *The readme.txt file that is delivered with the driver may contain additional information not published in this document.*

For hardware specific information or the product overview, see the [Hardware Installation](#) 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.

[Driver updates](#) 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.

## Installation Prerequisites

Before you begin installation, note the following:

1. You must have at least one [RocketPort or RocketModem adapter installed before](#) installing this driver.
2. If you are using Windows NT 3.51 or an early version of Windows NT 4.0 with no service packs applied, and are using the adapter to provide dial-in (RAS) access to the NT server, verify that NetBEUI is installed before installing RAS.

**Note:** *Under Windows NT 4.0, RAS will not work properly unless you have at least Service Pack 3 applied. For more information about service packs and updates, contact Microsoft.*

3. If you are installing the RocketPortModem in a server without an existing network adapter (NIC), you must install network services and the Microsoft Loopback Adapter software first. See your Microsoft Windows NT documentation for more information.
4. If you are using this driver under Windows NT 3.51, or if you are using the modem.inf file under NT 4.0, be advised that the driver installation process creates a backup of the modem.inf file named modem.bak, before updating the file.
5. Finally, if you are upgrading from an earlier version of the RocketPortModem device driver, you must [remove the old driver](#) before installing this new version. Do not use the *Update* option.

# Interactive Table of Contents

<b>How to Use this Document</b> .....	<b>1</b>
<b>Driver Requirements</b> .....	<b>1</b>
<b>Installation Prerequisites</b> .....	<b>1</b>
<b>Removing an Existing Driver</b> .....	<b>3</b>
Special Instructions .....	3
<b>Installing the New Driver</b> .....	<b>4</b>
Driver Installation .....	4
Verifying Installation.....	10
Further Configuration .....	10
<b>Changing or Viewing Driver Configuration</b> .....	<b>10</b>
<b>Changing or Viewing Adapter Configuration</b> .....	<b>12</b>
<b>Changing or Viewing Port Configuration</b> .....	<b>13</b>
General Port Setup .....	14
RS-485 Tab .....	15
Modems Tab .....	15
<b>Adding an Adapter</b> .....	<b>16</b>
<b>Removing an Adapter</b> .....	<b>16</b>
<b>Troubleshooting</b> .....	<b>16</b>
Known Issues .....	17
Device Driver and OS Capabilities and Limitations.....	18
<b>Configuring Modems Overview</b> .....	<b>19</b>
<b>Installing Modems</b> .....	<b>19</b>
<b>Further Modem Configuration</b> .....	<b>22</b>
<b>Installing RAS Initially</b> .....	<b>22</b>
<b>Adding or Reconfiguring a RAS Device</b> .....	<b>24</b>
<b>Adding Serial Printers</b> .....	<b>28</b>
<b>Changing Printer Port Configuration</b> .....	<b>31</b>
<b>Changing Printer Port Assignment</b> .....	<b>31</b>
<b>Troubleshooting</b> .....	<b>32</b>
<b>Using Test Terminal</b> .....	<b>32</b>
Testing a RocketPort .....	33
Testing a RocketModem.....	33
Modem Control Signals .....	34
<b>Using Port Monitor</b> .....	<b>34</b>
Starting Port Monitor .....	35
Changing Screen Appearance .....	35
Column Setup.....	36
Report Configuration .....	36
Port Monitor Files .....	37
Port Monitor Variables.....	37
<b>Using Peer Tracer</b> .....	<b>39</b>
Starting Peer .....	39
Log Functions.....	39
Using Peer .....	39
Other Commands .....	39
<b>Technical Support</b> .....	<b>40</b>

## Removing an Existing Driver

Use the following procedure to remove an existing Windows NT driver. If updating (not reconfiguring) this driver, make sure that you remove the existing driver before installing the updated driver.

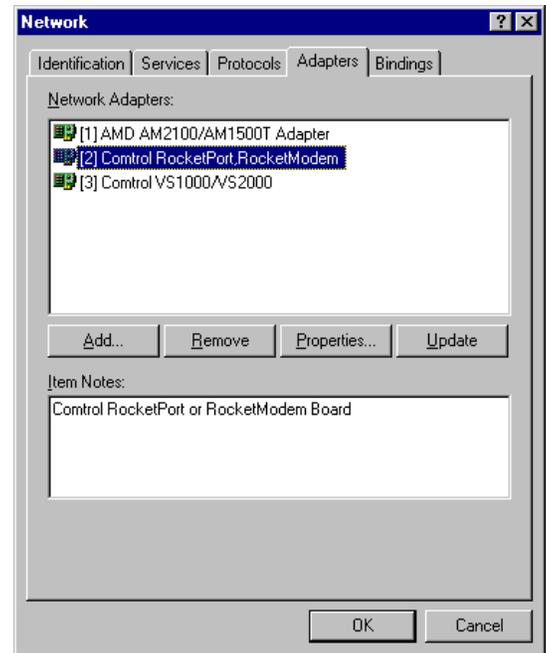
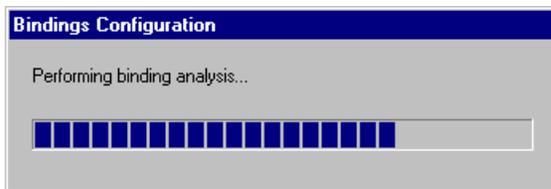
1. Open the Control Panel and start the Network applet.
2. If using *Windows NT 4.0*, select the Adapters tab.  
If using *Windows NT 3.51*, skip to the next step.

**Note:** All screens shown in this section are taken from *Windows NT 4.0*. If you are using *Windows NT 3.51* or *Citrix WinFrame*, note that the screens look different but have similar functions. Adapt the instructions as needed.

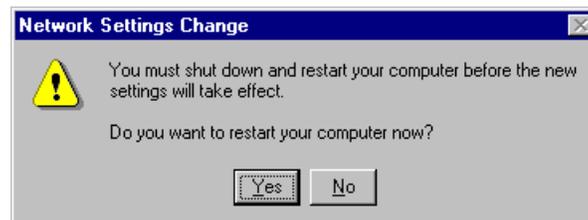
3. Highlight **Control RocketPort,RocketModem**.

**Warning:** If *Control RocketPort,RocketModem* does not appear in the Adapters window, click the **Cancel** button right now, then go to the [Special Instructions](#) on Page 3.

4. Click the **Remove** button. You are asked to verify the deletion.
5. Click **Yes**. The selected item is deleted.
6. Click **Close**. Several windows are displayed as the system updates its configuration:



7. Click **Yes** to shut down and restart the server, so that your changes take effect.



8. After removing the existing driver, use the *Installing a New Driver* discussion.

**Note:** This procedure does not remove the *Control RocketPort RocketModem* program group. If you wish to do so, see the "Start Menu" topic in the *Windows NT* help system for more information.

### Special Instructions

If *Control RocketPort,RocketModem* does not appear in the Network Adapters window, click **Cancel** to exit from the Network applet. Then start the *Control RocketPort/RocketModem Setup* program, set the droplist for each board to **Not Installed**, and save and reboot.

This should remove the driver and clean up all associated files. If it does not resolve the situation, contact Control Technical Support for more assistance.

## Installing the New Driver

Use the following instructions to install the RocketPort/RocketModem Windows NT driver. If using Citrix WinFrame, follow the instructions for Windows NT 3.51.

**Note:** If updating the Windows NT driver, remove the existing driver first. Do not use the Update option.

These procedures assume that you have already installed the hardware and determined that it is working properly. For information about the bootable diagnostic, see the media shipped with your product or the [ftp/web site](#).

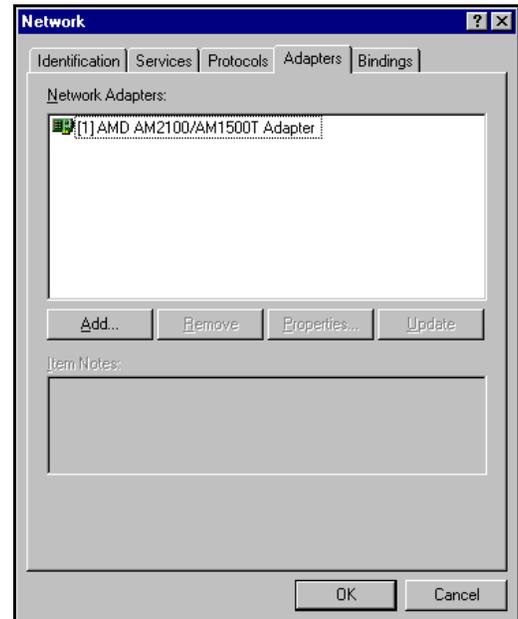
### Driver Installation

After you have extracted the driver files (if needed), follow these steps:

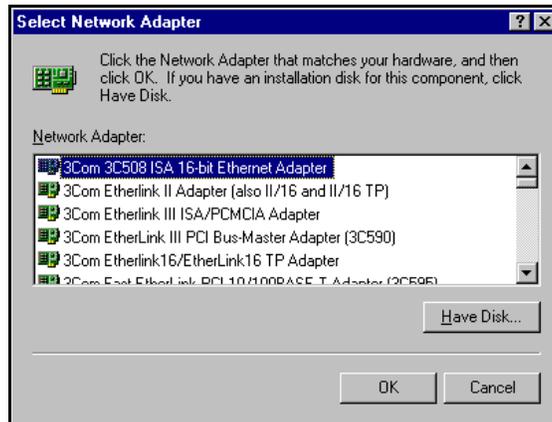
1. Open the Control Panel and start the Network applet, or right-click on the Network Neighborhood icon and select Properties.



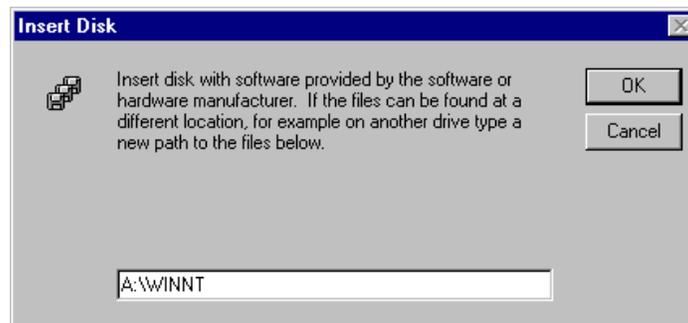
2. If *Windows NT 4.0*, select the Adapters tab.  
If *Windows NT 3.51*, click the Add Adapter button.



3. **Windows NT 4.0 only:** Click the Add button. The list of supported network adapters displays:

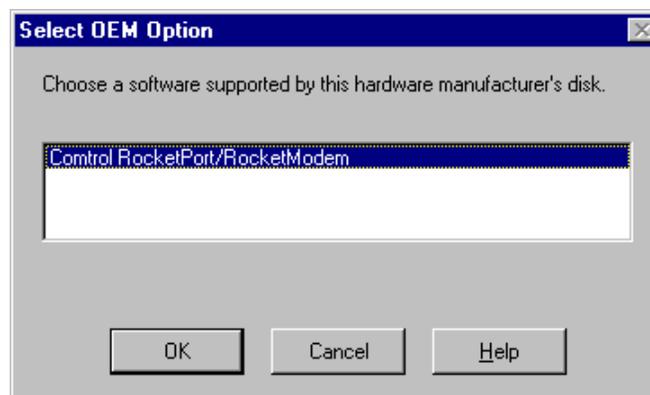


4. If *Windows NT 4.0*, click the **Have Disk** button.  
If *Windows NT 3.51*, scroll down to the bottom of the list, highlight the **Other** option, and click the **Continue** button.
5. If installing the driver from a diskette, insert the diskette.  
**Note:** Make sure that you have extracted the files from the Control media or any downloaded file from the ftp/web sites.
6. Enter the drive and directory path to the installation files and click the **OK** button.



For example, if you used the self-extractor utility to create a c:\control directory, enter:  
c:\control

7. Click the **OK** button with **Control RocketPort/RocketModem** highlighted.



8. Click Next when the Add Device Wizard appears and follow the on-screen instructions to configure the adapter type you installed in your system. You must install and configure at least one adapter at this time. If you are installing more than one adapter, install all PCI-bus adapters before installing any ISA-bus adapters.

Depending on the model of adapter you have installed, enter the following information.

**Note:** *The prompts that display and the options associated with each prompt change depending on your selections. If you reach a point where the available options do not match your product, you probably selected an incorrect choice on an earlier page. In this case, use the **Back** button to backtrack and review your selections, and correct as needed.*



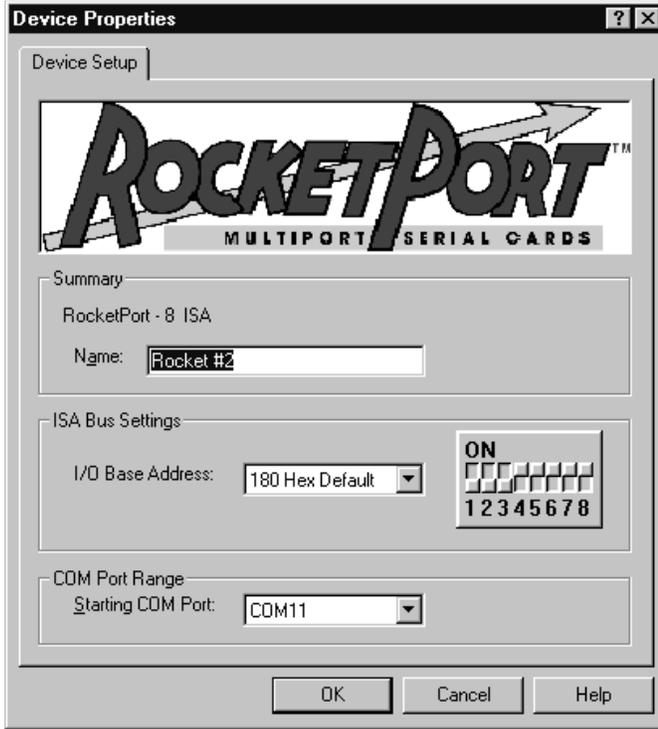
- a. **Bus Type.** Select ISA or PCI and click Next.
- b. **Model.** Use the droplist to select the Control product you have installed, and click Next.
- c. **Number of Ports.** Use the droplist to select the number of ports on the product you have installed, and click Next.
- d. **Base I/O Address.** (*ISA-bus products only*) Use the droplist to select the I/O address you set using the DIP switches on the adapter. (See the *Hardware Installation Card*.)

If you are installing a PCI adapter and this prompt appears, you selected the wrong **Bus Type** in [Step a](#). Click the **Back** to go back and change your selection.

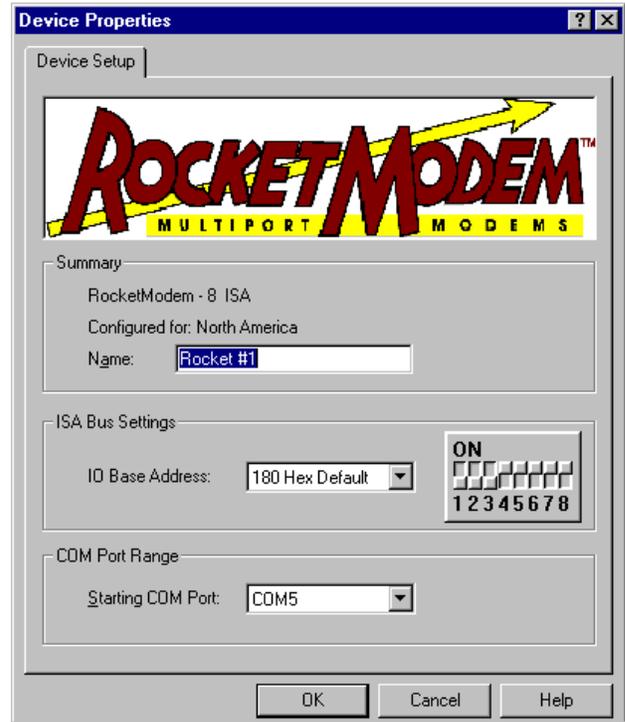
- e. **Country.** (*Control modem products only*) Use the droplist to select the country or region where the modem will be used.

**Note:** *Not all Control modem products support all country selections. Check your packaging to make sure that your modem supports the country you wish to select.*

9. When you have finished entering adapter configuration information, click the Finish button. The appropriate *Device Setup* window displays:



*RocketPort ISA Example*



*RocketModem ISA Example*

10. Review the information shown. If desired, you can enter a more descriptive name for the adapter, change the base I/O address setting (ISA-bus only), or change the COM number assigned to the first port on the adapter.

11. Click **OK** to save the device configuration. The Main Setup window displays:

12. If you have installed more than one adapter, you may configure more adapters at this time. Click the **Add** button, then repeat [Steps 8](#) through [11](#) for each additional adapter installed.

**Note:** *If you are installing more than one adapter, install all PCI-bus adapters before installing any ISA-bus adapters*

13. *If you have installed a RocketPort adapter that is capable of speeds over 230.4K bps, you can configure the driver for high-speed operation at this time. Follow these steps:*

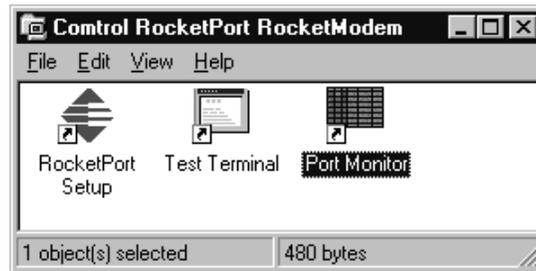
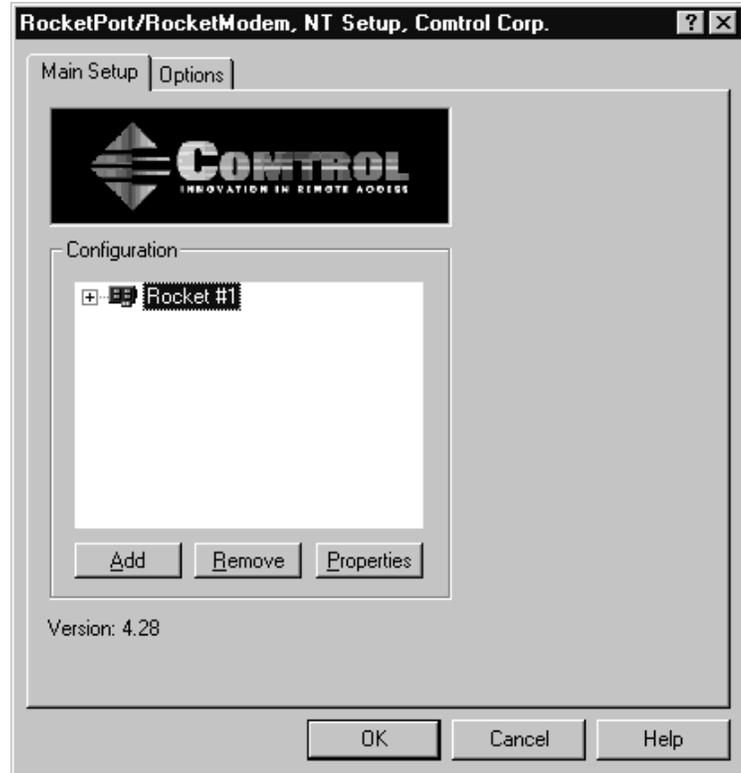
- a. Click the **Options** tab.
- b. Use the **Scan Rate** droplist to select a driver servicing rate. For example, to use an Octacable at 460.8K bps, select 4. To use a RocketPort *Plus* at 921.6K bps, select 2 or 1.

For more information about the Options tab and Scan Rate control, see [Changing or Viewing Driver Configuration](#).

- c. Click the **Main Setup** tab. The above window re-displays.

14. Click **OK** to close the Device Setup window.

15. Click **Yes** when the confirmation window displays, asking you to verify that you want to save the configuration and exit. The setup process creates and displays the program group:



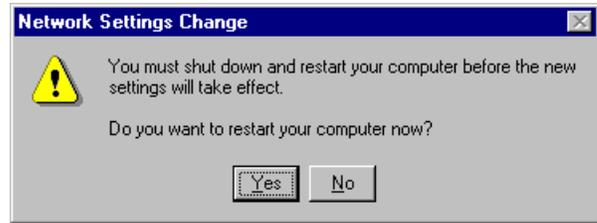
16. Click **OK** when this reminder displays.



17. Click **Close** when the Network Adapters window displays, showing the Control adapter.

18. Click **Yes** to shut down and restart the server, or **No** to put it off until a more convenient time.

**Note:** *You must shut down and restart the server before your changes take effect. Do not use the Control Setup program until you have done so.*



## Verifying Installation

After you shut down and restart the server, access the Windows NT Administrative Tools menu and open the Event Viewer.

- If the installation was successful, there is an “i” type log entry stating that the driver successfully initialized the hardware.
- If the installation failed, there is a stop or “!” type event log entry. Double-click on the log entry for more information. If the Verbose Event Log option is enabled, additional details may be listed.
- If the cause of the problem is not immediately apparent, *Troubleshooting* on Page 16.

## Further Configuration

After you restart the server:

- If you are using a **standard RocketPort or RocketPort Plus**, review the information under [Changing or Viewing Port Configuration](#) and fine-tune the port configuration as needed. Then proceed with installing and configuring peripheral devices.
- If you are using a **RocketModem**, review the information on Modem Reset under [Changing or Viewing Port Configuration](#). Then proceed with [configuring the modems](#).
- If you are using a RocketPort 485 or an external RS-485 converter, you must configure both the driver and the individual ports for RS-485 operation. See [Changing or Viewing Driver Configuration](#) for information on enabling RS-485 at the driver level, then [Changing or Viewing Port Configuration](#) for information on enabling RS-485 on selected ports.

## Changing or Viewing Driver Configuration

To view or change the driver configuration after installation, follow these steps:

1. Use one of these methods to start the Control Setup program:
  - a. From the RocketPort/RocketModem program group, double-click on the **RocketPort Setup** icon.
  - b. From the Start button menu, select **Programs, Control RocketPort/RocketModem, RocketPort Setup**.
  - c. From the desktop, right-click on the **Network Neighborhood** icon and select **Properties**. The Network window displays. Select **Adapters, Control RocketPort, RocketModem**, then click the **Properties** button.
2. Click the **Options** tab.



3. Select, de-select, or set the following as desired:
  - a. **Verbose Event Log.** Check this box to cause longer messages to be sent to the Windows NT Event Log. This added information can be useful when debugging communications and configuration problems.
  - b. **Scan Rate.** Use this droplist to set the driver servicing rate. As a general rule this is changed only if you are driving ports at rates in excess of 230.4 Kbps. For example, if you are using a RocketPort OctaCable running at 460.8 Kbps, select **4** ms. If you are running a RocketPort Plus at 921.6 Kbps, select **2** ms.

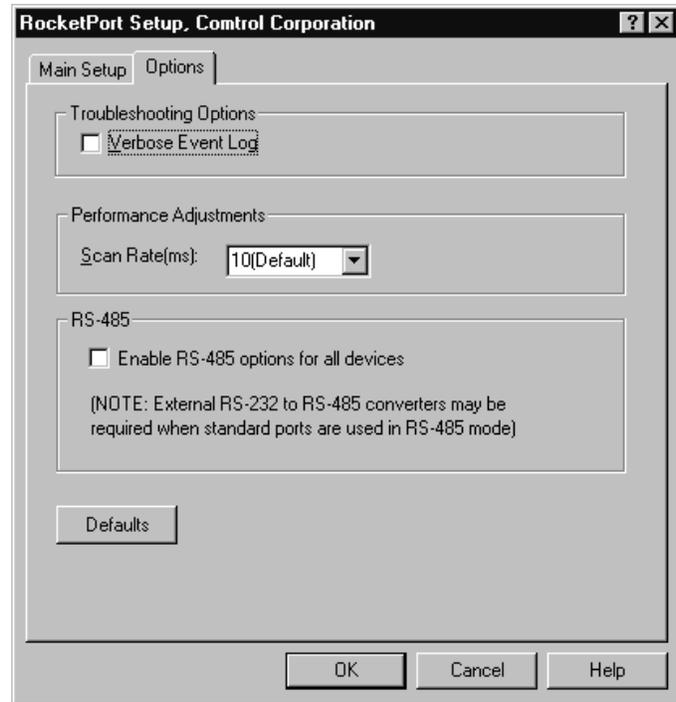
**Note:** Earlier versions of the Control Windows NT driver also required an interrupt (IRQ) setting in order to achieve high baud rates. The improved servicing routine in the 4.x driver no longer requires an IRQ.

- c. If you are using a RocketPort 485, or if you are using a standard RocketPort with an external RS-232 to RS-485 converter, check the **Enable RS-485** box to permit RS-485 operation. and you want to use RS-485 mode, If not using RS-485, leave this box blank.

**Note:** This sets the driver to support RS-485. You must also configure each port that you plan to use for RS-485.

4. When you are done working with the driver configuration options, select the **Main Setup** tab to return to the Main Setup window, or the **OK** button to save your configuration changes and exit.

Changes to RS-485 status take effect immediately on exit. Changes to the scan rate or event log status require that you save your changes and restart the server before your changes take effect.



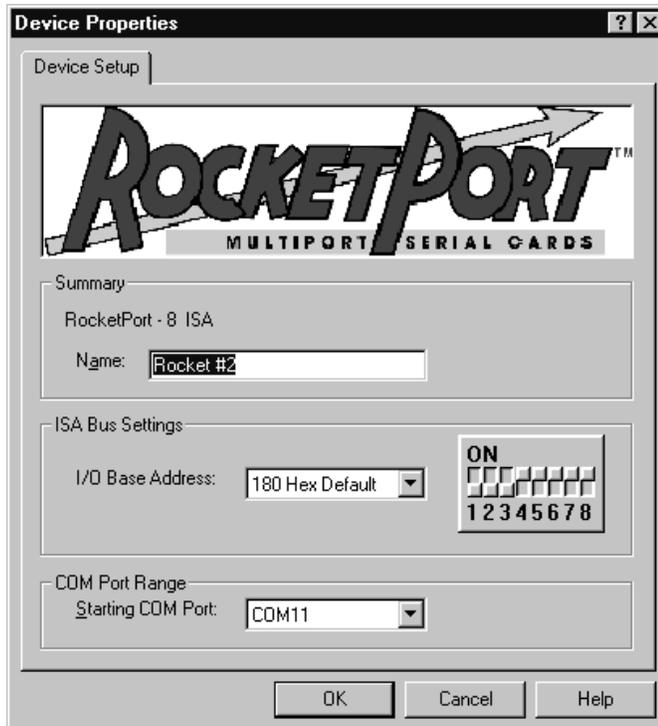
## Changing or Viewing Adapter Configuration

To view or change adapter (device) configuration after installation, follow these steps:

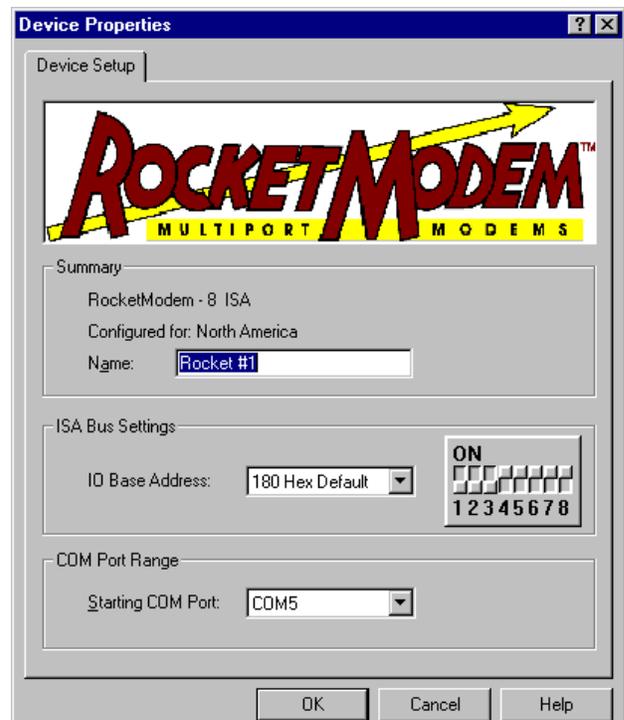
1. Start the Control Setup program. The Main Setup window displays:



2. In the Configuration window, click on the adapter you want to work with and select the Properties button.



*RocketPort ISA Example*



*RocketModem ISA Example*

**Note:** The Summary area displays the basic device configuration, as entered using the Add Device Wizard. If this information is not correct, you must remove and re-add the device.

3. You can view or change the following as desired:

- a. **Name.** The default device name is assigned by the Add Device Wizard. If desired, you can enter a more descriptive name.
- b. **Base I/O Address.** (*ISA-bus adapters only*.) If desired, use the droplist to select a different base I/O address.

If this is the *first* ISA-bus adapter in the system, the I/O address DIP switch setting on the adapter must match the DIP switch illustration shown to the right of the entry field.

If this is the second or subsequent ISA-bus adapter, you may select any available I/O address range. The address you select here does *not* have to match the DIP switches on the adapter.

However, the DIP switches on second and subsequent adapters must be set in correct relation to the DIP switch settings used on the *first* adapter, as described in the hardware installation instructions.

- c. **Starting COM Port.** Use the droplist to select the COM port number to assign to the first port on the adapter. All other port numbers will follow in sequence.

If you have more than one adapter installed, the numbering on subsequent adapters will follow from the first adapter. (For example, if the first adapter has COM5 through COM12, the second adapter will begin with COM13.)

If desired, you can use this control to set nonsequential starting COM port numbers for each adapter, thus leaving gaps in the COM port numbering sequence.

Do *not* use this control to overlap COM port numbers. If you do so, the overlapping ports will be disabled.

4. When you are done, click **OK** to close the Device Setup window and return to the Main Setup window.

Your changes are not saved until you click **OK** to save and exit from the Main Setup window. When you do so, your changes take effect immediately. No reboot is required.

## Changing or Viewing Port Configuration

To view or change individual port configuration, follow these steps:

1. Start the Setup program.

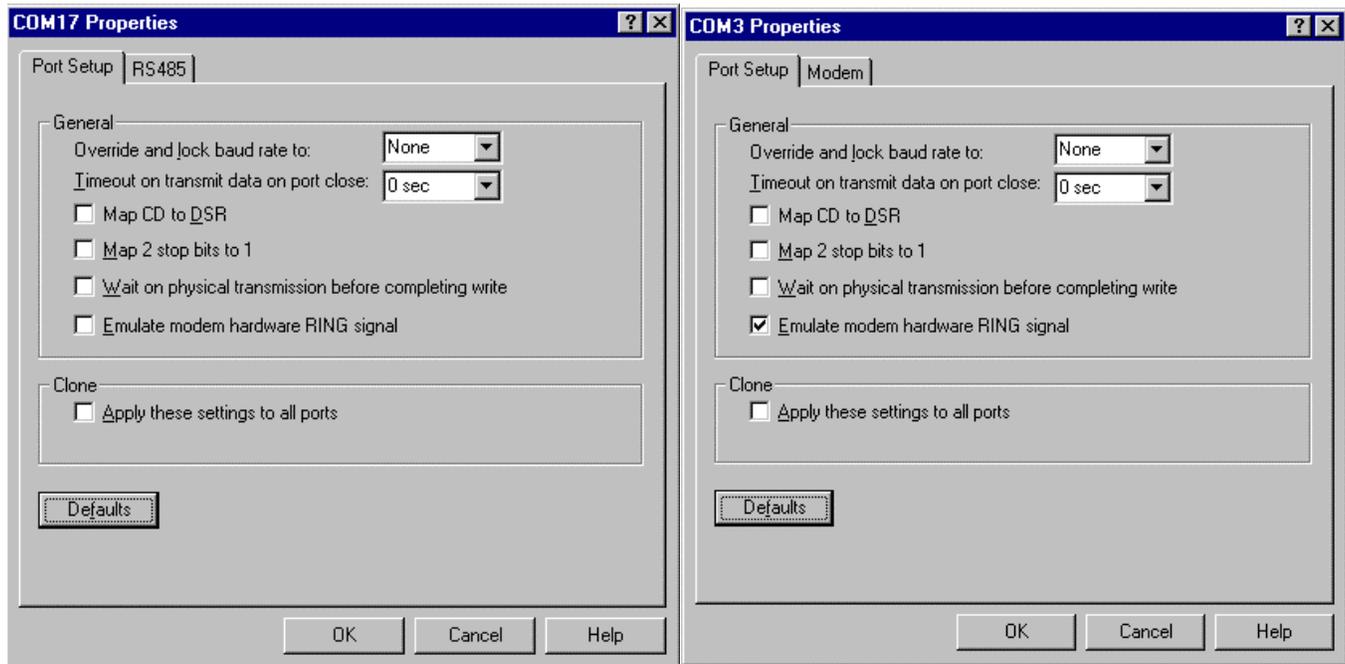
The Main Setup window displays:



2. If necessary, click the [+] button in front of the adapter name so that the ports on the adapter are displayed.

**Note:** To hide the list of ports, click the [-] button in front of the adapter name.

- In the Configuration window, click on the port you want to work with. Then click the Properties button. The Port Properties window displays:



*RocketPort ISA Example*

*RocketModem ISA Example*

**Note:** The tabs and options present in this window depend on the adapter model and driver options selected.

- View or change the port properties as desired. For reference, see the following discussions. When you are done, click OK to close the Port Setup window and return to the Main Setup window.

If you have clicked the Clone checkbox, the changes you make are applied to all Control ports controlled by this driver.

Your changes are not saved until you save and exit from the Main Setup window. When you do, your changes take effect immediately. No reboot is required.

## General Port Setup

### *Override and lock baud rate*

This option replaces the Baud Rate Mapping option used in earlier versions of this driver, and lets you lock selected ports to specific baud rates. After you do so, no matter what baud rate is selected in a host application, the *actual* rate used is the rate specified here.

**Note:** Not all rates are supported by all Control products. See your hardware documentation to determine if your adapter supports the desired rate. To use rates above 230.4 Kbps, you must also reset the scan rate (page 10).

### *Time on transmit data on port close*

Use this droplist to select the length of time to wait for data to clear the transmit buffer after a host application has closed the port.

This is typically used with peripheral devices such as printers, to give the data sufficient time to flush through the system.

### *Map CD to DSR*

This option is used in installations where there is no connection to the port's DSR input. Check this box to cause the CD input to appear as DSR to the host application, and to perform hardware handshaking with CD rather than DSR. This is ignored if flow control is not enabled via IOCTL\_SERIAL\_SET\_HANDFLOW.

### Map 2 stop bits to 1

If the application you use is hardcoded to use two stop bits and you receive framing errors, check this box to map 2 stop bits to 1 bit.

Otherwise, leave this box unchecked.

### Wait on physical transmission before completing write

This option forces all write packets to wait until the transmit data has physically completed the transmission before returning completion to the host application. The default mode (box not checked) is to buffer the data in the transmit hardware buffer, and return completion as soon as the packet is in the buffer.

### Emulate modem hardware RING signal

Check this box to emulate the ring indicator signal. If this feature is enabled, the driver monitors the data stream and outputs a software RI whenever the “ring” AT command is received.

### Clone

If this box is *not* checked, changes apply to the selected port only.

If this box *is* checked, changes apply to all Control ports in the system.

## RS-485 Tab

This tab displays if RS-485 is enabled in the driver Options (page 10). Use it to enable and configure RS-485 on specific ports.

If you want to use RS-485, you must a.) have hardware that supports RS-485, and b.) have RS-485 enabled on both the driver Options tab and on the individual port.

### Override and lock to RS-485 toggle mode

Check this box to switch the selected port to RS-485 mode.

### RS-485 Toggle RTS Low

Check this box to toggle the RTS output signal low during data transmission. If this box is not checked, RTS is toggled high (asserted) during data transmission.

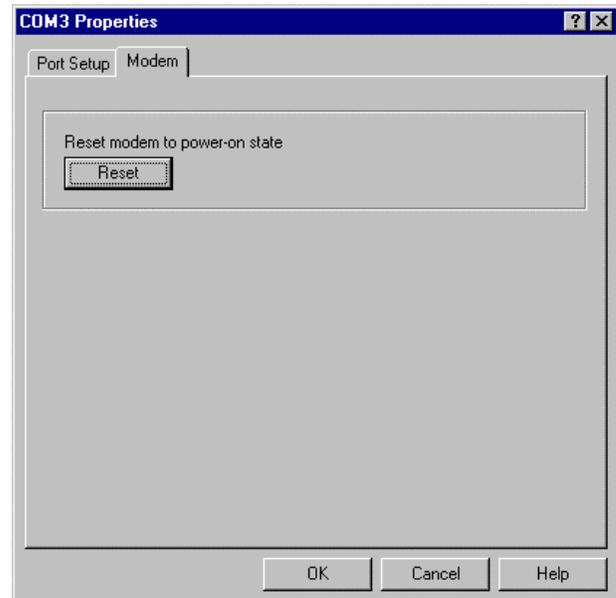
## Modems Tab

This tab displays if the selected port is a Control modem product.

There is one control: the **Reset** button. To reset the selected modem to its default (power-on) state, click the button.

This resets only the modem on the selected COM port, on the selected adapter. This option cannot be used to reset non-Control modems.

**Note:** *Some Control modems do not support reset. To determine whether your modem supports Reset, see the readme file.*



## Adding an Adapter

To add adapters to an existing installation, follow these steps:

1. Shut down the server, switch off the power, and remove the cover.
2. If installing an ISA-bus adapter, set the I/O address DIP switches as indicated in the hardware installation instructions.
3. Install the new adapter in an available slot of the correct bus type.
4. Replace the cover and power up the server.
5. Start Windows NT and log in as the system administrator.
6. Start the Setup program. The Main Setup window displays.
7. Click the **Add** button.
8. The Add Device Wizard starts. Follow the instructions on-screen to configure the newly installed adapter. When the wizard finishes, you are returned to the Main Setup window.
9. Click **OK** to save and exit from the Setup program.
10. Shut down and restart the server, so that your changes take effect.

## Removing an Adapter

To remove an adapter, follow these steps:

1. Start the Setup program. The Main Setup window displays.
2. In the Configuration window, click on the adapter to be removed.
3. Click the **Remove** button.  
To change your mind, click the **Cancel** button immediately. When you re-enter the Setup program, the adapter is restored.
4. To permanently remove the selected adapter, click the **OK** button to save and exit from the Main Setup window.

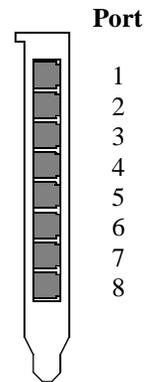
## Troubleshooting

If you are having trouble with an adapter, try the following:

1. Follow the instructions in the *Hardware Installation Card* to run the Diagnostic and verify that the hardware is working correctly, independently of the driver and operating system.
2. Make sure the adapter is seated firmly in the expansion slot and that the expansion slot screw is in place. Also, try moving the adapter to another slot, if one of the correct bus type is available, and rerunning the Diagnostic.  
**Note:** *If the board fails to pass the Diagnostic, stop now and contact Comtrol Technical Support. All of the following steps assume that the board is functional and that the problem is either a configuration or connection issue.*
3. Verify that you are addressing the port correctly. In many applications, device names above COM9 require the prefix `\\.\` in order to be recognized. For example, to reference COM20, use `\\.\COM20` as the file or port name.
4. Verify that you are using the correct types of cables in the correct places and that all cables are connected securely at both ends.
5. Verify that you have obtained and installed all Microsoft service packs for your operating system.
6. Verify that you have obtained and installed the latest Comtrol driver for your adapter and operating system. Current versions of all Comtrol drivers can be downloaded at no charge from the [Comtrol ftp/web sites](#).

7. Verify that you are using the correct ports. The RocketPort 8J mounting bracket and port numbering scheme are shown in the illustration at right. The port on the “top” edge of the card is Port 1, and the port at the “bottom” edge of the card, nearest the bus connector, is Port 8.
 

RocketPort and RocketModem products use a variety of mounting brackets, and in some cases unused ports may be blocked with dummy plugs, but in *all* cases, the port or modem at the “top” edge of the adapter is Port or Modem 1.
8. If you are using ISA-bus adapters, verify that the DIP switches on the adapters are set as described in the hardware installation instructions and the base I/O addresses in the Device Setup window are set as described under [Changing or Viewing Adapter Configuration](#).
9. If you are using a PCI-bus adapter, check the Summary in the Device Setup window to verify that the correct bus type was selected during installation.
10. Use the *Main Setup Options* to reset the Scan Rate to 10 ms.
11. Remove the driver and reinstall it, using a different I/O address (ISA-bus adapters only).
12. If your RocketModem model supports the reset function, use the **Reset** function (page 15) to reset the modem to its default (power-on) state.
13. Use the [Test Terminal program](#) to troubleshoot communications on a port-by-port basis.
14. Use the [Port Monitor program](#) to check for errors, modem control, and status signals.
15. Use the [Peer Tracer program](#) to trace driver events.
16. If you are still unable to resolve the problem, see the *Introduction* for information on contacting Control technical support.



### Known Issues

In addition to the general tips listed above, we have identified a number of specific issues and conditions that affect RocketPort or RocketModem performance.

- **All products**

*Symptom:* The board passes the diagnostics initialization test but fails all serial I/O port tests and cannot be initialized.

*Solution:* Check the computer’s CMOS setup. If “Plug & Play OS” is turned on, turn it off, as neither Windows NT nor the diagnostic disk support “plug and play.”
- **RocketPort with External Modems and NT RAS**

*Symptom:* Processor utilization changes to 100-percent and modems stop answering.

*Solution:* Make sure the modem and/or RocketPort interface cables are not switched, and that there is a modem connected to every port that is configured for RAS. If you have multiple types of external modems, all with different initialization strings, and connect the wrong modem to the wrong port, or fail to connect a modem at all, the server will continue attempting to initialize modems until all system resources have been consumed.
- **RocketPort 8J and NT RAS**

The RocketPort 8J (which has eight RJ11 jacks on the mounting bracket) does not support NT RAS, as it lacks the full set of modem control lines. *All other RocketPort and RocketModem products, including RocketPort 8 and RocketPort Octacable, do support NT RAS.*
- **RocketPort with 3COM/U.S. Robotics Modems**

*Symptom:* Message displays, “The communication device attached to COM<sub>xx</sub> is not functioning.”

*Solution:* Most USR modems come from the factory set to “Load NVRAM defaults.” Reconfigure the modem to “Load Factory Defaults,” as NT RAS issues settings from the `mdm*.inf` file.
- **RocketModem and 3COM/U.S. Robotics V.34 Modems**

*Symptom:* When dialing in from a USR v.34 or v. Everything modem, a “clattering” noise develops on the line and the speed negotiation sequence locks up.

*Solution:* Follow these steps:

  - a. Open the Control Panel.

- b. Open the Modems applet.
- c. Select a RocketModem and click **Properties**.
- d. Select the **Connection** tab.
- e. Click the **Advanced** button.
- f. In the **Extra settings** field, enter **ATS210=12**
- g. Click **OK** to save your changes and exit the Modems applet.

- **RocketModem with Lotus Notes**

When using RocketModem with Lotus Notes, Notes must be configured for “RING” instead of “RI.”

### Device Driver and OS Capabilities and Limitations

This device driver supports the Win32 API. The following tables list known device driver and operating system capabilities and limits. This information is not relevant to ordinary users, but is important to software developers.

**Note:** In Windows NT, device names above COM9 require the \\.\ prefix in order to be recognized by the system. For example, to reference COM20, use \\.\COM20 as the file name.

Device Control Block Settings	Status
BaudRate	Variable depending on RocketPort or RocketModem model installed
ByteSize	7 or 8
ErrorChar	Supported
EofChar	Not supported, supports only binary
EvtChar	Supported
fAbortOnError	Supported
fBinary	Always binary mode
fDtrControl	Supported
fDsrSensitivity	Not supported
fErrorChar	Supported
fInX, fOutX	Supported
fNull	Supported
fParity	Supported
fOutxCtsFlow	Supported
fRtsControl	RTS_CONTROL_DISABLE, RTS_CONTROL_ENABLE, RTS_CONTROL_HANDSHAKE, RTS_CONTROL_TOGGLE
fTXContinueOnXoff	Supported as always TRUE
Parity	EVENPARITY, NOPARITY, or ODDPARITY
StopBits	ONESTOPBIT or TWOSTOPBITS
XonChar, XoffChar	Supported

Unsupported IOCTL Functionality	Status
IOCTL_SERIAL_XOFF_COUNTER	Not supported
IOCTL_SERIAL_SET_HANDFLOW (unsupported options)	SERIAL_DSR_HANDSHAKE, SERIAL_DCD_HANDSHAKE, SERIAL_DSR_SENSITIVITY
IOCTL_SERIAL_GET_COMMSTATUS (unsupported options)	fDsrHold, fRlsdHold

## Configuring Modems Overview

After installing the hardware and driver for Windows NT, you can use this discussion to configure modem COM ports.

RocketPort adapters can support any asynchronous serial modem for use by any application that uses TAPI. For information regarding port pinouts and signals, see the [Hardware Installation Card](#).

**Note:** *There is one exception: the RocketPort 8J, which features eight RJ11 connectors on the mounting bracket, does not work with NT RAS, as it lacks the necessary modem control signals.*

*All other RocketPort models, including the RocketPort 8 and RocketPort Octacable, do work with NT RAS.*

RocketModem boards are essentially RocketPort boards with dedicated connections to built-in modems. The serial ports are not accessible externally.

Control products are frequently used to provide Dial-Up Networking access with NT RAS (Remote Access Service).

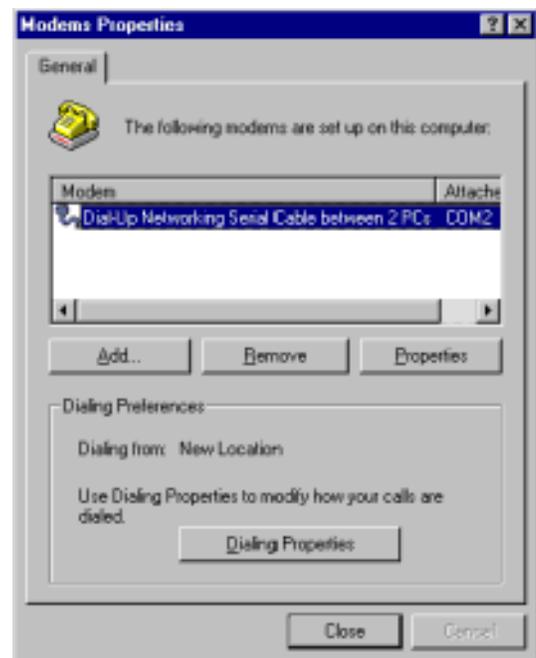
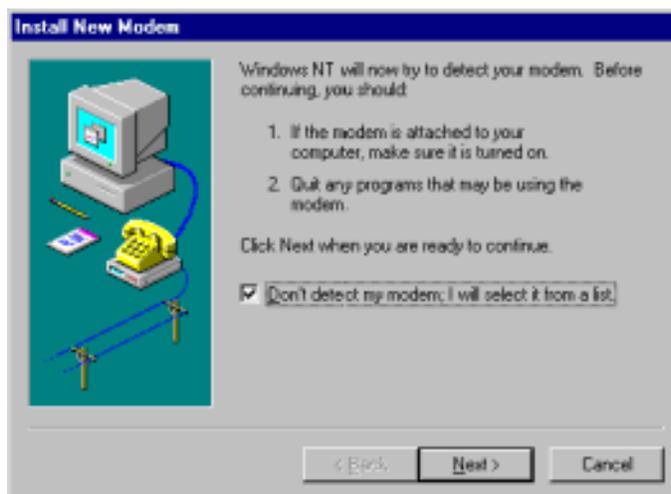
- If RAS is *not* installed, note that you must install at least one RAS-capable device (for example, modem) before installing and configuring RAS.
- If RAS *is* installed, note that the modem installation process automatically launches RAS Setup after modem installation is complete.

## Installing Modems

The following instructions were developed using Control modem products. If you are using another brand of modem, note that some prompts and screen descriptions may differ from those shown.

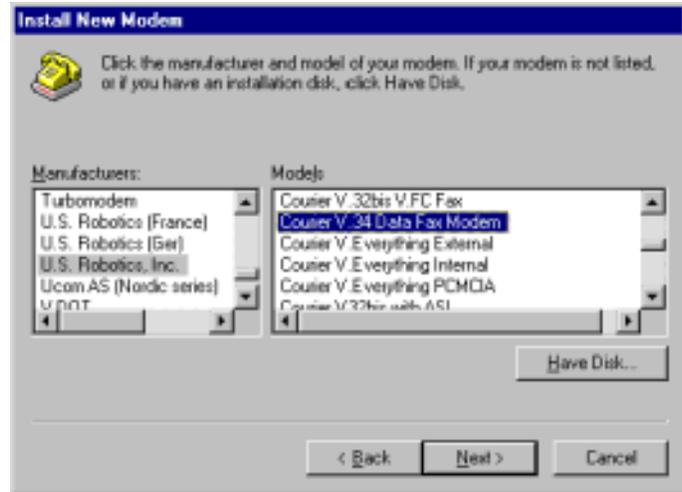
Follow these steps:

1. If RocketPort, connect the modems to the desired ports and power up the modem or if RocketModem, install the RocketModem adapter using the [Hardware Installation](#) documentation.
2. Open the Control Panel window and double-click the Modems icon or if you have no other modems installed, skip to [Step 3](#). If you have already installed another modem, select the Add button.
3. Check the "Don't detect my modem..." box and click Next.

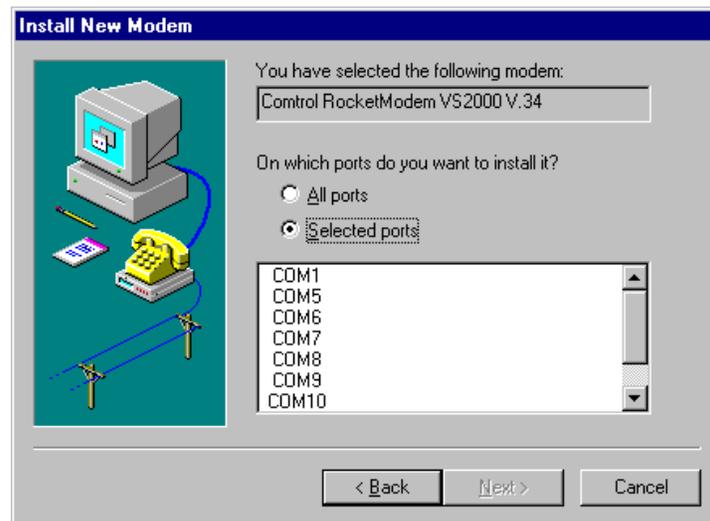


**Note:** *While Windows NT can automatically detect modems, we advise against using this option as auto-detect feature may cause some multiprocessor systems to lock up.*

4. Select the appropriate manufacturer and model and click **OK**. If the correct manufacturer and model do not appear on the list, click **Have Disk** to install software from a manufacturer-supplied installation diskette.



5. Select the port on which you wish to install the modem. If you have multiple modems of the same type (for example, four RocketModem adapters), you can select more than one port and install all the modems at the same time.

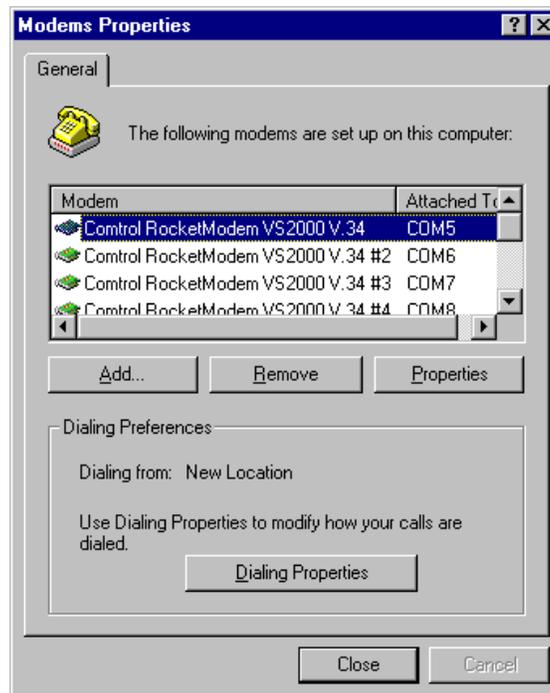


6. Select **Finish**. The modem software is installed on the selected ports.



**Note:** Depending on prior configuration, you may be asked to enter your country of use, area code, the number you dial to get an outside line, and whether you have tone or pulse dialing at this time.

7. Click **Finish**.

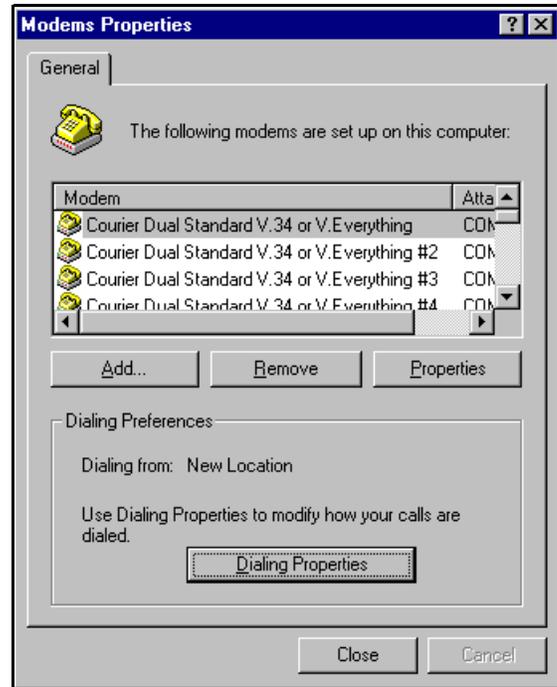


8. If you need to configure modem properties (maximum baud rate, data bits, parity, and so on), click the **Properties** button, make the needed changes, then click **OK** to return to this window.

**Note:** For help configuring modem properties, see the *Windows Help system*.

9. If you need to configure dialing properties (country, area code, calling card number, and so on), click the **Dialing Properties** button, make the needed changes, then click **OK** to return to this window.

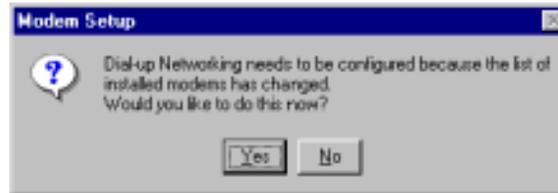
10. Click **Close**.



## Further Modem Configuration

At this point:

- If you are not using RAS, you are now finished. Reboot the server so that your changes take effect and resume normal operations.
- If you plan to use RAS but do not have it installed yet, reboot your system, then go to [Installing RAS Initially](#).
- If you already have RAS installed and configured, this dialog box displays.



If you do *not* want to configure this modem for use with RAS at this time, click No, then reboot and resume normal operations.

If you *do* want to configure this modem for use with RAS, do *not* reboot. Instead, click Yes, then go directly to [Adding or Reconfiguring a RAS Device](#)

## Installing RAS Initially

After installing the hardware and driver, and installing and configuring at least one RAS device (for example, a modem), use this section to install and configure Remote Access Service (RAS).

If you have not previously installed RAS in your Windows NT server, log into the server with Administrative rights and follow these steps:

**Note:** *This example shows how to install and configure RAS for use with modems, but you can use it as a guide to setting up other serial devices.*

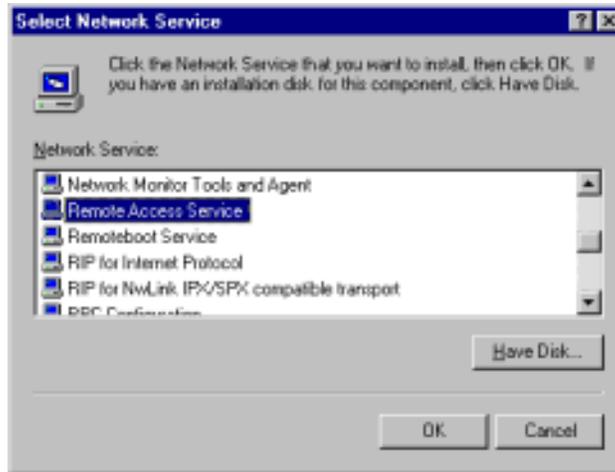
1. Open the Control Panel and start the Network applet, or right-click on the Network Neighborhood and select **Properties**. The following screen displays:



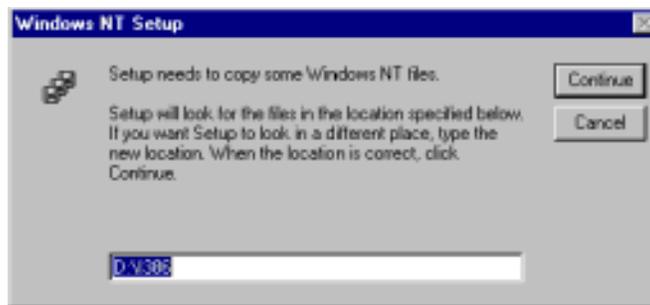
2. If *Windows NT 4.0*, select the Services tab and click the Add button.

If *Windows NT 3.51*, select the **Add Software** button, highlight the **Remote Access Service** selection, and click the **OK** button. The following screen displays.

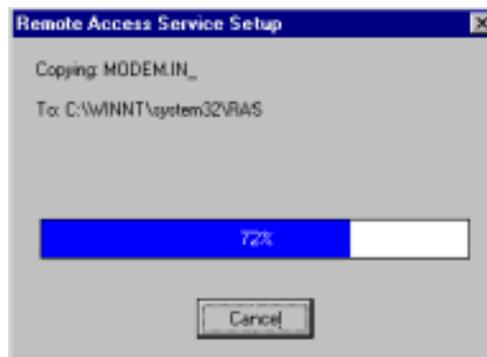
3. Click the **Add** button.
4. Highlight **Remote Access Service** and click the **OK** button.



5. Enter the location of the Windows NT files (for example, `d:\i386`) and press the **Continue** button.



The appropriate files are copied onto your hard drive.



The RAS installation process automatically launches the Add RAS Device process. Go to [Adding or Reconfiguring a RAS Device, Step 5](#).

**Note:** If you install or reinstall RAS from your original Windows NT 4.0 distribution media, you must install or reinstall the latest Windows NT Service Pack **after** installing/reinstalling RAS. This is necessary because most Service Packs include RAS-related files that are newer than the files on the NT distribution media.

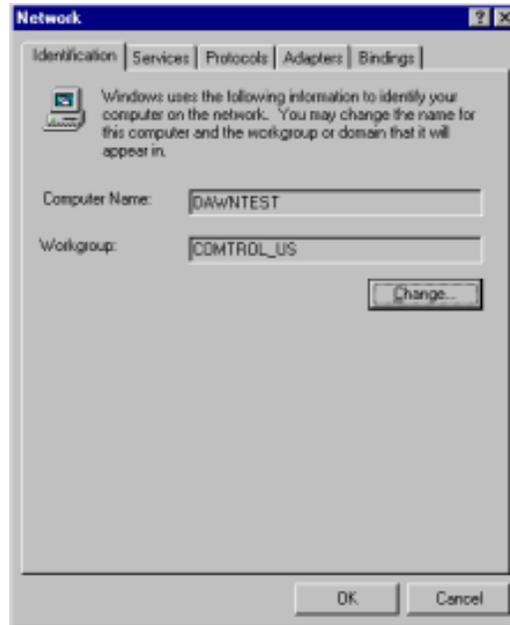
## Adding or Reconfiguring a RAS Device

There are several different ways to start this procedure:

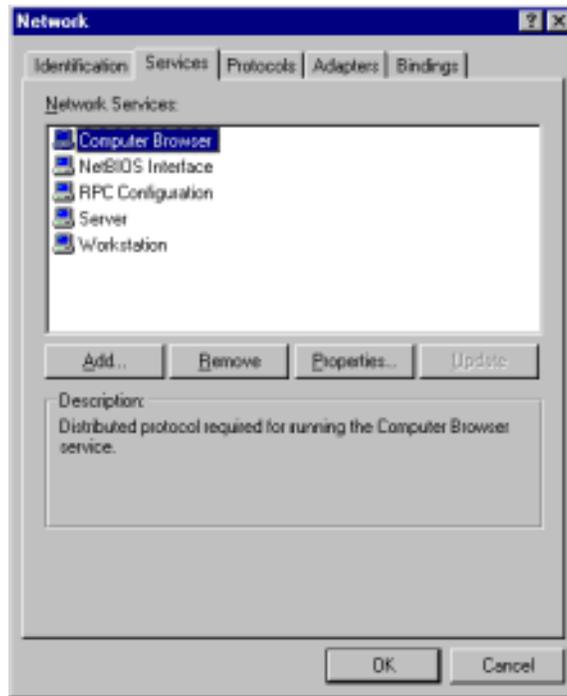
- If you have previously installed RAS and configured at least one RAS device, and are now adding or reconfiguring RAS devices, begin with [Step 1](#).
- If you have previously installed RAS and were in the process of installing a modem when this process started automatically, begin with [Step 3](#).
- If you were in the process of installing RAS when this process started automatically, begin with [Step 5](#).

Follow these steps:

1. Open the Control Panel and start the **Network** applet, or right-click on the Network Neighborhood and select **Properties**.

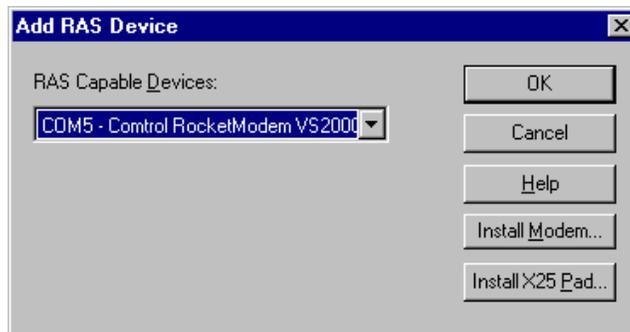
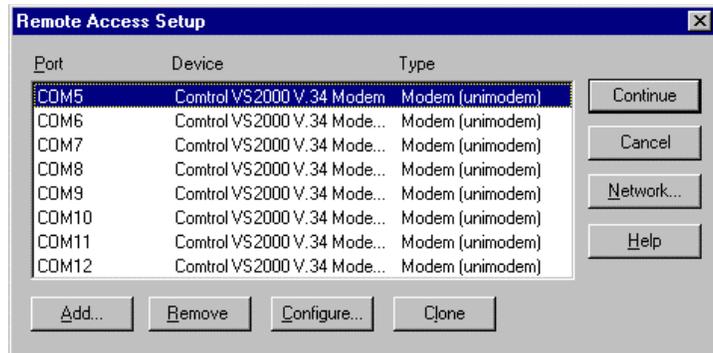


2. If Windows NT 4.0, select the Services tab.



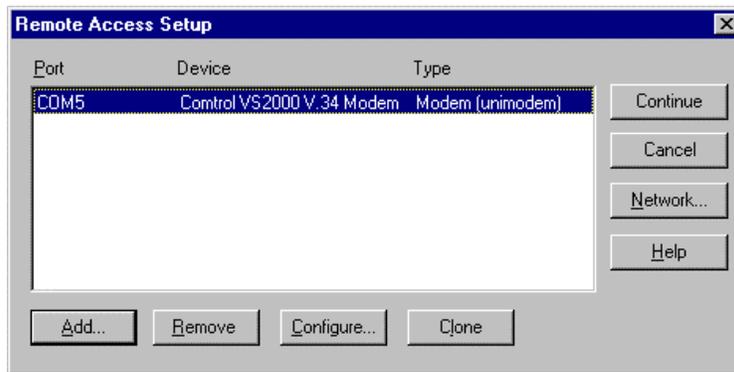
If Windows NT 3.51, highlight the Remote Access Service selection and click OK.

3. Highlight Remote Access Service and click the Properties button. The Remote Access Setup window displays:
4. To reconfigure an existing RAS port, highlight the port/device and click the Configure button. Then go to [Step 7](#).
5. To add a new RAS device—for example, if you are configuring a new modem—click the Add button. The Add RAS Device window displays:

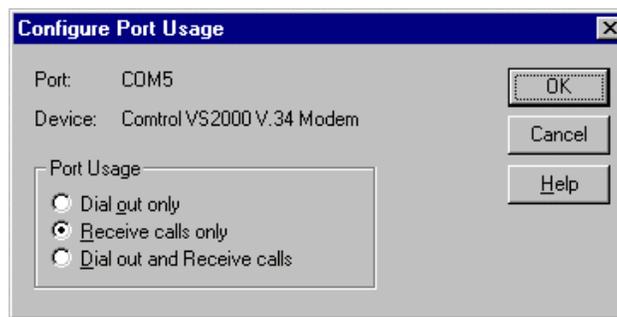


6. Use the droplist to select the COM port (modem) that you want to configure and click the OK button.  
**Note:** If no modems appear on this list, you need to install a modem, see [Installing Modems](#).

7. Highlight the desired COM port (Modem) and click the **Configure** button. .



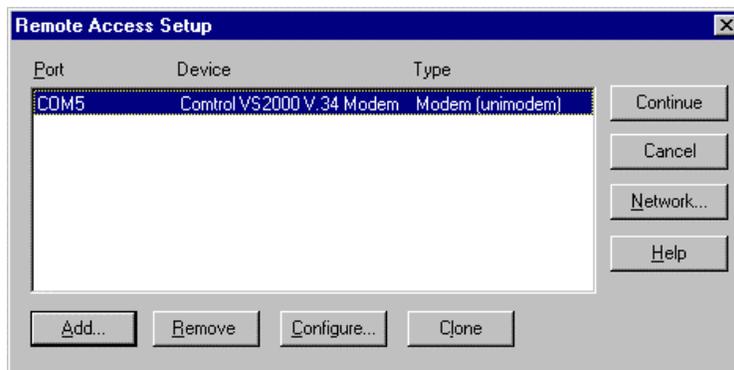
8. Select the appropriate radio button, based on the role the modem will perform, and click the **OK** button..



**Note:** When configuring multiple simultaneous RAS dial-in ports, configure the ports to “Receive calls only” not “Dial out and Receive.” Configuring a port to dial-out requires a separate memory pool for each dial-out port, while all ports configured for receive-only share the same memory pool.

*If you configure too many ports for dial-out unnecessarily, resources can become an issue. If you require dial-out on the RAS server, configure one port to “Dial out and Receive” and all the other ports to “Receive calls only.”*

The Remote Access Setup window displays again.



9. Highlight the COM port (modem) again and click the Network button.

10. Select the appropriate dial out protocols, dial in protocols, logon security levels, enable multilink (if required) and click OK.

**Note:** Only previously configured protocols are selectable. If you want to set up a protocol that is grayed out, you must first add it using the Network Protocols tab.

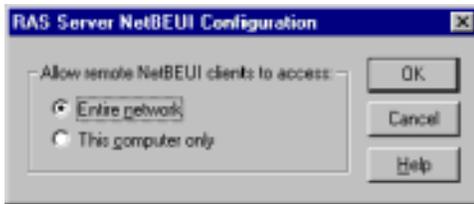
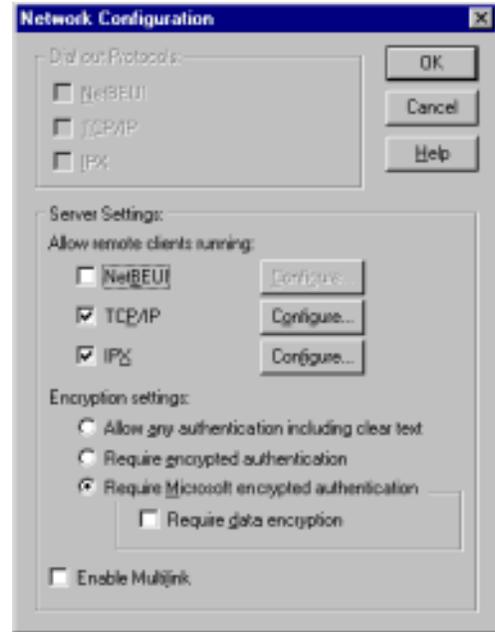
If you selected "Receive calls only" on all ports while configuring the port usage, the "Dial out Protocols" area will be shaded.

**Windows NT 4.0:** If you want to use Multilink PPP (bonding), make sure that you click the **Enable Multilink** checkbox.

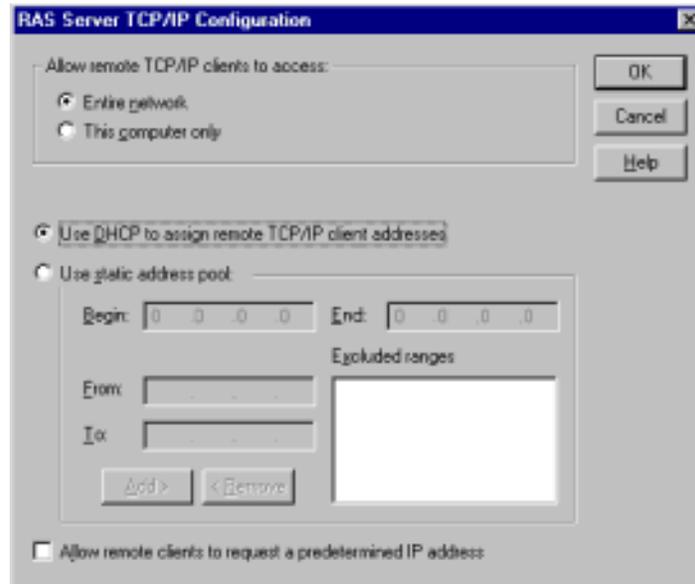
For detailed information about the configuration screens, use the Help button or the Windows NT CD-ROM (**Support/books/server.hlp** file to locate information).

**Note:** The following steps are dependent upon the protocol selections made in this screen.

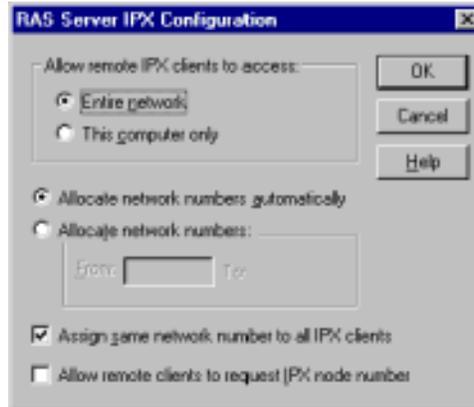
11. If you select NetBEUI on the Network Configuration screen, the following window displays. Make the appropriate selection for your environment and click OK.



12. If you select TCP/IP, the following window displays. Make the appropriate selections for your environment and press OK.



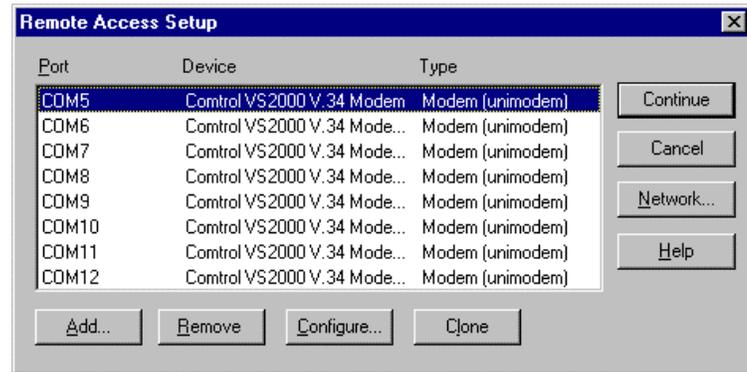
13. If you select IPX, the following window displays. Make the appropriate selection for your environment and press **OK**.



14. Click **OK** to exit the Network Configuration screen and return to the Remote Access Setup screen.

**Note:** Choices made during network configuration will effect the entire system.

15. If you want to duplicate the configuration you just created on any other COM port (modem), highlight the COM port number and click **Clone**. Otherwise, repeat [Steps 7 through 14](#) for each COM port (modem) you want to set up.



16. After setting up all the COM ports, click the **Continue** button.

17. Click the **Close** button at the Network/Services tab to complete the RAS installation.

18. Click **Yes** when asked to reboot the computer.

Windows NT RAS installation is complete.

19. If necessary, install the latest NT Service Pack or Packs from Microsoft.

## Adding Serial Printers

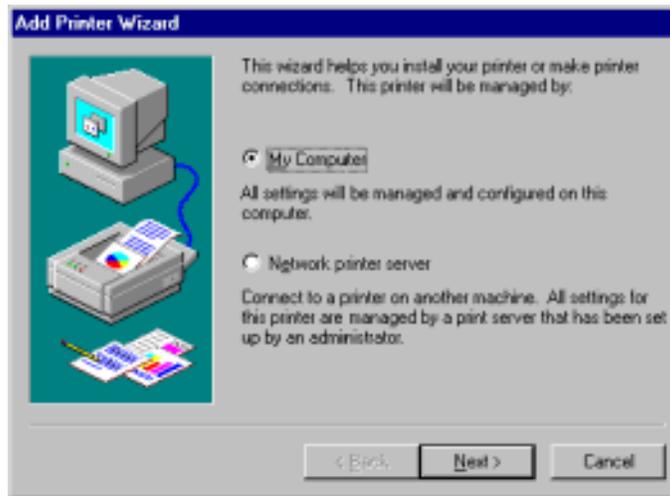
Use this subsection to configure printers for the RocketPort after installing the RocketPort hardware and driver.

Follow these steps to configure a serial printer in Windows NT:

1. Connect the printer to the desired port. Use a DTE-to-DTE null modem cable unless the printer maker specifies otherwise.
2. Open the Printers control panel and double-click on the **Add Printer** icon.

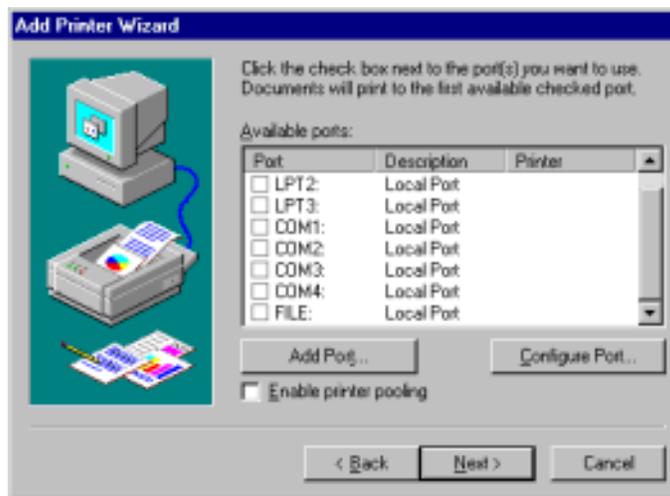


3. Click the My Computer checkbox, then the Next button.

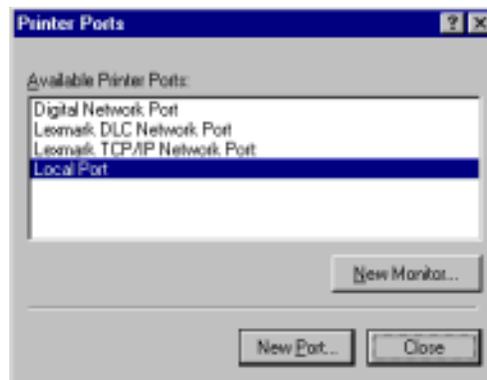


**Note:** This differs from Windows NT 3.51. Under NT 3.51, printers on Control ports are network devices.

4. If the desired COM port is on this screen, select it, click on the Next button, and skip to [Step 6](#).



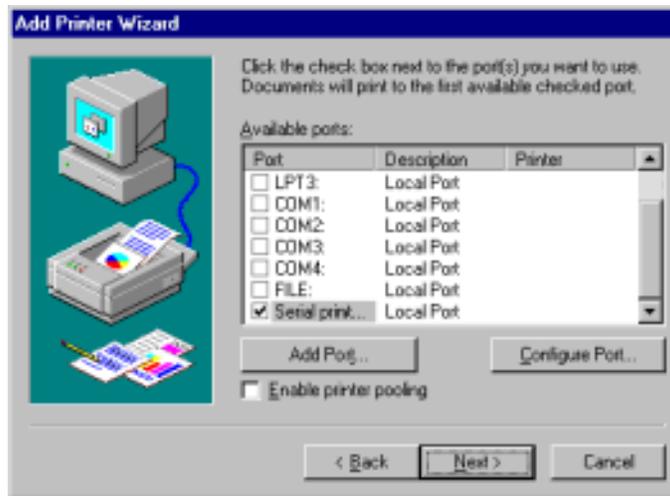
5. If the desired COM port is not on this list, click the Add Port button and follow these steps:
  - a. A list of printer ports is displayed. Click Local Port.



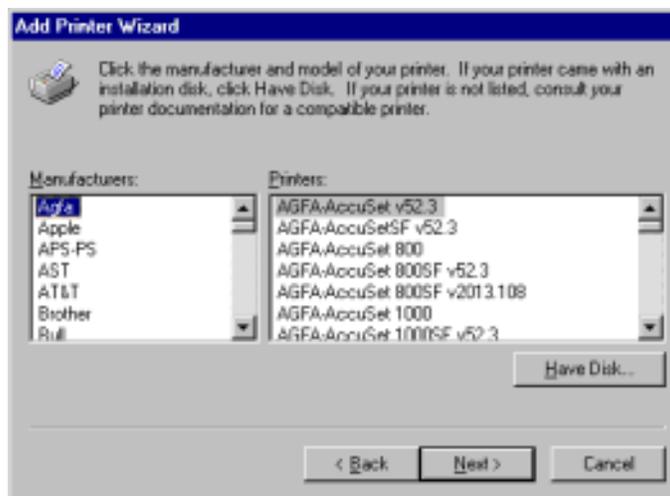
- b. Click New Port.
- c. Type in the name of the port.

**Note:** Port names above COM9 require the \\.\ prefix. For example, to reference COM12, enter \\.\COM12.

- d. Click the **OK** button.
- e. Click the **Close** button to return to the Add Printer Wizard.
- f. Click the **Next** button.



- 6. Select the printer make and model and click the **Next** button.



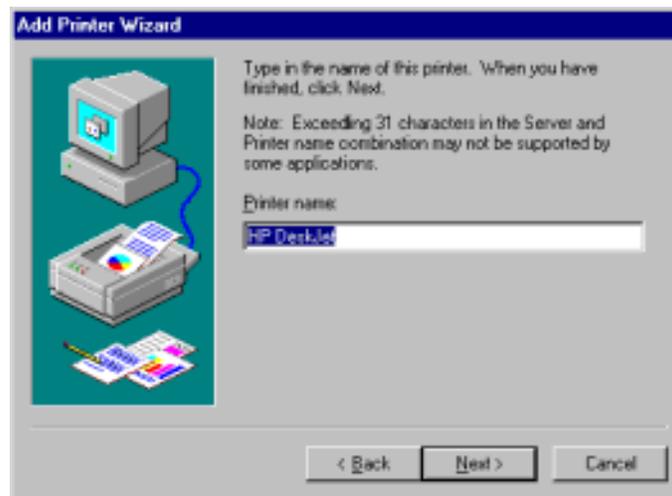
If your printer is not on the make and model lists, but you have a manufacturer-supplied printer diskette, click the **Have Disk** button.

If you have already installed another printer using this driver, you are asked if you want to keep the existing driver.

- 7. To keep the driver: check **Keep existing driver**, click **Next**, and go to [Step 8](#).

If you choose **Replace existing driver**, or if you have not previously installed this driver, you are prompted to insert either the Windows NT CD-ROM or the manufacturer's printer diskette. Do so and click **Next**.

8. Select whether you want this printer to be the Windows NT default printer, and click on the Next button.



9. Select whether or not you want to share this printer with other computers on the network. If you select **Shared**, you are asked to indicate the operating systems of all the computers that will be sharing this printer. (You may also be required to insert the operating system media so that Windows NT can extract the necessary driver files.)
10. Select whether to print a test page and click on the **Finish** button.  
You are now ready to begin using the printer. No reboot is needed.

## Changing Printer Port Configuration

If the printer does not successfully print the test page, it may be necessary to change the port baud rate, parity, and so on. If the Ports applet does not configure the port properly, you may have to use the **mode** command from a DOS prompt. Also, check the printer for DIP switches or other hardware configuration options.

## Changing Printer Port Assignment

To change the port assigned to a printer, follow these steps:

1. Open the Printers control panel.
2. Right-click on the icon for the printer you want to change.
3. Select the **Properties** option from the menu. The Properties window is displayed.
4. Click the **Ports** tab.

**Note:** *The Properties window also gives you access to printer test and setup options that can be very helpful when debugging a serial printer installation.*

5. Check the port you want to switch to. Remember to change your cabling accordingly.

**Note:** *The Configure button on the Ports tab does not recognize Control ports. This is a limitation of Windows NT. If you need to reconfigure the port, use the Ports option on the Control Panel.*

6. Click on the **OK** button. Any changes you make take effect immediately. No reboot is needed.

## Troubleshooting

If you are having trouble with a Control device, try the following.

**Note:** Most customer problems reported to [Technical Support](#) 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. Enable the **Verbose Event Log** feature under the [Setup Options tab](#) and then reboot the server.
3. Verify that you are addressing the port correctly. In many applications, device names above COM9 require the prefix \\.\ in order to be recognized. For example, to reference COM20, use \\.\COM20 as the file or port name.
4. Use the [Test Terminal](#) program (wcom32.exe) to troubleshoot communications on a port-by-port basis.
5. Use the [Port Monitor](#) program (portmon.exe) to check for errors, modem control, and status signals. In addition, it provides you with raw byte input and output counts.
6. Use the [Peer Tracer](#) program (peer.exe) to trace driver events.
7. Remove and reinstall the driver.

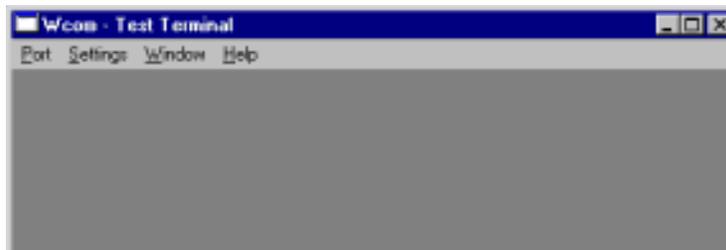
## Using Test Terminal

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.

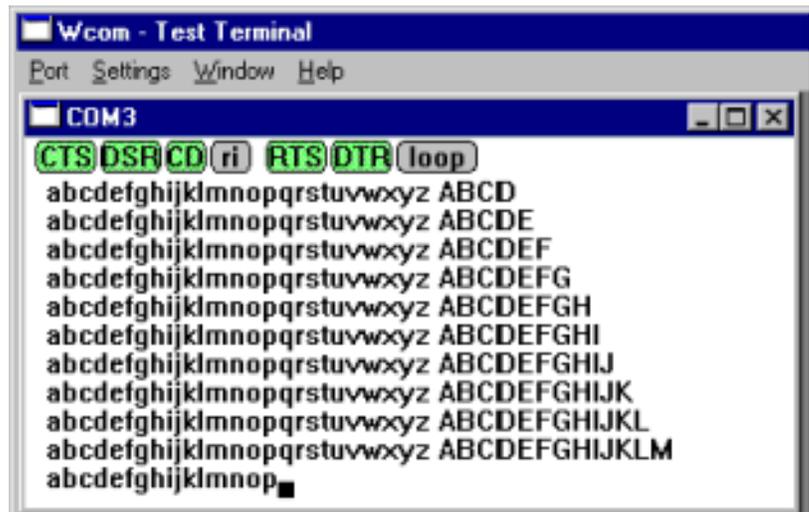
Follow these steps:

1. To start WCOM32, select **Test Terminal** from the Control program group. The program window displays:



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:

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



## Testing a RocketPort

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 fanout cable. Contact Control 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 **atdtphonenumber**. 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:  RTS  DTR

**Note:** 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 Control 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 Control 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.

Device	Open	CTS	DS	ICD	RTS	DTI	TxTotal	RxTotal	TxCPSInst	RxCPSInst
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
COM10	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

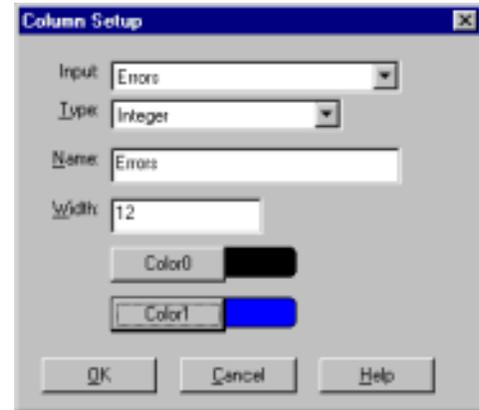
Desired Change	Procedure
Change the monitor window font.	Select <b>Font</b> from the <b>Edit</b> menu.
Change width of a single column.	Left-click on the column separator (vertical) line and drag it to the desired width.
Change column placement.	Left-click in the middle of the column you want to move 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 <b>Add</b> 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 [page 37](#).

## Column Setup

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

- 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.



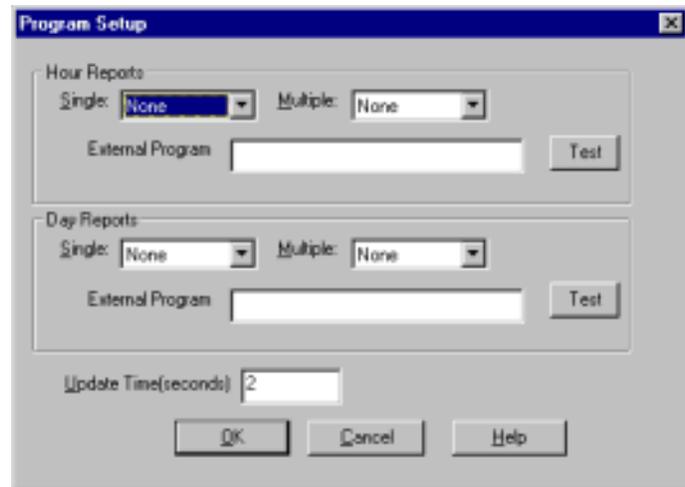
## Report Configuration

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 on-screen are included.



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.view`
- `calcs.dat`

The default column layout is saved in `portmon.view`. 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 `.view` 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.view` 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.

**Port Monitor Variable List**

<b>Variable</b>	<b>Description</b>
Open	Open status, on if open, off if closed.
Cts	Input CTS pin status.
Dsr	Input DSR pin status.
Cd	Input CD (carrier detect) pin status.
Rts	Output RTS pin status.
Dtr	Output DTR pin status.
TxTotal	Total bytes transmitted.
RxTotal	Total bytes received.
TxCPSInst	Instantaneous average of transmit characters per second.
RxCPSInst	Instantaneous average of receive characters per second.
Errors	Total hardware receive errors (parity, framing, and overruns.)
TxMinCPS	Last minute average of transmit characters per second.
RxMinCPS	Last minute average of receive characters per second.

**Port Monitor Variable List (Continued)**

<b>Variable</b>	<b>Description</b>
TxCPSMinAvMax	Peak TxCPSInst for the last minute.
RxCPSMinAvMax	Peak RxCPSInst for the last minute.
TxCPSHourAvMax	Peak TxMinCPS for the last hour.
RxCPSHourAvMax	Peak RxMinCPS for the last hour.
TxCPSDayAvMax	Peak TxMinCPS for the last day.
RxCPSDayAvMax	Peak RxMinCPS for the last day.
TxTotalRaw	Total number of transmit bytes raw data from the driver.
RxTotalRaw	Total number of receive bytes raw data from the driver.
TxMinCnt	Count of transmit bytes sent in last minute.
TxHourCnt	Transmit bytes count sent in the last hour.
TxDayCnt	Transmit bytes count sent in the last day.
RxMinCnt	Receive bytes count sent in the last minute.
RxHourCnt	Receive bytes count sent in the last hour.
RxDayCnt	Receive bytes count sent in the last day.
TxMinCntWrk	Transmit bytes count sent in this minute.
TxHourCntWrk	Transmit bytes count sent in this hour.
TxDayCntWrk	Transmit bytes count sent in this day.
RxMinCntWrk	Receive bytes count sent in this minute.
RxHourCntWrk	Receive bytes count sent in this hour.
RxDayCntWrk	Receive bytes count sent in this day.
TxCPSMinAvMaxWrk	Peak TxCPSInst for the current minute.
TxCPSHourAvMaxWrk	Peak TxMinCPS for the current hour.
TxCPSDayAvMaxWrk	Peak TxHourCPS for the current day.
RxCPSMinAvMaxWrk	Peak RxCPSInst for the current minute.
RxCPSHourAvMaxWrk	Peak RxMinCPS for the current hour.
RxCPSDayAvMaxWrk	Peak RxHourCPS for the current day.
CDRuns	Carrier detect turn-on count.
CDDayRuns	Carrier detect turn-on count in the last day.
CDDayRunsWrk	Carrier detect turn-on count in the current day.
CDRunTime	Time in seconds carrier detect has been on.
CDHourRunTime	Time in seconds carrier detect has been on in the last hour.
CDDayRunTime	Time in seconds carrier detect has been on in the last day.
CDHourRunTimeWrk	Time in seconds carrier detect has been on this hour.
CDDayRunTimeWrk	Time in seconds carrier detect has been on this day.
StatusFlags	Bit flags, Open, CTS, DSR, CD, RTS, DTR
TxPkts	Raw count of total transmit packets sent.
RxPkts	Raw count of total receive packets sent.
OverrunErrors	Total count of receive overrun errors.

### Port Monitor Variable List (Continued)

Variable	Description
FramingErrors	Total count of receive framing errors.
ParityErrors	Total count of receive parity errors.
OverrunErrorsRaw	Total count of receive overrun errors, from the driver.
FramingErrorsRaw	Total count of receive framing errors, from the driver.
ParityErrorsRaw	Total count of receive parity errors, from the driver.

## 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 NT 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`.

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

### Starting Peer

Peer Tracer does not appear in the Control program group. To use it, you must open Windows Explorer, access the `C:\WINNT\system32\rocket` 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**.

### Peer Tracer Commands

Command	Effect
MON TX	Monitor data being transmitted through the selected port.
MON RX	Monitor data being received through the selected port.
M	Turn off all monitoring.
?	Display Peer Tracer command summary.
PORT COM $_{xx}$	Change port being examined to COM $_{xx}$ .

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.

### Technical Support

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

You should review [Troubleshooting](#) and run through the diagnostics before calling Technical Support.

**Note:** The web site has [On-Line Technical Support](#) available.

In addition, please have the following information available.

#### Support Call Information

Item	Information
Hardware type	
Hardware serial number*	
Operating system type	
Driver part number and revision level	
Server computer make, model, and speed	
Devices connected to the adapter	

#### Control Headquarters

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FAQ On-line Help: [www.comtrol.com/coperate.htm](http://www.comtrol.com/coperate.htm)

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