Device Driver User Guide

Windows 10
Windows Server 2016
Windows 8/8.1
Windows Server 2012R2
Windows 7

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Table of Contents

Overview

This section discusses the following topics:

Comtrol Drivers Management Console

This *User Guide* discusses how to install and configure Comtrol device drivers using the *Installation Setup Wizard* and the *Comtrol Drivers Management Console* for the device driver.

The *Comtrol Drivers Management Console* is accessible through the Windows *Control Panel* using a dedicated shortcut created during the initial device driver installation process. The *Comtrol Drivers Management Console* allows you to browse all installed and supported Comtrol products in one place and apply any changes quickly.

Note: *This User Guide discusses Comtrol adapters, see the DeviceMaster Device Driver User Guide for Windows for DeviceMaster specific information.*

You can refer to *Using the Comtrol Drivers Management Console* on Page 19 for general information about the *Comtrol Drivers Management Console*.

Supported Operating Systems

The *Comtrol Drivers Management Console* supports the following operating systems:

- Windows 10, Windows 8.1, Windows 8, and Windows 7
- Windows Server 2016 and Windows Server 2012R2

Note: *You can refer to downloads.comtrol.com for older operating system support.*

Products Supported

These are the products supported by the *Comtrol Drivers Management Console*:

- DeviceMaster LT
- DeviceMaster PRO, DeviceMaster RTS, and DeviceMaster Serial Hub
- RocketPort EXPRESS
- RocketPort EXPRESS SMPTE
- RocketPort INFINITY

Conventions

In the remainder of this *User Guide*, the products are referred to accordingly:

- **Comtrol device** unless there is model-specific information
- **DeviceMaster** means the DeviceMaster models listed in the previous subsection
- **RocketPort** means any RocketPort model
- **RocketPort EXPRESS/INFINITY** means RocketPort EXPRESS, RocketPort EXPRESS SMPTE, and RocketPort INFINITY

Downloading the Latest Software and User Guides

You can use the following table to locate the latest version of the software and documentation.

Software or Document	Description
Device Driver 	The device driver supports Windows operating systems. as discussed in *Supported Operating Systems* on Page 5.
User Guide for Windows (this Guide) 	This *User Guide* supports all Comtrol adapters in the *Comtrol Drivers Management Console*.
Bootable Diagnostics 	You can download and create a bootable Diagnostics CD.
Comtrol Utility 	You can use the Comtrol Utility to test or monitor ports. The Comtrol Utility includes Test Terminal and Port Monitor.
RocketPort EXPRESS User Guide 	This *User Guide* provides adapter and interface installation procedures. It also provides information about connecting serial devices.
RocketPort EXPRESS SMPTE User Guide 	This *User Guide* provides adapter and interface installation procedures. It also provides information about connecting serial devices.
RocketPort INFINITY User Guide 	This *User Guide* provides adapter and interface installation procedures. It also provides information about connecting serial devices.

Device Driver Installation

This section discusses the following topics:

Overview

If there is a device driver already installed on your system for the RocketPort, see *Updating the Driver* on Page 14 or *Adding an Adapter (Existing Installation)* on Page 18.

Installation Setup Wizard

You can use the following procedure to install the device driver and the *Comtrol Drivers Management Console*, which is used to configure the driver.

1. Locate the latest driver assembly (**.exe**) for your product and copy it to a location that is available to the host.

   Note: *Administrative privileges are required to install device drivers on Windows operating systems.*

2. Close any applications that are using serial ports before the device driver installation.

3. Install the adapter and connect the interface (Quadcable, Octacable, or interface box). If you need hardware installation procedures, see *Downloading the Latest Software and User Guides* on Page 6) to locate the *User Guide* for your adapter type.

Do not connect RS-422/485 devices until the appropriate port interface type has been configured in the device driver. The RocketPort default port setting is RS-232, except for SMPTE models, which are set to RS-422.

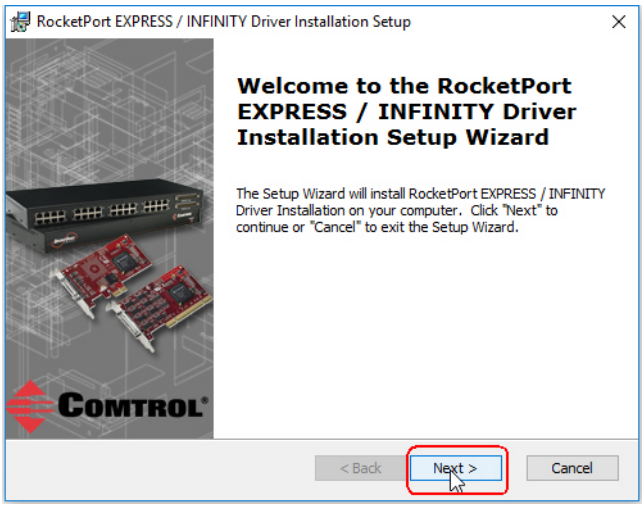
4. Click **Cancel** if a *Found New Hardware* message appears.

5. Start the installation by executing the **.exe** file for your adapter.

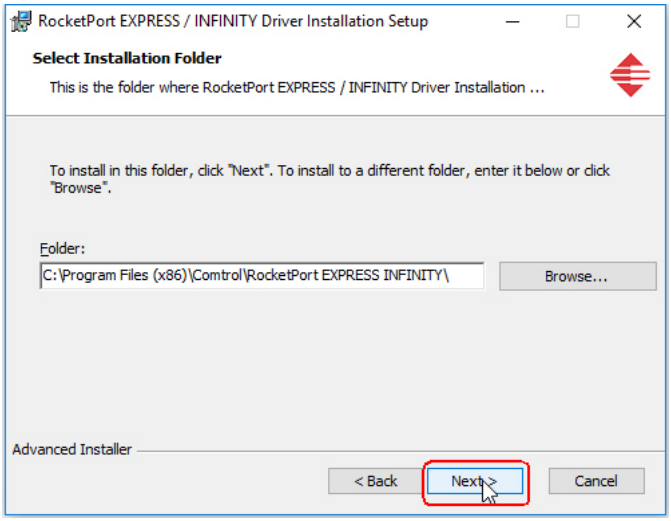
   Driver assembly file names include the driver version number.

   For example, **RP_EXPRESS_INFINITY_Windows_*x.xx*.exe**, where ***x.xx*** is the driver assembly version.

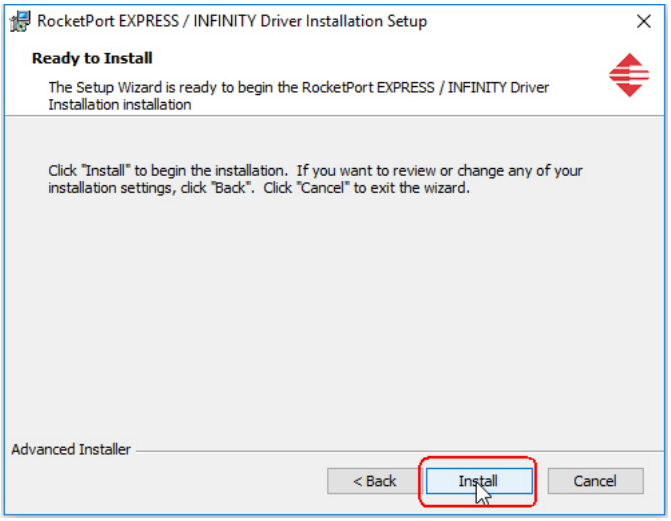
6. Click the **Yes** button to the *Do you want to allow this app to make changes to your device* message.
7. Click **Next** to start the installation process.



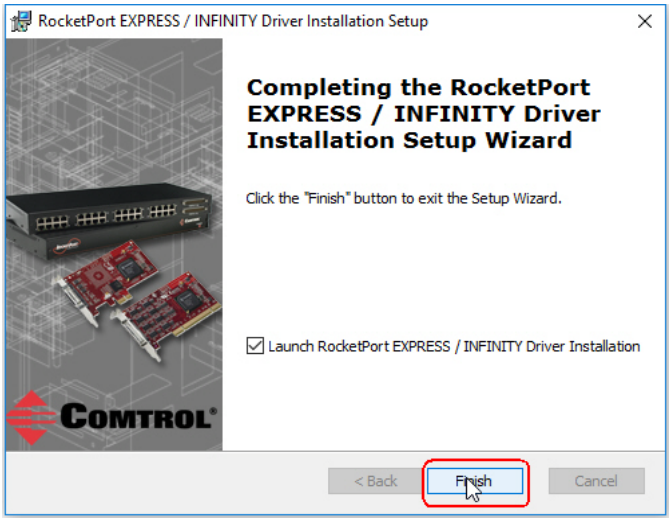
8. Optionally, enter a different location to install the driver files.



9. Click **Install**.

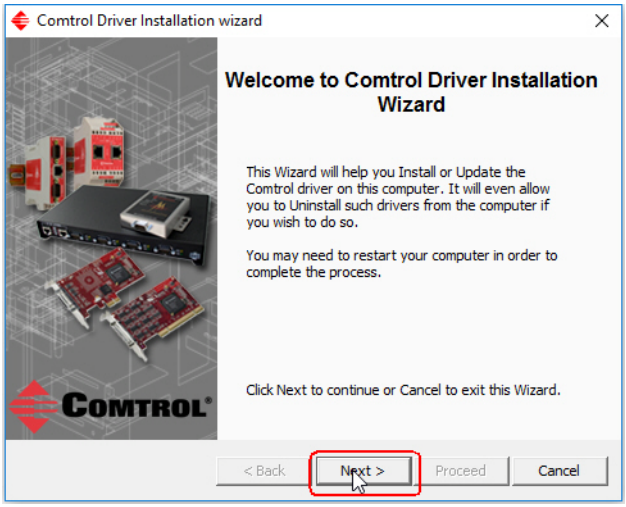


10. Leave the **Launch RocketPort EXPRESS/INFINITY Driver Installation** box checked and click **Finish**.

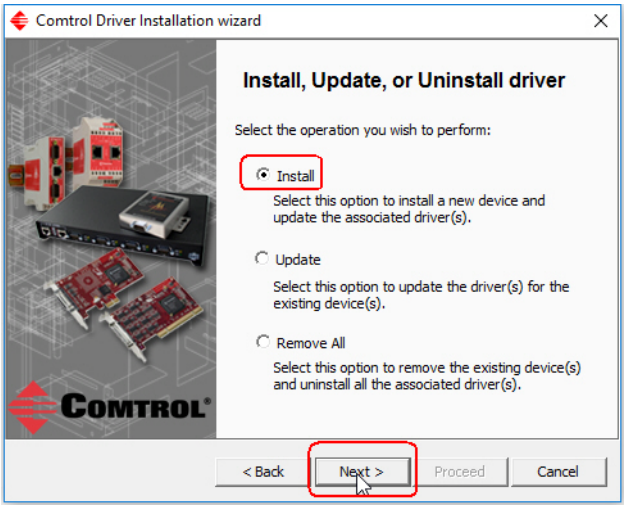


If you do not check this box, you can use the shortcut under the **Start** button at the location for your adapter type to start the driver installation: **Comtrol> RP EXPRESS INFINITY Driver Installation Wizard**

11. Click **Next** to install the driver.

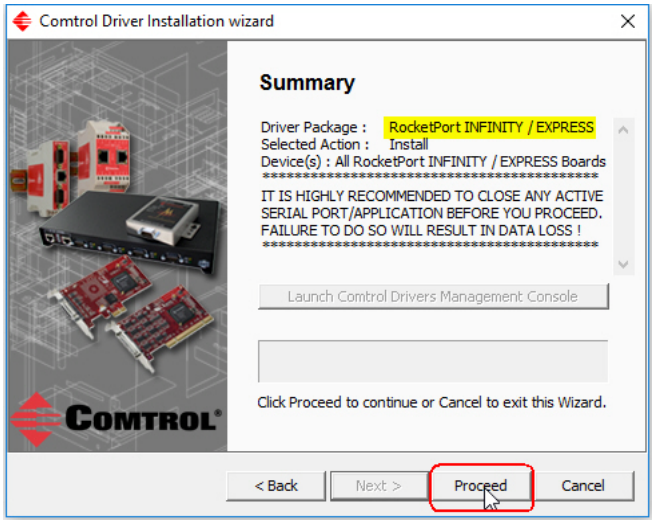


12. Click **Install** and **Next**.

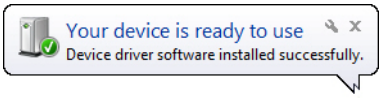


13. Click **Next**.

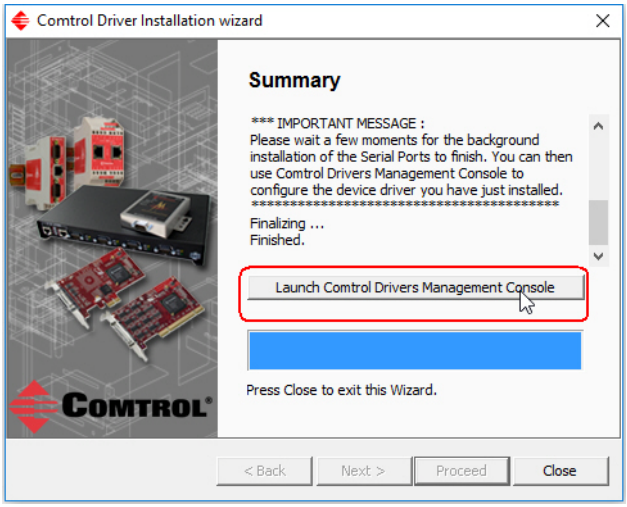
14. Click **Proceed**.



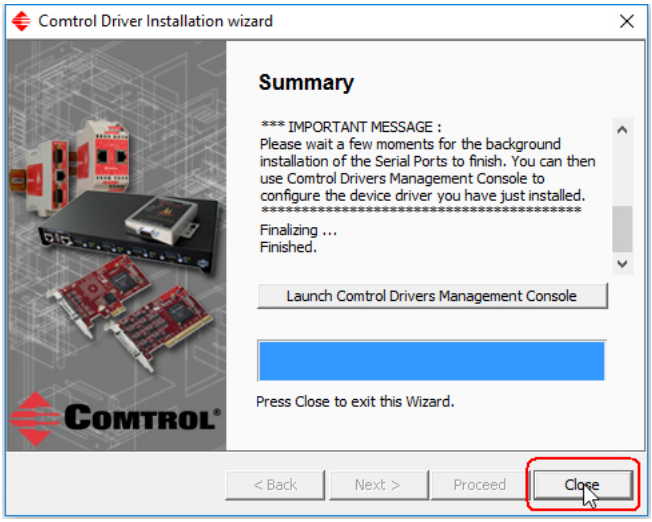
You may see this popup for each device.



15. Click the **Launch Comtrol Drivers Management Console** button.



16. Return to the *Installation wizard* and click **Close** to exit the wizard.



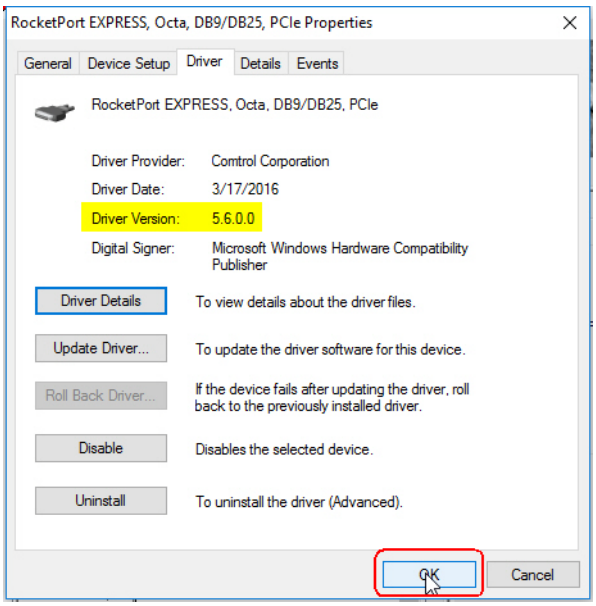
17. Go to *Configuring COM Port Properties* on Page 27 to configure the COM port properties for RocketPort adapters
18. If desired, go to *Configuring Device Properties* on Page 25 to set up advanced device properties (device name and starting COM port number).

After driver installation and configuration, connect the serial devices to the ports. For information about the RocketPort connectors, refer to the appropriate *User Guide* (Page 6).

Checking the Device Driver Version

You can check the driver version using the following procedure.

1. In the **Comtrol Drivers Management Console**, right-click the Comtrol device and click **Properties**.
2. If necessary, click the **Driver** tab to view the device driver version.



Note: *Please note that Microsoft truncates leading zeros in the versions number. The above driver version is 5.06.*

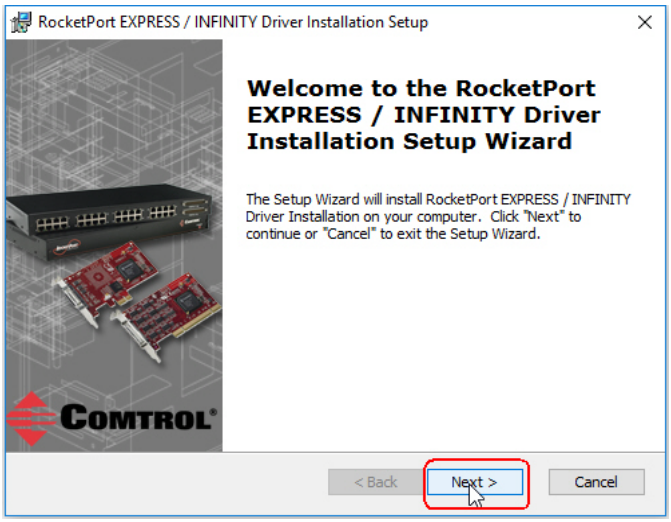
If necessary, you can update the device driver using the next subsection.

Updating the Driver

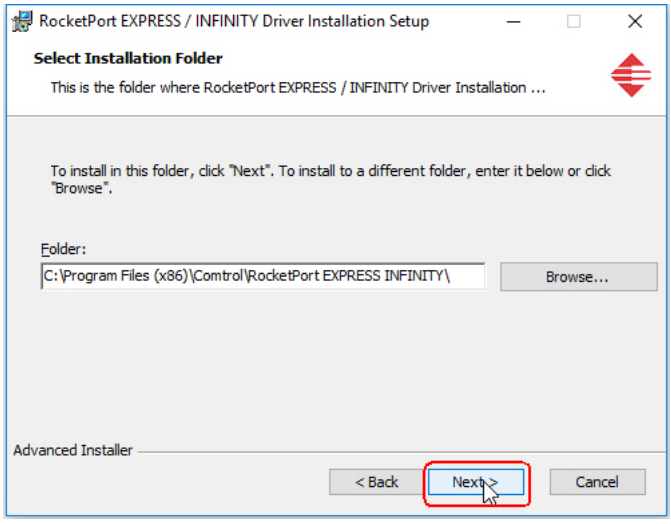
Use the following procedure to update the RocketPort device driver after initial installation.

If you are unsure what driver version is running, see *Checking the Device Driver Version* on Page 13.

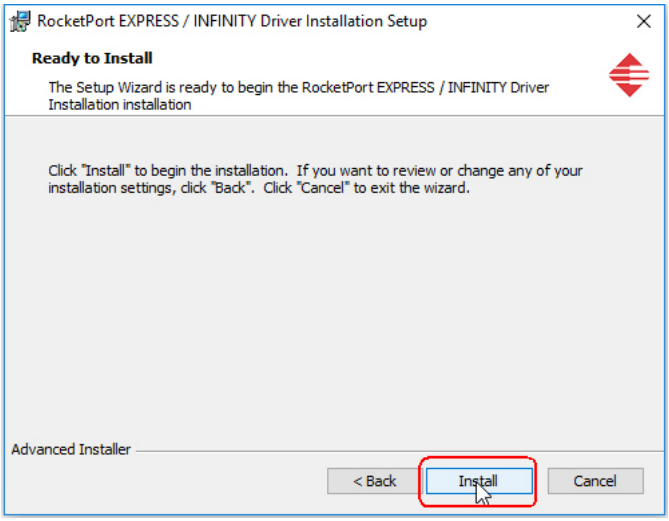
1. Locate the latest device driver assembly (Page 6) and copy it to a location that is available to the host.
2. Close any applications that are using serial ports before the device driver installation.
3. Start the update by executing the **.exe** file.
4. Click **Next** to start the *Installation Setup Wizard*.



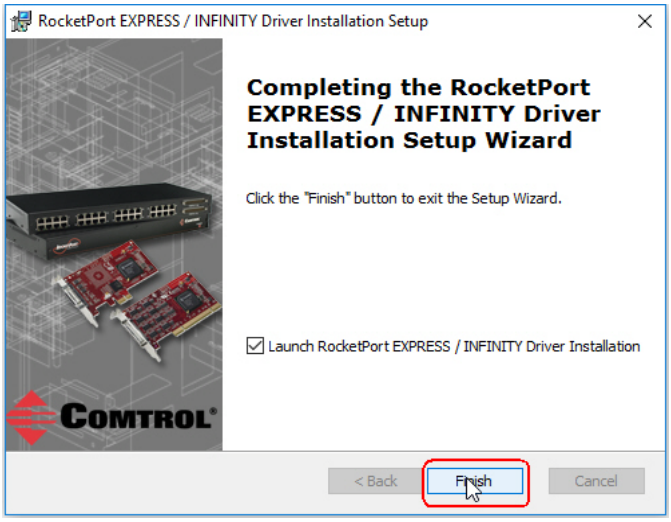
5. Optionally, enter a different location to install the latest device driver files.



6. Click **Install**.

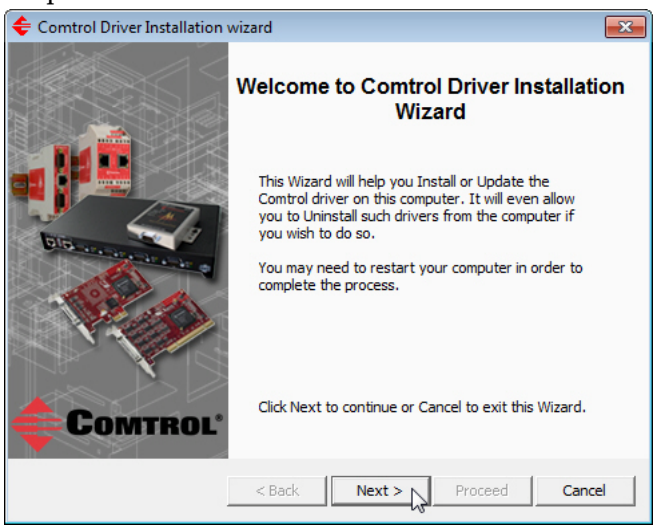


7. Leave the **Launch RocketPort EXPRESS/INFINITY Driver Installation** box checked and click **Finish**.



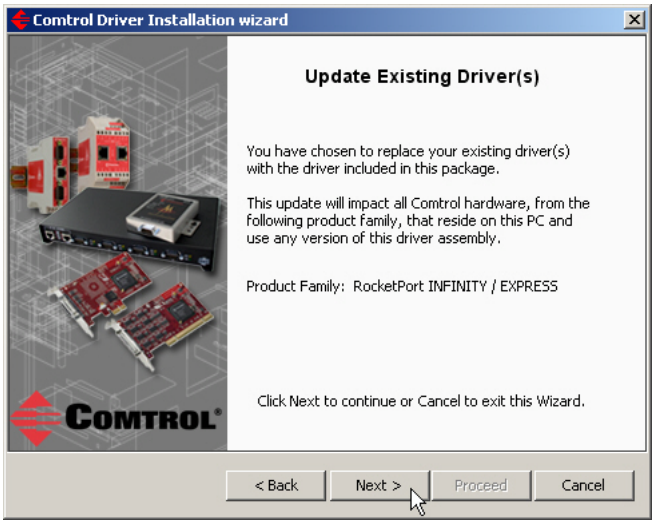
If you do not check this box, you can use the shortcut under the **Start** button at the location for your adapter type: **Comtrol> RP EXPRESS INFINITY Driver Installation Wizard.**

8. Click **Next** to update the driver.

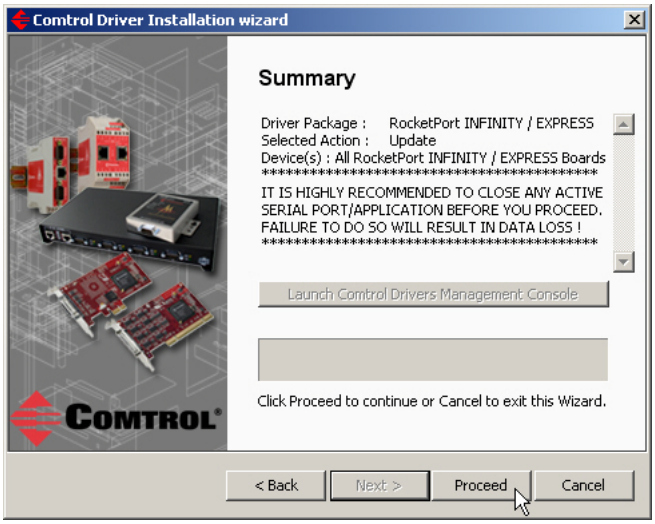


9. Click **Update** and **Next**.

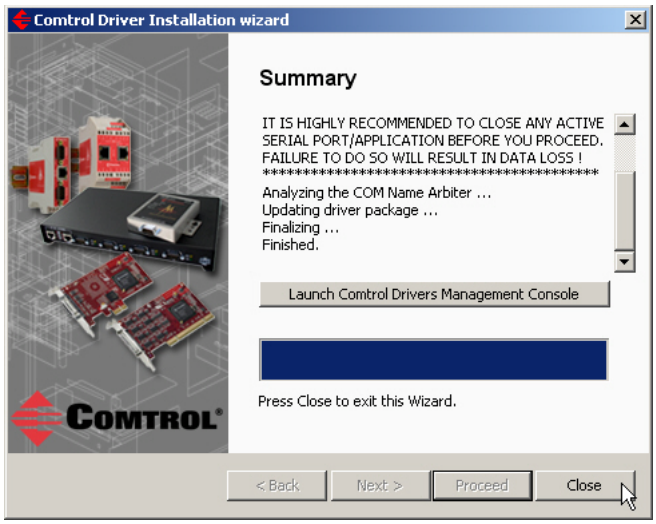
10. Click **Next** to update the driver.



11. Click **Proceed**.



12. Click the **Launch Comtrol Drivers Management Console** button to configure the ports or device properties.
13. Return to the *Installation wizard* and click **Close**.



14. If necessary, go to *Configuring COM Port Properties* on Page 27 to configure the COM port properties for RocketPort adapters.
15. If desired, go to *Configuring Device Properties* on Page 25 to set up advanced device properties (device name and starting COM port number).

Adding an Adapter (Existing Installation)

Use the following procedure to add an adapter to an existing RocketPort installation.

1. Close any applications that are using serial ports before the device driver installation.
2. Install the adapter and connect the interface (Quadcable, Octacable, or interface box).

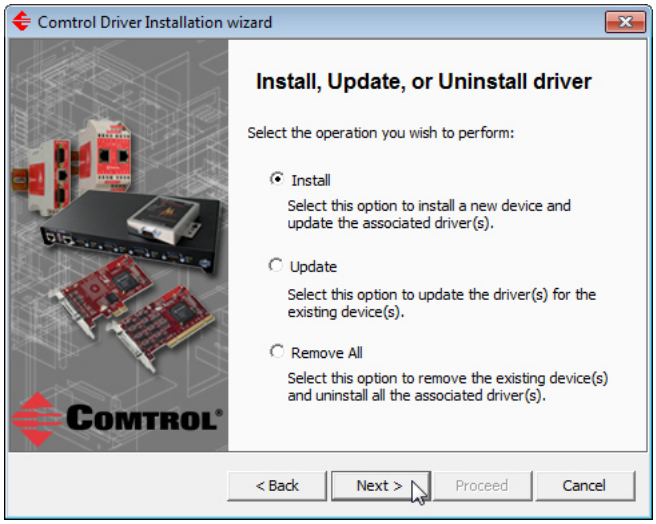
   If you need hardware installation procedures, see *Downloading the Latest Software and User Guides* on Page 6).

Caution

Do not connect RS-422/485 devices until the appropriate port interface type has been configured in the device driver. The default port setting is RS-232.

3. Click **Cancel** if a *Found New Hardware* message appears.
4. From the **Start** button, click: **Comtrol> RP EXPRESS INFINITY Driver Installation Wizard.**
5. Click **Next** to start the *Comtrol Driver Installation Wizard*.

6. Click **Install** and **Next**.



7. Click **Next** and follow the *Installation Wizard*. Refer to *Step 12* on Page 11, for the remainder of the installation steps if needed.

Device Driver Configuration

This section discusses the following topics:

Using the Comtrol Drivers Management Console

This subsection discusses basic *Comtrol Drivers Management Console* operations, such as:

See *Configuring Device Properties* on Page 25 to start configuration procedures for your adapter.

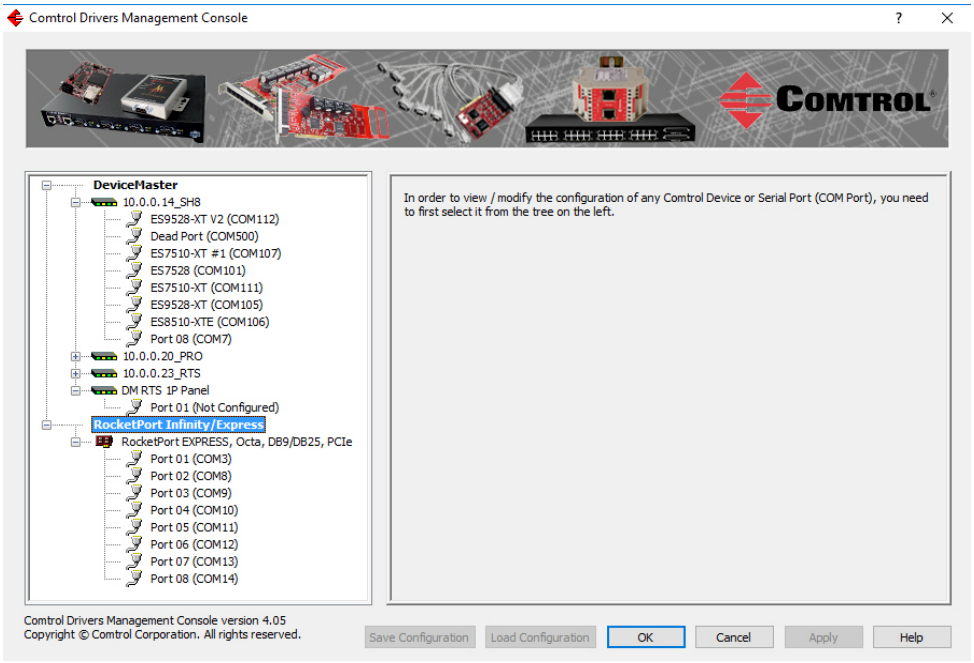
Accessing the Comtrol Drivers Management Console

Accessing the *Comtrol Drivers Management Console* can be done using one of the following methods:

- *Windows Control Panel*; go to your *Control Panel* and click on the **Comtrol Drivers Management Console**.
- *Shortcut*; located under **Start > Comtrol > RP EXPRESS INFINITY Driver Management Console**.

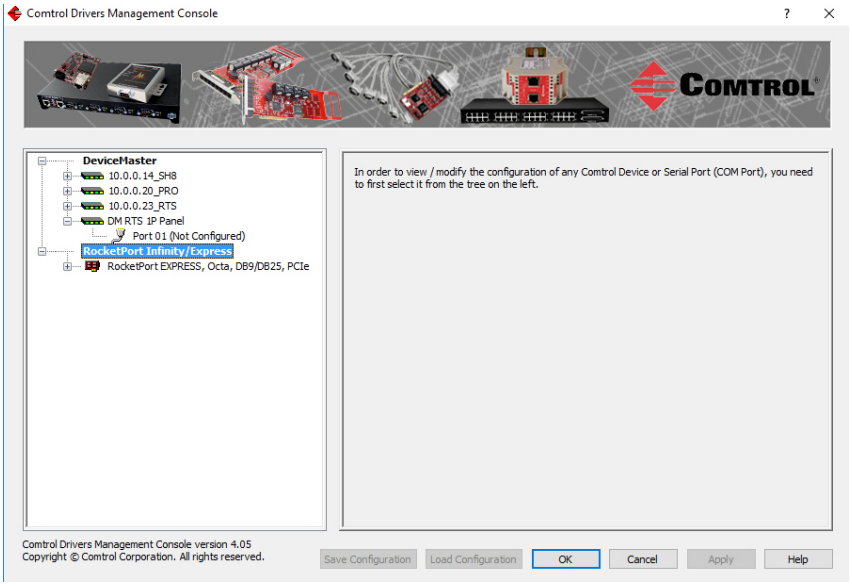
Displaying All Installed Devices

The *Comtrol Drivers Management Console* opens and displays all products for which a device driver was installed.



Collapsing the View

To collapse the view, click **-** in the *Tree View* pane to close the selected family. To view a family or device, click the **+** to open the selected family.



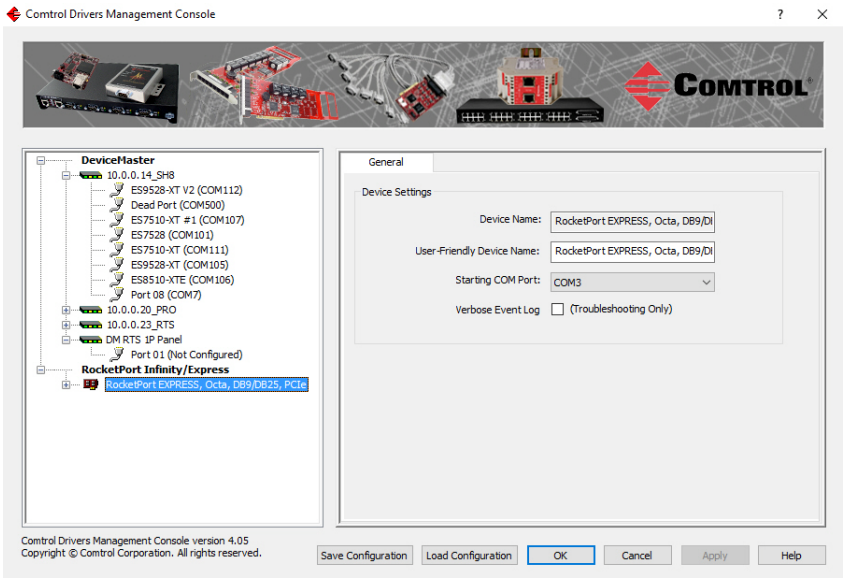
How to Configure Device Properties

This overview discusses changing device properties for a product. Highlight the device name of the product that you want to configure in the *Tree View* pane. Make any necessary changes.

- Click **Apply** to save the changes, which saves the changes and leaves the *Comtrol Drivers Management Console* open.
- Click **Ok** to save the changes and close the *Comtrol Drivers Management Console*.
- Click **Cancel** to close the *Comtrol Drivers Management Console* without saving the changes.

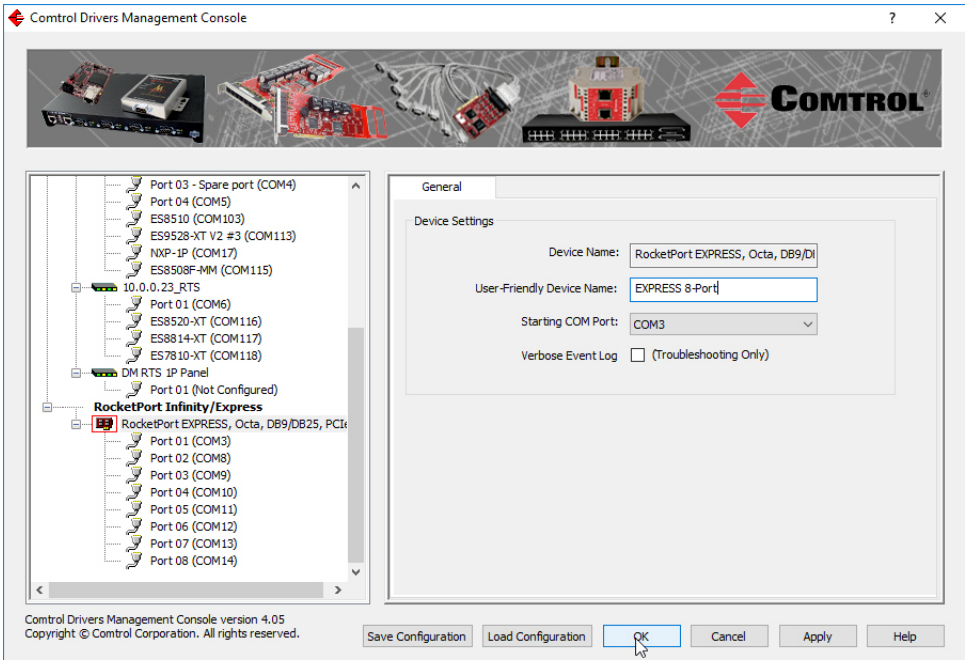
If you click a port or device name without saving the changes, the *Comtrol Drivers Management Console* prompts you to **Apply**, **Ignore**, or **Cancel** the changes.

For more information, see *Configuring Device Properties* on Page 25.



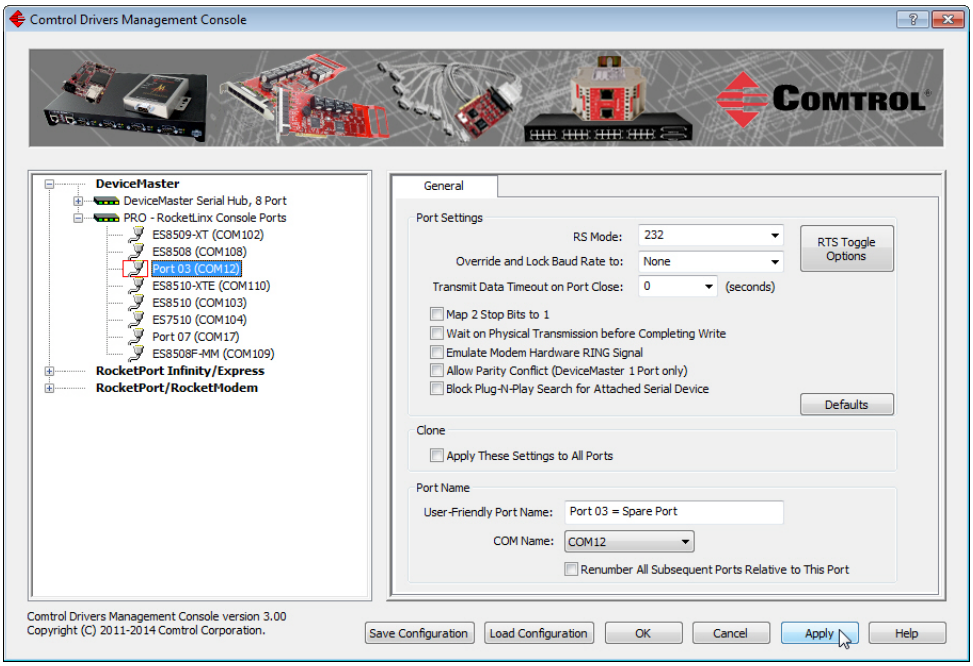
Customizing the Device Name

Change the default *Device Name* on the **Device General** tab by changing the name in the **User-Friendly Device Name** field and saving the change.



Customizing the COM Port Name

Change the default *Port Name* on the **Port Settings General** tab by changing the name in the **User-Friendly Port Name** field and saving the change.



How to Configure COM Port Properties

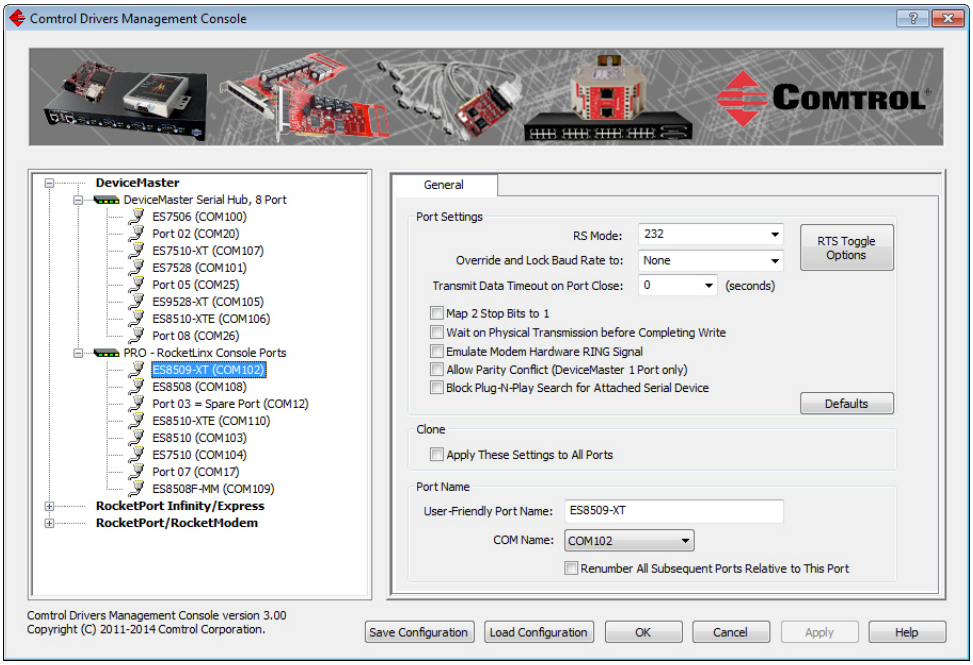
To change a port's properties for a product, highlight the port of the product that you want to configure in the *Tree View* pane. Make any necessary changes:

- Click **Apply** to save the changes, which saves the changes and leaves the *Comtrol Drivers Management Console* open.
- Click **Ok** to save the changes and close the *Comtrol Drivers Management Console*.
- Click **Cancel** to undo the changes and close the *Comtrol Drivers Management Console*.

If you click another port or device name without saving the changes, the *Comtrol Drivers Management Console* will prompt you to **Apply**, **Ignore**, or **Cancel** the changes.

For more information, see *Configuring COM Port Properties* on Page 27.

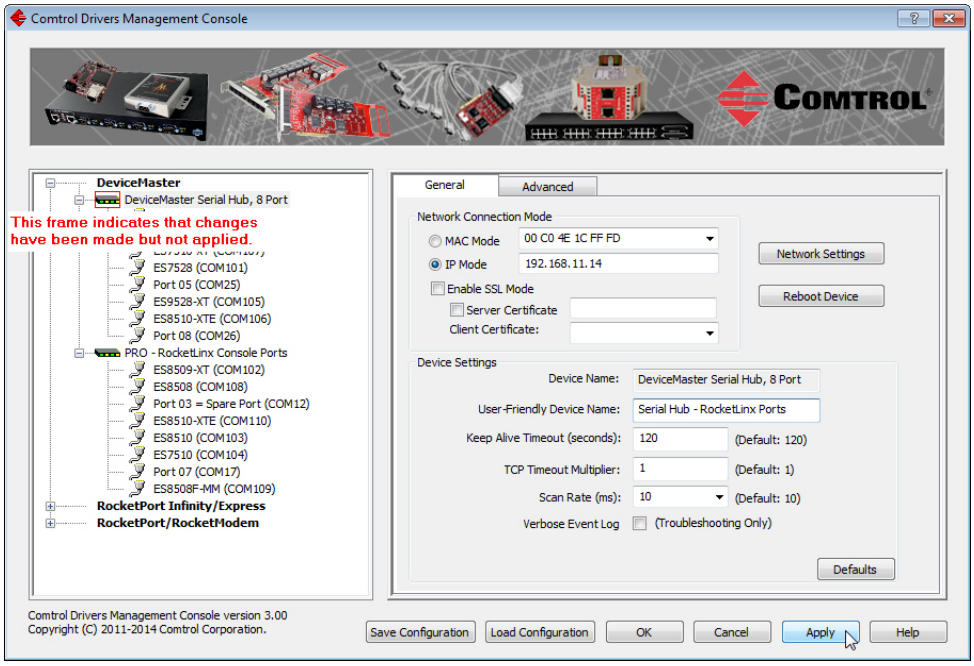
After saving the port changes, if desired, you can click **Apply These Settings to All Ports** to populate the remaining ports with these COM properties.



How to Save Changes

The *Comtrol Drivers Management Console* indicates that changes have been made on this screen with a red frame that identifies which device's **General** tab you are editing.

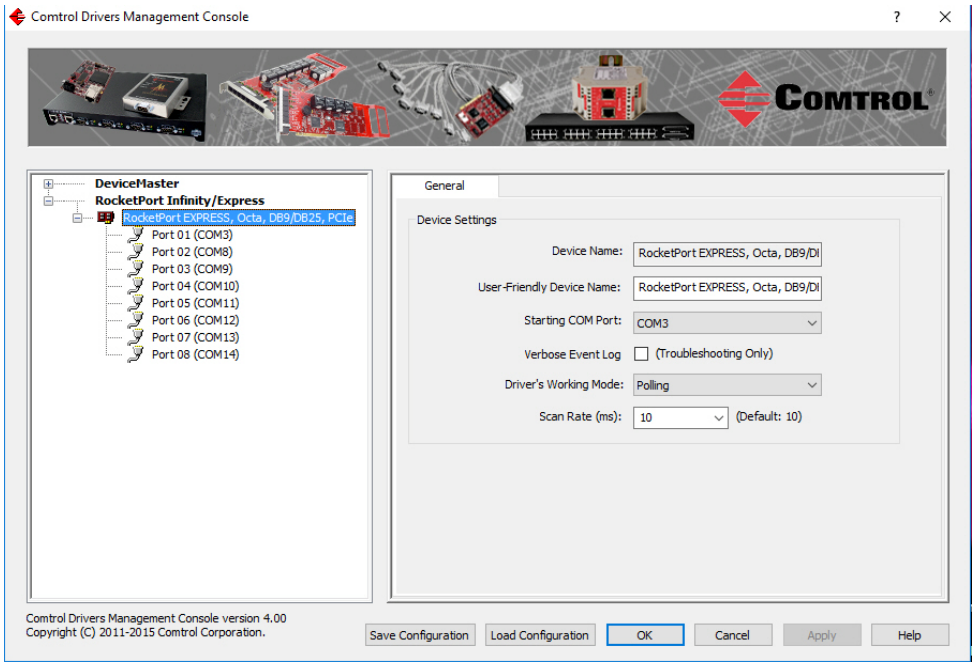
- Clicking the **Apply** button saves the changes on the tab and leaves the *Comtrol Drivers Management Console* open for further configuration.
- Clicking the **Ok** button saves the changes on that tab and closes the *Comtrol Drivers Management Console*.
- Clicking the **Cancel** button cancels the changes on that tab and closes the *Comtrol Drivers Management Console*.



Configuring Device Properties

Use the following procedure to change device settings on an adapter

1. Open *Comtrol Drivers Management Console* (*Accessing the Comtrol Drivers Management Console* on Page 19).
2. Highlight the adapter device name that you want to configure.



3. If desired, change the **User-Friendly Device Name**.
4. If desired, set a Starting COM Port number value.
5. Optionally, click **Verbose Event Log** if you want to log additional RocketPort information into the event log.
6. Select the *Driver's Working Mode*.
7. Optionally, select a different Scan Rate (ms) (Page 26).
8. After making your changes, click **Apply** if you have additional configuration procedures or click **Ok** if you have completed configuring your Comtrol devices.

   Note: *If you do not **Apply** the changes, you will be prompted to **Apply**, **Ignore**, or **Cancel** the changes.*

The following table provides detailed information about **Device General** tab options for the RocketPort.

Device General Tab	Description
Device Name	This is the default name assigned by the driver and it cannot be changed. You can use the **User-Friendly Device Name** field to provide custom device names for your installation.
User-Friendly Device Name	Use this field to enter a more descriptive name. The name that you assign is not saved until you click **Apply** or **OK.**
Starting COM Port Number	You can change the starting COM port number in the drop list for this adapter. In addition, you can use **Starting COM Port** to set nonsequential starting COM port numbers for each adapter, thus leaving gaps in the COM port numbering sequence. When you change the starting COM port number, the driver assigns that COM port to the first port on this adapter and all other port numbers follow in sequence. Do not overlap COM port numbers between devices or other adapters because if you do so, the overlapping ports are disabled.
Verbose Event Log **Default = Disabled**	Selecting this option causes detailed messages to be sent to the operating system *Event Log*. This added information can be useful when debugging communications and configuration problems
Driver's Working Mode	Select the mode that meets your application requirements. **Polling** (default) • Smaller packets • Lower volume • Faster I/O (Low Latency) • Predictability (Based on Scan rate) • Perfect for low baud rates or low volume transfer where the operation is time critical. **Interrupts** • Larger packets • Higher volume • The speed of I/O depends on the volume of data • Unpredictable • Perfect for high baud rate, high volume data transfer.
Scan Rate (ms)] **Default = 10ms**	Typically, you should leave the scan rate set to the default value (10 ms) for most applications. To adjust latency for time-critical applications, select a longer or shorter interval from the droplist, or type in the rate (2 to 50). If a value larger than 50 is entered, the maximum of 50 is implemented. ***Note:*** *The faster the scan rate (lower number), the higher the load on the system processor.*
Save Configuration	Click *Save Configuration* to save the *Device Settings* for use on another similar Comtrol device or to archive a copy of your environments settings.
Load Configuration	Click to *Load Configuration* to load the *Device Settings* previously saved using the **Save Configuration** feature. ***Note:*** *You cannot a load configuration file from different models. For example, you cannot load a configuration file for a RocketPort INFINITY on a RocketPort EXPRESS.*

Device General Tab	Description
Ok	Click **Ok** to save the changes made on this page and close the *Comtrol Drivers Management Console*.
Cancel	Cancels any changes made on this page.
Apply	Click **Apply** to save the settings on this page. If you do not click **Apply** before leaving this page, you will be prompted to **Apply** or **Cancel** the changes.

Configuring COM Port Properties

This section discusses COM port configuration procedures for RocketPort ports. If you want to change the starting COM port number on the RocketPort, see *Configuring Device Properties* on Page 25.

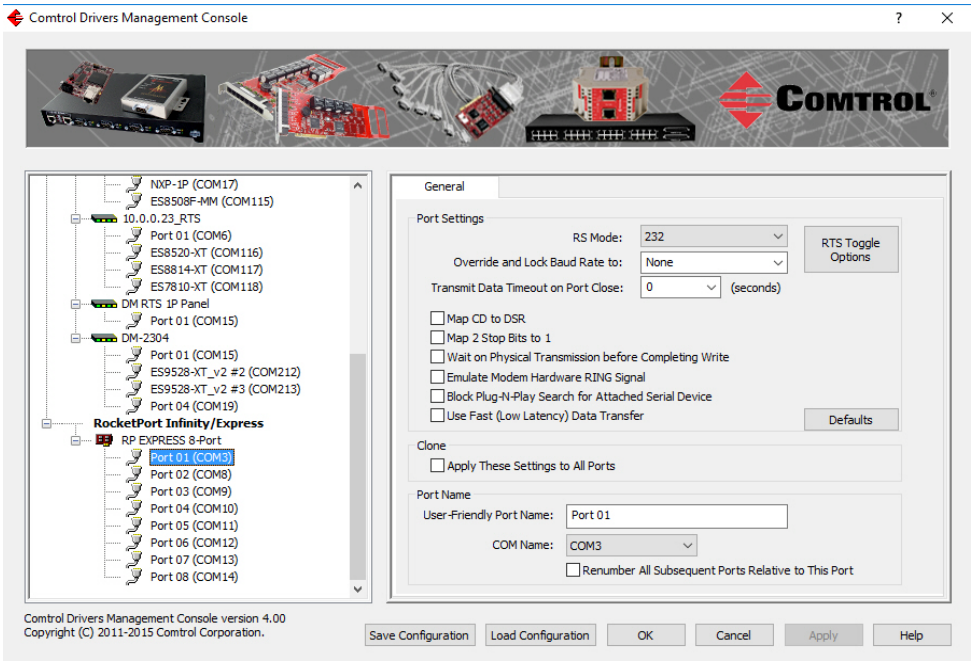
If your application does not set COM port properties, use the *Device Manager* to access Ports (COM & LPT) to change the port parameters. If the application sets COM port properties, those settings take precedence over Windows COM port settings. The exception to this guideline is if you use the **Override and Lock Baud Rate** to option.

Use the following procedure to change COM port settings on a RocketPort port or ports.

Caution

Do not connect RS-422/485 devices until the appropriate port interface type has been configured in the driver. The driver default port setting is RS-232.

1. Open *Comtrol Drivers Management Console* (Page 19).
2. Highlight the appropriate RocketPort.
3. Highlight the first port you want to configure.
4. Select the appropriate communications mode.

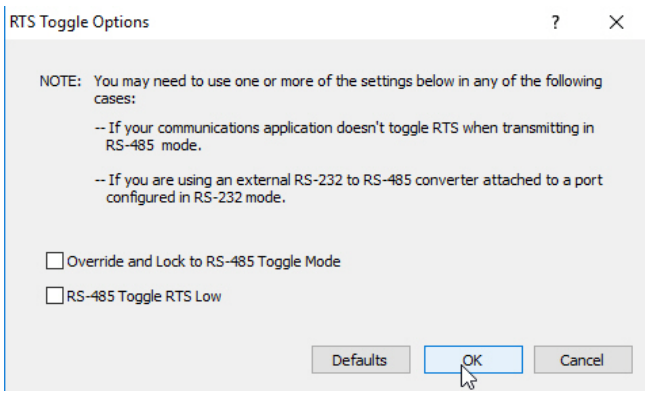


5. Enable the features that you require for your environment.

   Note: *You can use the help system or refer to the following table for*

information about each option.

6. Select the **Use Fast (Low Latency) Data Transfer** option when receiving or sending small blocks of data.
7. Optionally, click the *RTS Toggle Options* button:
   - If your communications application does not toggle FTS when transmitting in RS-485 mode.
   - If you are using an external RS-232 to RS-485 converter, which is attached to a port that is configured for RS-232.
     a. Click the appropriate options for your environment.
     b. Click **OK** to save the changes and return to the port **General** tab.



8. If desired, click the **Clone** check box to set all of the ports on this Comtrol device to these characteristics.
9. Optionally, change the **User-Friendly Port Name**.
10. If desired, select a different **COM Name** (COM port number). The drop-down list displays (in use) next to COM port numbers that are already in use in this system. Do not duplicate COM port numbers as this will cause the ports to not function.
11. Click **Apply** to save these changes.

    Note: *If you selected RS-422 mode, make sure that there is not a device attached to the port and click* **Ok**.
12. Highlight the next port that you want to configure and perform Steps 4 through 11.

The following table provides information about the options on the port **General** tab.

Port Settings General Tab	Description
RS Mode	Use this drop-down list to select the communications mode for the serial device that you will be connecting to this port. • RS-232 (default RocketPort EXPRESS and RocketPort INFINITY) • RS-422 (default RocketPort EXPRESS SMPTE) • RS-485 Mode provides these choices. - **RS-485 2-wire (half-duplex)** supports transmit and receive data. When data is transmitted, the Transmit Enable signal is activated, and the transmit receive device switches from receive to transmit automatically. - **RS-485 4-wire Master (full-duplex master)** supports transmit and receive data, which means both signals are always active. The RocketPort EXPRESS/INFINITY is enabled by the Transmit Enable signal. This mode is the same as RS-422. - **RS-485 4-wire Slave (full-duplex slave)** supports transmit and receive data. When data is transmitted, the Transmit Enable signal is activated, the transmit device goes active and starts sending data. When the data is not being sent, the transmit device is inactive. The receive device is always active. If you click RS-485, you may need to change settings in the *RTS Toggle Options* screen. ***Note:***
Override and Lock Baud Rate to **Default = None**	This option allows you to lock selected ports. You can select a value from the drop-down list or enter an appropriate value from the following standard baud rates: 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 38400, 57600, 115200, 230400, 460800, or 921600. The Quad/Octacable models support up to 921.6Kbps and the 8/16/32-port models with an interface box support up to 460.8Kbps. After locking a baud rate, no matter what baud rate is selected in a host application, the *actual* rate used is the rate specified here.
RTS Toggle Options	This button opens the RTS Toggle Options popup, which provides the following features: • **Override and Lock to RS-485 Toggle Mode** Use the **Override and Lock to RTS Toggle Mode** option to lock the port in RTS (Request to Send) toggle mode, then set the mode (low or high) as desired for RS-485 mode. • **RS-485 Toggle RTS Low** Use the **RTS Toggle RTS Low** option to toggle the RTS output signal low during data transmission, which may be needed for relay devices for RS-485. If the option box is not checked, RTS is toggled high (asserted) during data transmission for RS-485 mode. • **Defaults** Clicking the **Defaults** button returns all the values in the **RTS Toggle Options** popup to their default state: - **Override and Lock to RTS Toggle Mode** = Disabled - **RTS Toggle RTS Low** = Disabled

Port Settings General Tab	Description
Transmit Data Timeout Port Close **Default = 0**	This option allows you 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 serial devices such as printers, to give the data sufficient time to flush through the system.
Map CD to DSR **Default = Disabled**	This option is used in installations where there is no connection to the port's DSR input. Click this check box to cause the CD input to appear as DSR to the host application, and to perform hardware handshaking with CD rather than DSR.
Map 2 Stop Bits to 1 **Default = Disabled**	If your application is hard-coded to use two stop bits and you receive framing errors, click this check box to map 2 stop bits to 1 bit. Leave this check box blank to enable stop bits to pass through unchanged.
Wait on Physical Transmission before Completing Write **Default = Disabled**	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 (check box not clicked) 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 **Default = Disabled**	Click this check box to emulate the ring indicator signal. If this box is checked and the port receives a *RING* signal (or an alternate code, as defined in the AT command set for the modem), it sends an *RI* signal to the communications application.
Block PnP search for attached serial device **Default = Disabled**	This option disables plug and play from searching for a device attached to the serial port. For example, data received during device discovery on a device is assumed to be a mouse to plug and play.
Clone: Apply all the settings to all ports **Default = Disabled**	If this check box is *not* clicked, changes apply to the selected port only. If this check box *is* clicked, changes apply to all ports on this board.
Use Fast (Low Latency) Data Transfer **Default = Disabled**	Use this option when you need to send or receive a small block of data on RocketPort EXPRESS/INFINITY adapters.
User-Friendly Port Name	You can enter a custom COM port name to identify this RocketPort in the *Comtrol Drivers Management Console*.
COM Name	The **COM Name** drop list allows you to renumber this COM port. If you see a COM port number followed by (in use), this means that Plug and Play sees those COM port numbers in use by another device. If you rename the port to a COM name used by another port, a dialog appears indicating that the port is already in use.
Renumber All Subsequent Ports Relative to the Port **Default = Disabled**	Use the **Renumber All Subsequent Ports Relative to This Port** option to renumber all subsequent ports on the RocketPort relative to the port displayed in the COM name drop list.
Defaults **Default = Disabled**	Click the **Defaults** button to return to the driver default values.

Using Driver Configuration Files

The *Comtrol Drivers Management Console* supports saving device driver configuration files, which provides:

- Back-up for existing driver configuration settings
- Ability to configure multiple of the same devices with the same configuration parameters
- Save the driver configuration settings because you need to remove a driver version to install a new driver version and you want to reload the driver configuration settings into the new driver

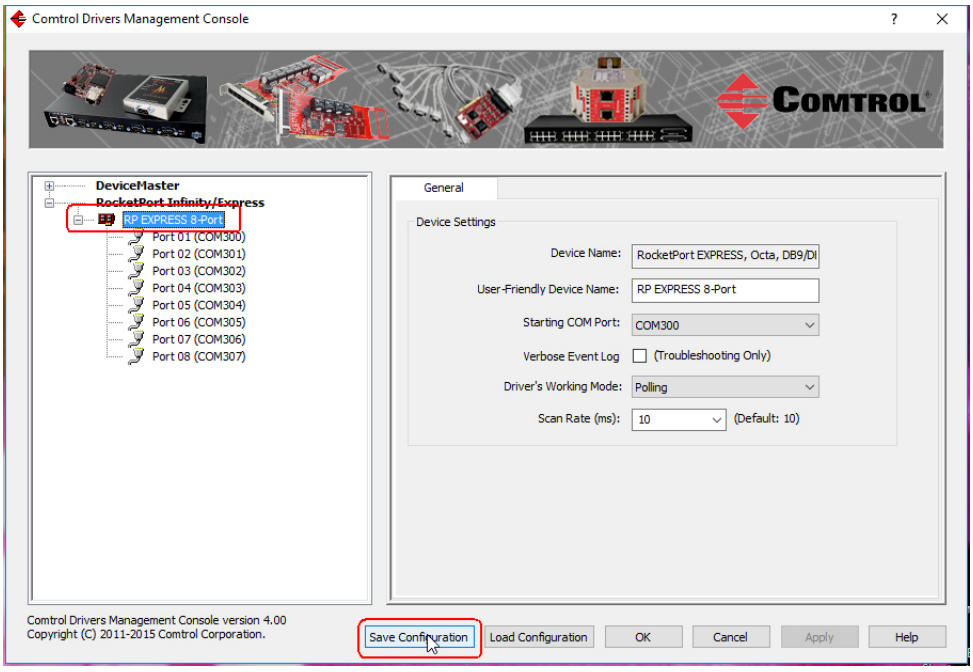
Note: *Configuration files must be for the same model with the same port density. For example, you cannot load a RocketPort EXPRESS configuration file onto a RocketPort INFINITY.*

Configuration files are saved with a **.DCF** extension.

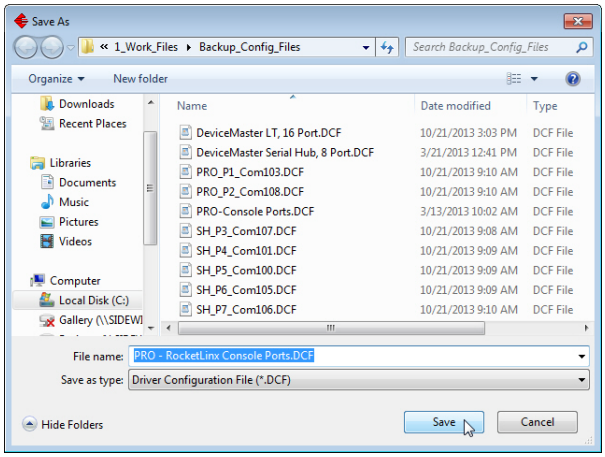
Saving Driver Configuration Files

Use the following procedure to create and save a configuration file.

1. After configuring the device and ports, click **Save Configuration**.



2. Optionally, change the default file name and click **Save**.



Loading a Driver Configuration File

You must have previously saved a configuration file before you can load a configuration file.

The driver configuration file uploads in portions:

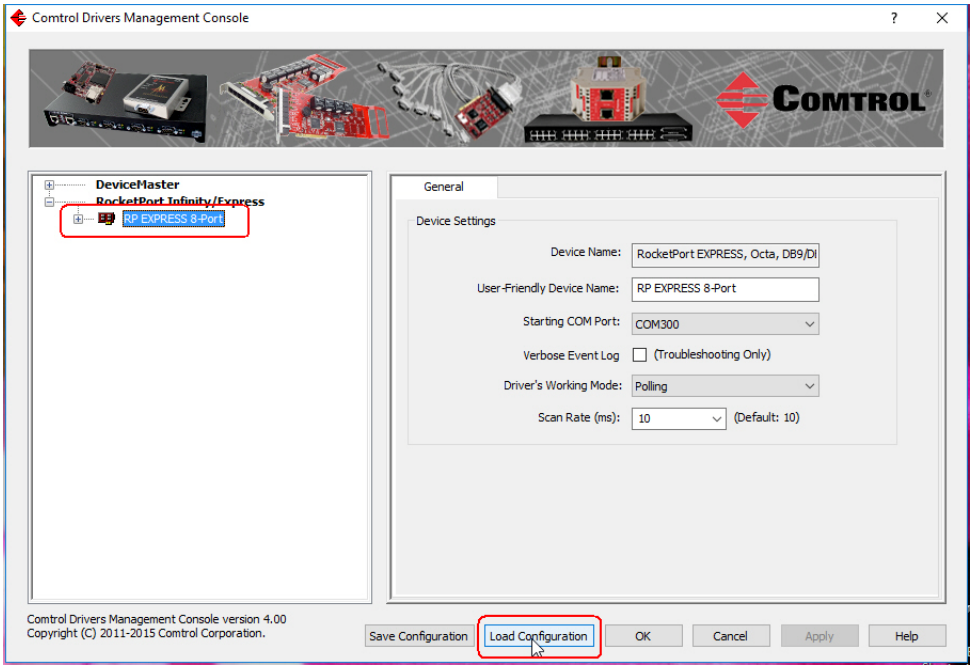
- If you highlight a device and click **Load Configuration** and **Apply** for the *device-level* configuration parameters to reload on the device.
- To load *port-level* configuration parameters, you must highlight a single port and click **Load Configuration** and **Apply**. You must upload each port's configuration parameters separately.

Loading Device Configuration

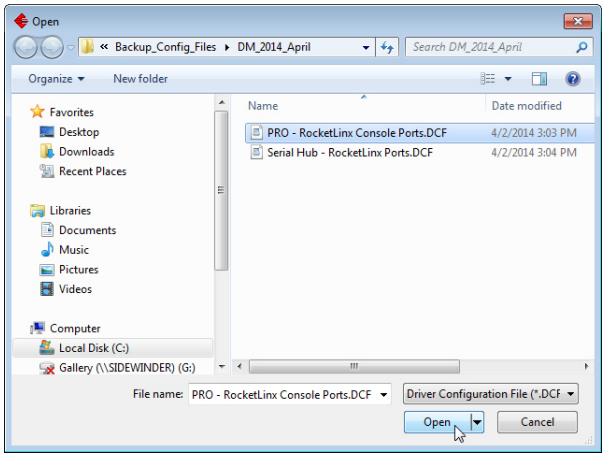
Use the following procedure to load the configuration file for device-level information for your device.

1. If necessary, open the *Comtrol Drivers Management Console* using one of these methods:
   - ***Windows Control Panel;*** go to your *Control Panel* and click on the **Comtrol Drivers Management Console**.
   - ***Shortcut***; located under **Start > Comtrol > RP EXPRESS INFINITY > Comtrol Drivers Management Console**.
2. Depending on your operating system, you may need to click **Yes** to the *Do you want to allow the following program to make changes to this computer?* User Account Control message.

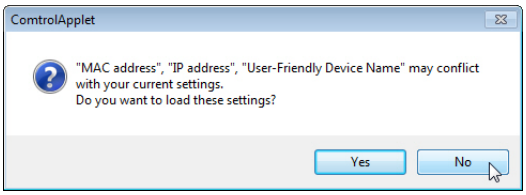
3. In the left pane, highlight the device for which you want to load the device-level settings from the configuration file.



4. Click **Load Configuration**.
5. Browse to the location of the configuration file that you want to load.
6. Highlight the configuration file and click **Open**. The configuration file loads in a few moments.



7. Make the appropriate choice for your situation:
   - Click **No** to the *ComtrolApplet* message, if you are using the file to set up multiple devices with the same device-level settings.
   - Click **Yes** to the *ComtrolApplet* message, if you are using the file to restore a specific device.



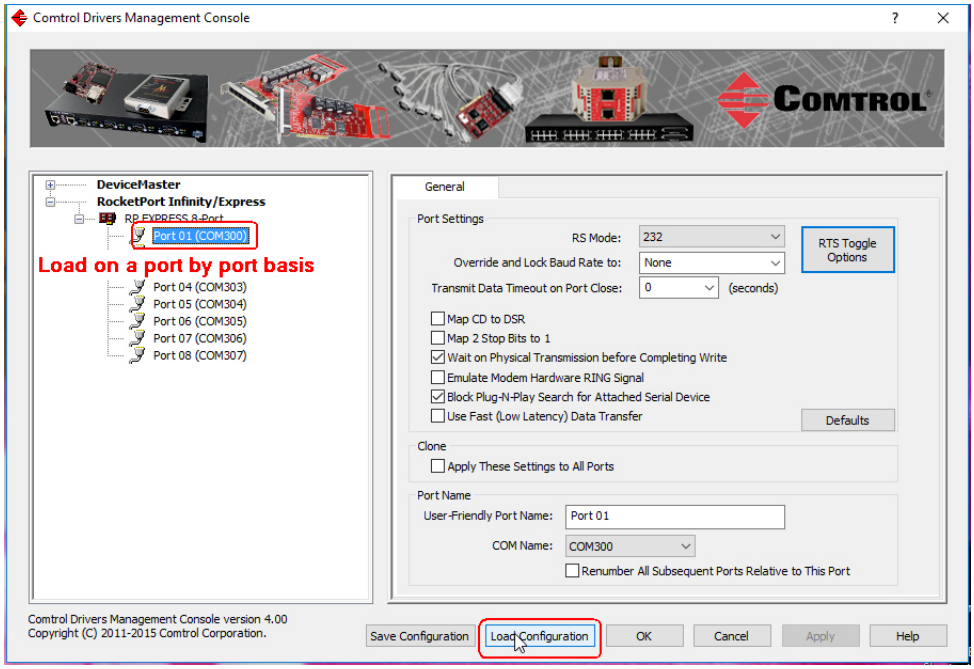
8. Click **Apply** so that the configuration is saved on the device.
9. Go to the next procedure if you want to restore port settings from a configuration file.

Loading Port Configuration

Use the following procedure to load the configuration file for port-level settings for your device.

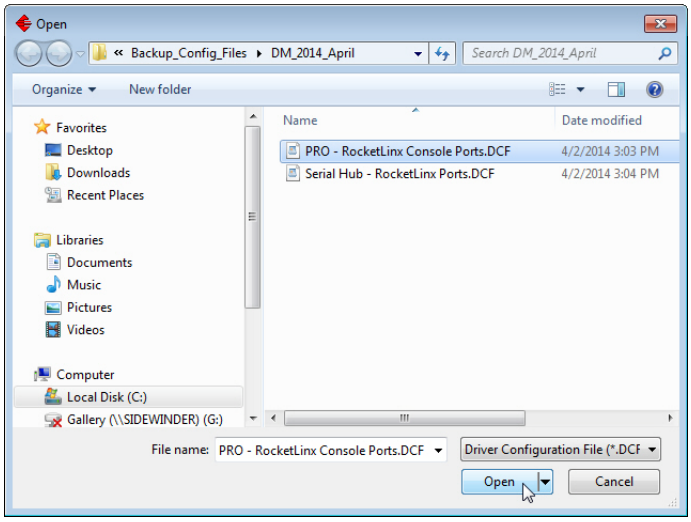
Note: *Device driver configuration files must be for the same model with the same port density. For example, you cannot load a DeviceMaster PRO configuration file onto a DeviceMaster RTS or a configuration file for a 32-port DeviceMaster RTS onto a 4-port DeviceMaster RTS.*

1. If necessary, open the *Comtrol Drivers Management Console* using one of these methods:
   - ***Windows Control Panel;*** go to your *Control Panel* and click on the **Comtrol Drivers Management Console**.
   - ***Shortcut***; located under **Start > Program Files > Comtrol > RP EXPRESS INFINITY > Comtrol Drivers Management Console**.
2. Depending on your operating system, you may need to click **Yes** to the *Do you want to allow the following program to make changes to this computer?* User Account Control message.
3. In the left pane, highlight the port for which you want to load the port-level settings from the configuration file.

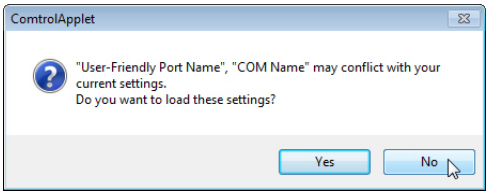


4. Click **Load Configuration**.
5. Browse to the location of the configuration file that you want to load.

6. Highlight the configuration file and click **Open**. The configuration file loads in a few moments.



7. Make the appropriate choice for your situation:
   - Click **No** to the *ComtrolApplet* message, if you are using the file to set up multiple devices with the same port-level settings.
   - Click **Yes** to the *ComtrolApplet* message, if you are using the file to restore a specific device.



8. Click **Apply** so that the configuration is saved on the device.
9. Repeat Steps 3 through 8 for each port that you want to restore.

Removing the Adapter and Driver

This section discusses:

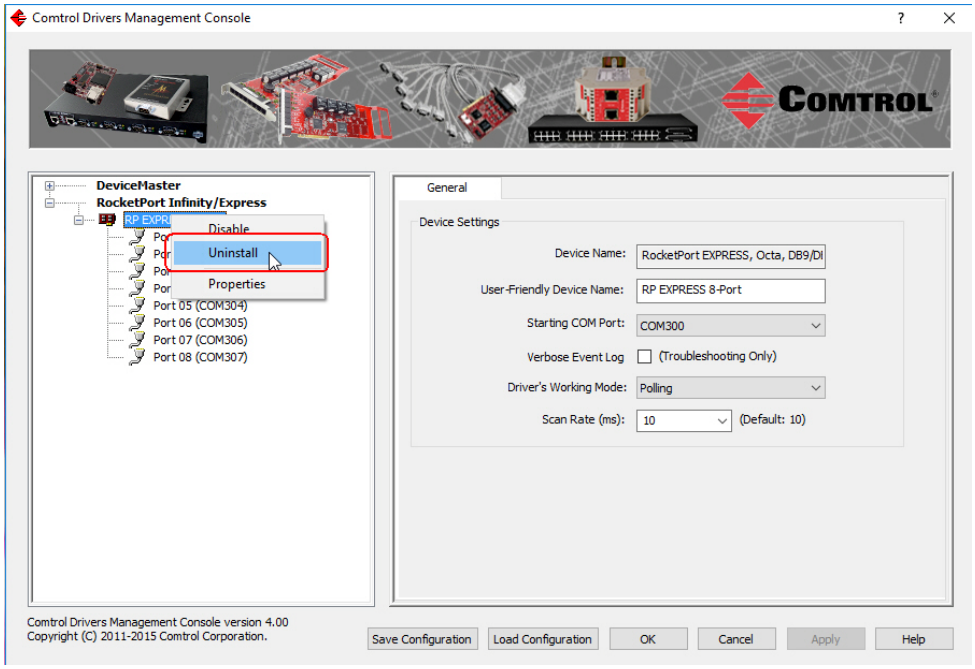
- Removing a RocketPort from an installation without removing the device driver from your system
- *Removing the Device Driver and Adapter* from your system

Removing a RocketPort

Use the following procedure to uninstall the device driver.

Note: *Administrative privileges are required to remove device drivers on Windows operating systems newer than Windows Server 2003.*

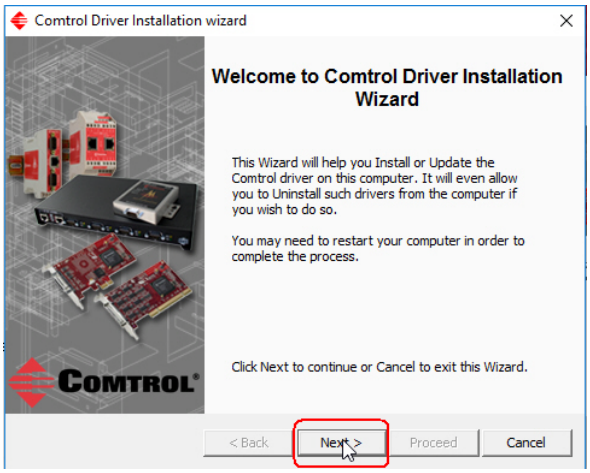
1. Right-click the RocketPort that you want to uninstall in the *Tree View* pane.
2. Click **Uninstall**.



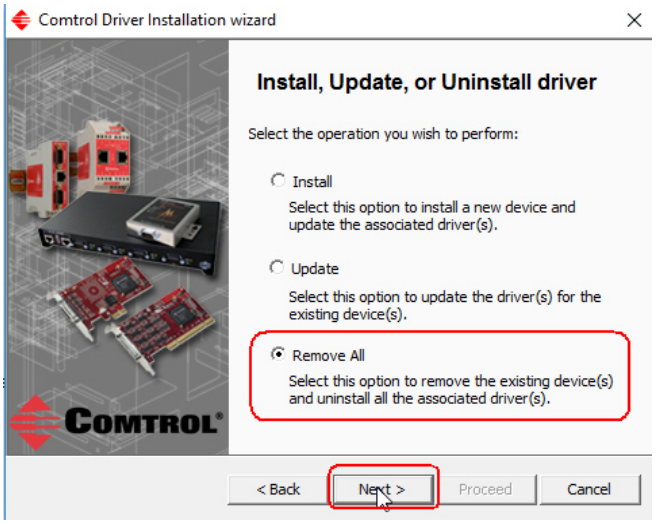
Removing the Device Driver and Adapter

Use the following procedure to remove the RocketPort device driver.

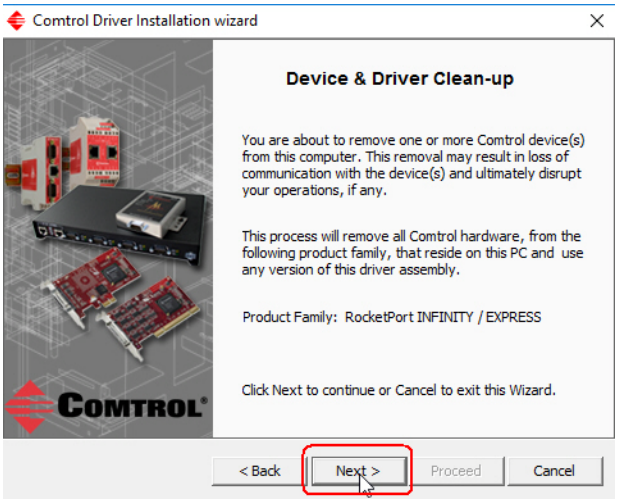
1. From the **Start** button, click the shortcut for your adapter: **Comtrol > RP EXPRESS INFINITY Driver Installation Wizard**.
2. Click **Yes** to the *Do you want to allow this app to make changes to your device?* message.
3. Click **Next** to start the *Comtrol Driver Installation Wizard*.
4. Click **Remove All** and **Next**.



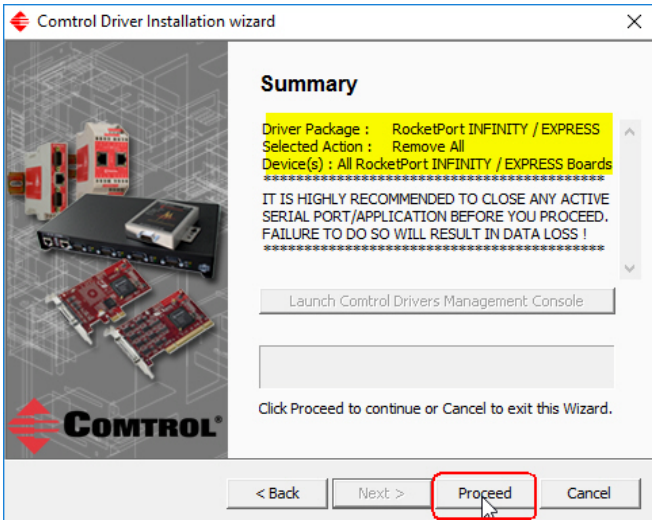
5. Click **Next** to remove the driver.



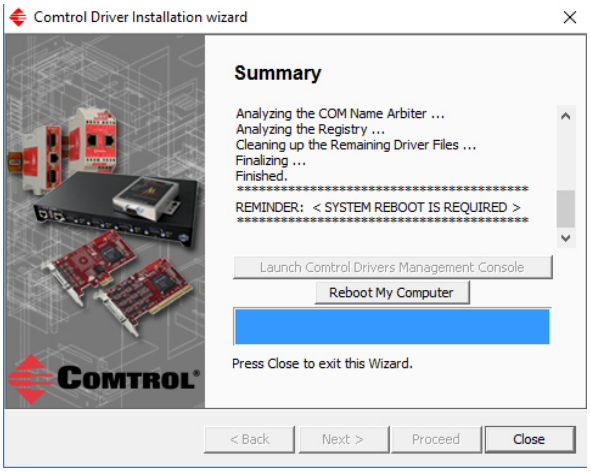
6. Click **Next** to clean up the driver removal.



7. Click **Proceed** to continue the driver removal process.



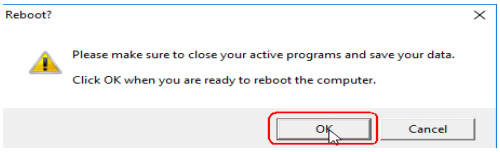
8. Click the **Reboot My Computer** button or **Close**.



- If you click **Close**, make sure that you reboot the system and remove the

adapter to complete the driver removal.

- If you click **Reboot My Computer**, click **Ok**.



9. Shutdown the system and remove the RocketPort adapter.
10. If you want to totally remove the **.exe** driver assembly:
    a. Delete any copies of the **.exe** driver assembly file residing on the system.
    b. Delete the driver and devices using the **Add > Remove Programs** *Control Panel*.

Troubleshooting and Technical Support

This section contains the following topics:

Troubleshooting Checklist

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

Note: *Most customer problems reported to Technical Support are traced to cabling or network problems.*

Issue	Troubleshooting
Correct cabling?	Verify that you are using the *correct types of cables* in the correct places and that all cables are tightly connected. Refer to the appropriate *RocketPort User Guide*, you can *download the latest* version (Page 6) to verify cabling.
Correct Port Addressing?	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.
Comtrol Drivers Management Console?	Verify that the RocketPort has installed using the Comtrol Drivers Management Console to confirm that the adapter displays. Install the device driver, if the adapter is not displayed.
Verify the Hardware?	Run the bootable diagnostics. You can download and burn a bootable Diagnostics CD for the RocketPort EXPRESS/INFINITY.
Test the Port or Ports?	Install the Comtrol Utility (Page 43) and use Test Terminal (Page 48).
Is this the Latest Driver?	See *Checking the Device Driver Version* on Page 13.

Issue	Troubleshooting
Port Does Not Open?	1. Open the *Device Manager*. 2. Double-click **Ports (COM & LPT)** to expand the view. Comtrol ports are displayed in the *Device Manager*, accordingly: • DeviceMaster ports are Comtrol NS-Link ports • RocketPort EXPRESS/INFINITY are Comtrol RocketPort Unity ports If a yellow exclamation mark represents the port, right-click on the exclamation mark, and click **Update Driver**. See *Updating the Driver* on Page 14 for detailed procedures.
Monitor Port Activity?	Install the Comtrol Utility (Page 43) and use Port Monitor.
Enable Verbose mode	You can optionally enable the **Verbose Event Log** option on the Device **General** tab for diagnostic purposes to initiate longer messages to be sent to the *Event Log* for your operating system. The added information can be useful when debugging communications and configuration problems. Access the event log through the *Administrative Tools Event Viewer* option.

Comtrol Utility

The Comtrol Utility Package is innovative software for serial port communication, testing, monitoring and reporting for the RocketPort families using a Windows operating system.

The Comtrol Utility Package contains three useful software applications named Test Terminal, Port Monitor, and Peer Tracer for communicating directly, monitoring, and reporting statistics of any COM, RS-232, RS-422, and RS-485 serial ports you have installed in a system.

The Comtrol Utility is available on the download site: http://downloads.comtrol.com/utilities/windows/comtrol_utility.

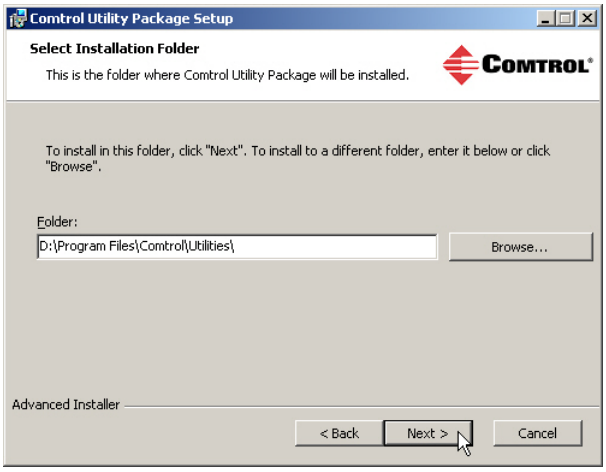
This subsection discusses the following topics:

Installing the Comtrol Utility

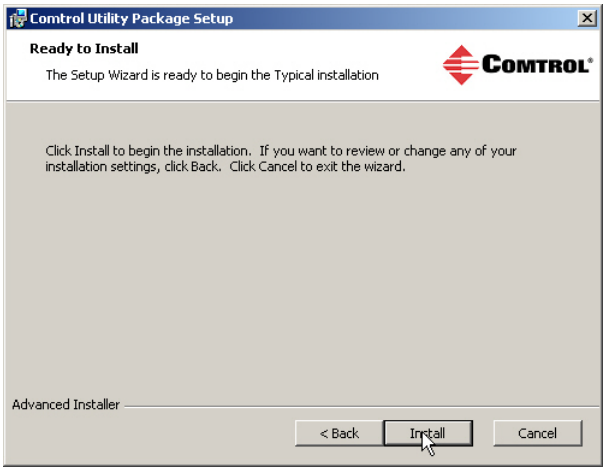
Use the following procedure to install the Comtrol Utility package.

1. Execute the **Comtrol_Utility_Package_x.xx.msi** file, where **x_xx** is the Comtrol Utility version number.
2. Click **Next**.

3. Click **Next**.



4. Click **Install**.



5. Click **Finish**.

   It is not necessary to reboot the PC after installation.

6. Go to *Using Port Monitor (PMon2)* on Page 45 or *Using Test Terminal* on Page 48 for procedures on using these applications.

Using Port Monitor (PMon2)

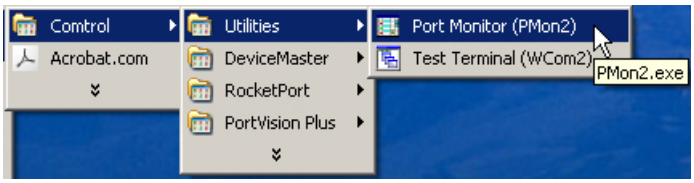
This procedure will check whether the RocketPort can:

- Communicate through the RocketPort device driver
- Determine if a port is open with an application

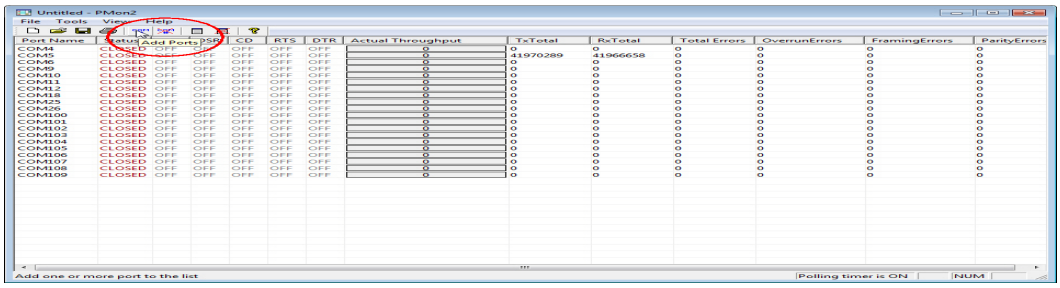
Testing Comtrol COM Ports

If necessary, use *Installing the Comtrol Utility* on Page 43 to install Port Monitor.

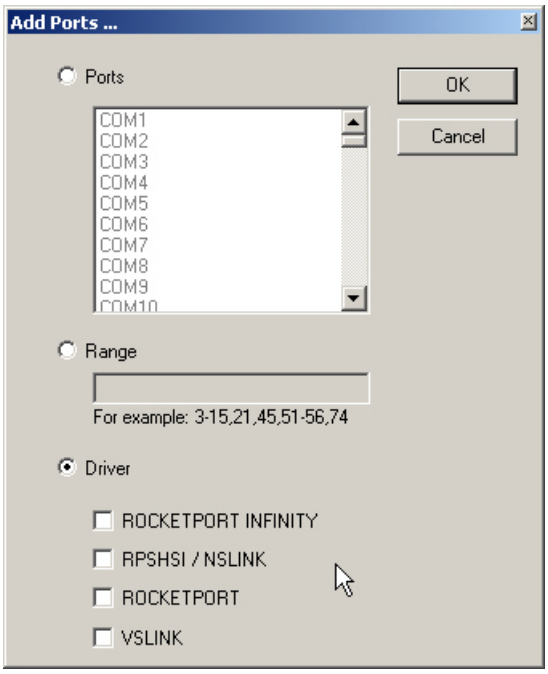
1. Start Port Monitor, from the **Start** menu, select **Programs > Comtrol > Utilities > Port Monitor (PMon2)**.



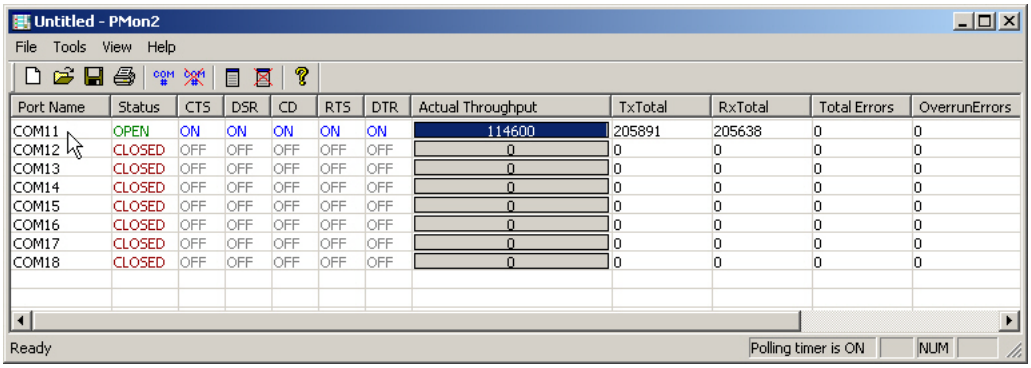
2. Click **Add Ports** using the icon or **Tools > Add Ports**,



3. Click **Driver**, the appropriate product (or products), and click **Ok**.
   - *RocketPort EXPRESS / INFINITY*: click **ROCKETPORT INFINITY**
   - *DeviceMaster*: click **RPSHSI/ NSLINK**



4. If the RocketPort is communicating with the device driver for Windows, Port Monitor should display **CLOSED** status. If a port is open for an application, it displays as **OPEN**, and displays **Actual Throughput**, **TxTotal** and **RxTotal** statistics.

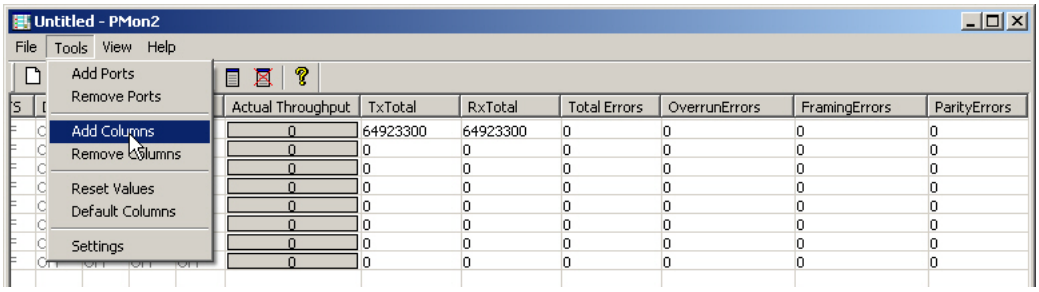


Normally, there should be no data errors recorded or they should be very small. To find out what the actual errors are, scroll to the right. You will see three columns: **Overrun Errors**, **Framing Errors**, and **Parity Errors**.

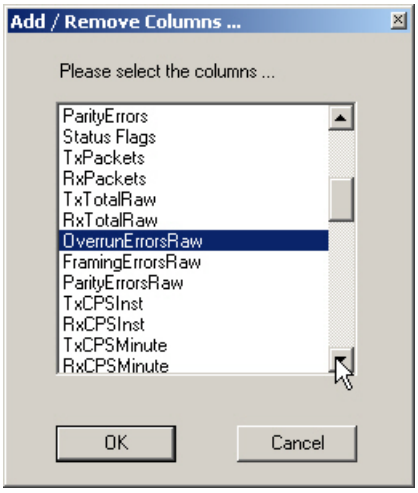
If the errors are:

- **Overrun Errors** represent receive buffer overflow errors. If this is the case, you will have to configure either software or hardware handshaking to control the flow of data. The most common errors are Overrun errors.
- **Framing Errors** indicate that there is an synchronization error between the beginning of a data frame and the end of the data frame. A frame usually consists of a start bit, 8 data bits, and a stop bit or two. The framing error occurs if the stop bit is not detected or it occurs in the wrong time frame. Most causes for framing errors are electrical noise on the data lines, or differences in the data clocks of the RocketPort and the connected device.
- **Parity Errors** occur when parity is used and the parity bit is not what is expected. This can also be caused by noise on the data lines.

5. You can view additional statistics to Port Monitor by adding columns. Click **Tools** and **Add Columns**.

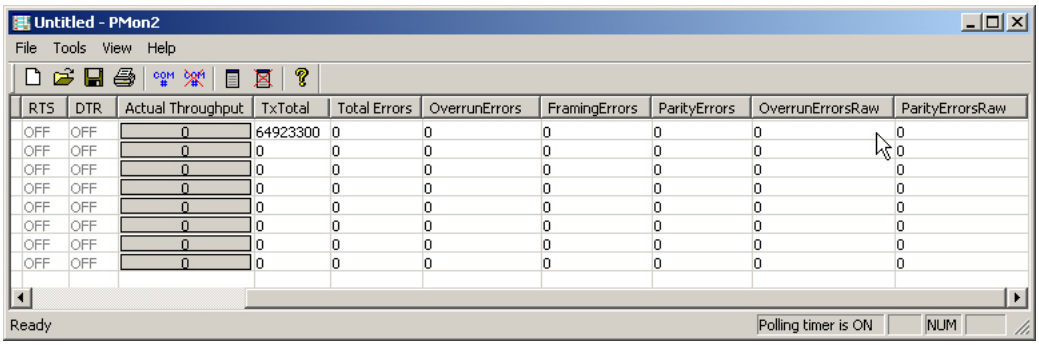


6. Highlight or shift-click to add multiple statistics and click **Ok**.



Note: *See the Port Monitor help system if you need an explanation of a column.*

7. Scroll to the right to view the new columns.



8. If you want to capture this session, you can save a current session as a report. To do this, select one of the following save options:

   - **File > Save As**
   - **File > Save** - if the report already exists in an older format
   - **Save Active Session** button

   Reports can be opened, viewed and re-used when needed. To open and view a report:

   a. **Select File > Open** or the **Open Existing Session** button. The *Open Session* dialog appears.

   b. Locate the session (table), you want to open and click the **Open** button.

   Optionally, if you want to continue monitoring for an existing session, you need to activate the *Polling Interval*.

   - **Select Tools > Settings** to access the PMon2 *Settings* dialog
   - Change the **Polling Interval** field to a value other than zero (0)

9. Leave Port Monitor open so that you can review events when using *Test Terminal* to test a port or ports.

Using Test Terminal

Test Terminal (WCom2) allows you to open a port, send characters and commands to the port, and toggle the control signals. This application can be used to troubleshoot communications on a port-by-port basis.

- **Send and Receive Test Data**: This sends data out the transmit line to the loopback plug, which has the transmit and receive pins connected thus sending the data back through the Rx line to Test Terminal, which then displays the received data in the terminal window for that port. This test is only testing the Tx and Rx signal lines and nothing else. This test works in either RS-232 or RS-422 modes as both modes have transmit and receive capability. A failure in this test will essentially prevent the port from working in any manner.
- **Loopback Test:** This tests all of the modem control signals such as RTS, DTR, CTS, DSR, CD, and RI along with the Tx and Rx signals. When a signal is made HI in one line the corresponding signal line indicates this. The Loopback Test changes the state of the lines and looks for the corresponding state change. If it successfully recognizes all of these changes, the port passes.

  A failure on this test is not necessarily critical as it will depend on what is connected and how many signal lines are in use. For example, if you are using RS-232 in 3-wire mode (Transmit, Receive and Ground) a failure will cause no discernible issue since the other signals are not being used. If the port is configured for use as either RS-422 or RS-485 this test will fail and is expected to fail since RS-422 and RS-485 do not have the modem control signals that are present in RS-232 for which this test is designed.

The following procedures require a loopback plug to be placed on the port or ports that you want to test. A loopback plug was shipped with your RocketPort. If you need to build a replacement or additional loopback plugs, refer to the appropriate User Guide for your Comtrol device. See *Downloading the Latest Software and User Guides* on Page 6, if you need to build loopback plugs.

Opening Ports

The following procedure shows how to use **Test Terminal** to send and receive test data to the serial ports. If necessary, use *Comtrol Utility* on Page 6 to install Test Terminal.

1. Stop all applications that may be accessing the ports such as RRAS or any faxing, or production software. See the appropriate help systems or manuals for instructions on stopping these services or applications.

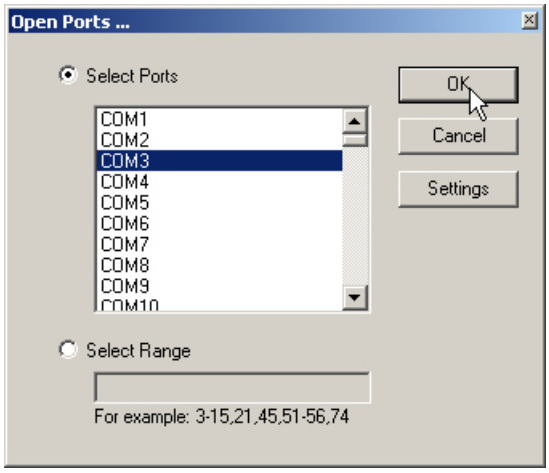
   If another application is controlling the port, then **Test Terminal** will be unable to open the port and an error message will be shown.

2. Start Test Terminal (WCom2), from the **Start** menu, select **Programs > Comtrol > Utilities > Test Terminal (WCom2)**.

3. Select **File > Open Port**, the appropriate port (or ports) from the *Open Ports* drop-down list and click **Ok**.

   Note: *If you left Port Monitor open from the previous subsection, you should show that the port is open.*

Go to the next procedure to send and receive test data.



Sending and Receiving Test Data (RS-232/422 and RS-485: 4-Wire)

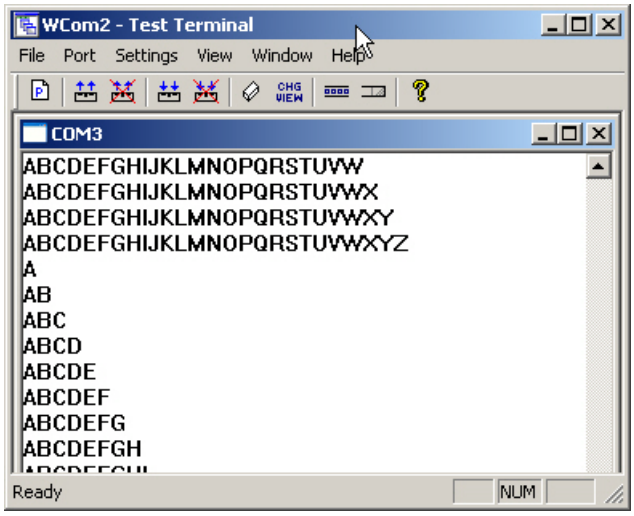
You can use this procedure to send and receive test data through the port or ports that you want to test.

1. If you have not done so, perform Steps 1 through 2 on Page 48.
2. Install the loopback plug onto the port (or ports) that you want to test.

   See *Downloading the Latest Software and User Guides* on Page 6 if you need to build loopback plugs.
3. Select **Port > Send and Receive Test Data**.

   You should see the alphabet scrolling across the port. If so, then the port installed properly and is operational.

   Note: *If you left Port Monitor running, it should show data sent and received and show the average data throughput on the port.*



4. Select **Port > Send and Receive Test Data** to stop the scrolling data.
5. You can go to the next procedure to run the *Loopback Test* on Page 50 if this is an RS-232 port.

If this test successfully completed, then the port is operational as expected.

Note: *Do NOT forget to restart the communications application.*

Loopback Test (RS-232)

The **Loopback Test** tests the modem control (hardware handshaking) signals. It only has meaning in RS-232 mode on serial connector interfaces with full RS-232 signals. If performed under the following conditions, the test will always fail because full modem control signals are not present:

- RS-422
- RS-485
- RJ11 connectors

Use the following steps to run the Loopback Test.

1. If necessary, start Test Terminal (Page 48, Steps 1 through 2).
2. Click **Port > Loopback Test**.

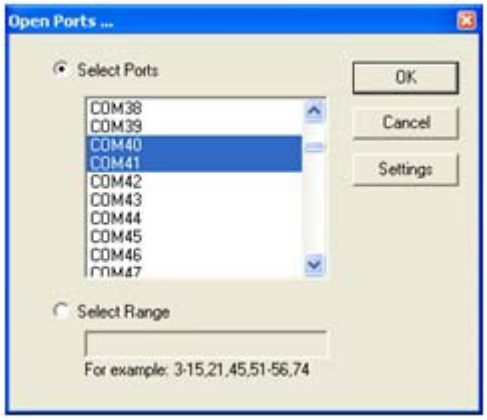
   This is a pass fail test and will take a second or two to complete. Repeat for each port that needs testing.

If the Loopback Test and the Send and Receive Test Data tests successfully complete, then the port is operational as expected.

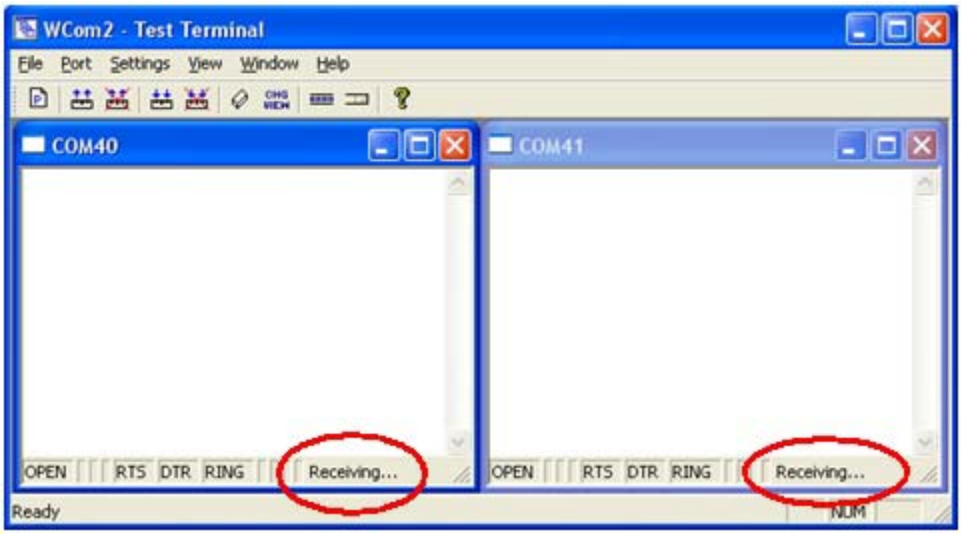
Sending and Receiving Data (RS-485: 2-Wire)

This procedure shows how to use Test Terminal (WCom2) to test two RS-485 (2-wire, half-duplex) ports.

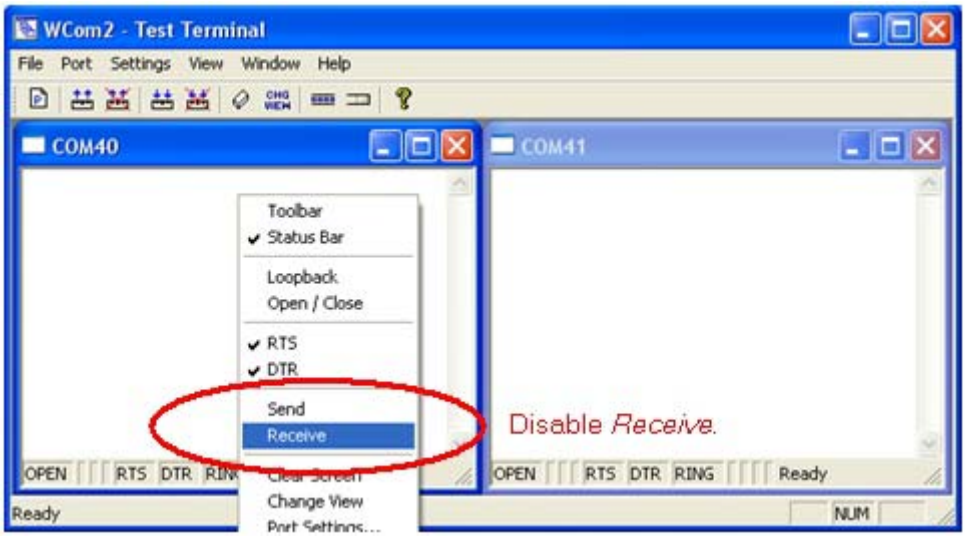
1. Start Test Terminal.
2. Open two ports RS-485 ports. This example uses COM40 and COM41.



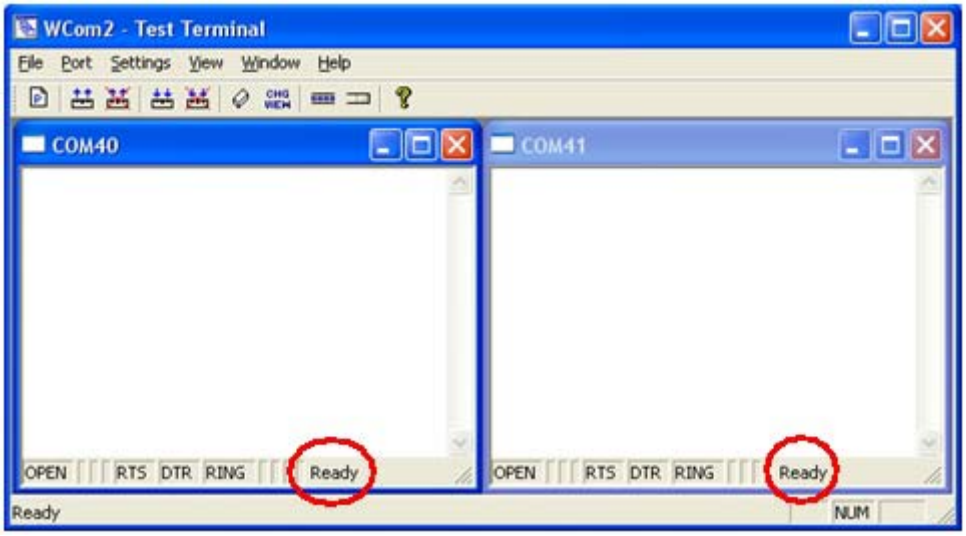
Test Terminal will open two windows, note that both ports show *Receiving* on the status bar.



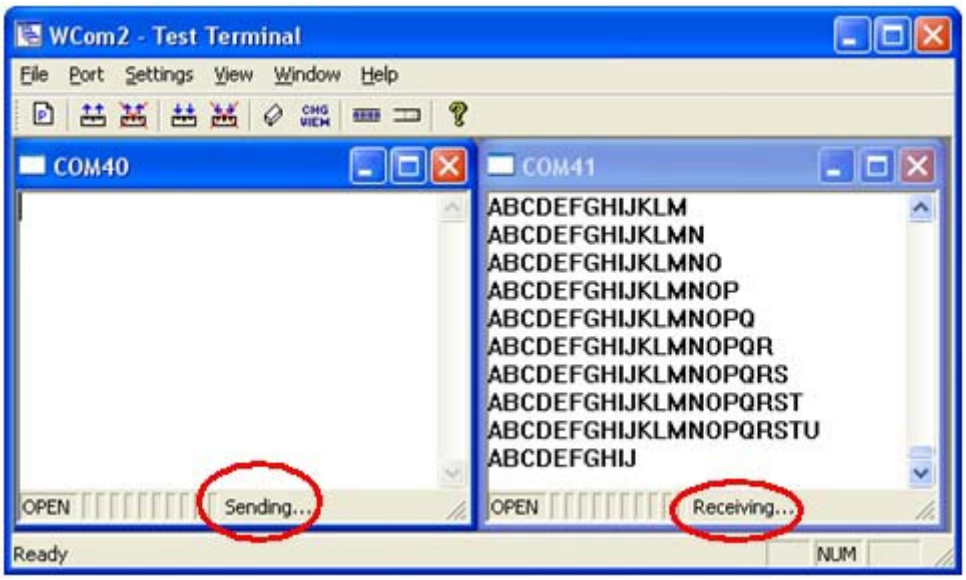
3. Right-click both COM windows and remove the check mark for **Receive**.



Both COM ports show *Ready* on the status bar.



4. Right-click in ONE window and select the **Receive** option from the pop up.
5. Right-click the OPPOSITE window and click **Send**.



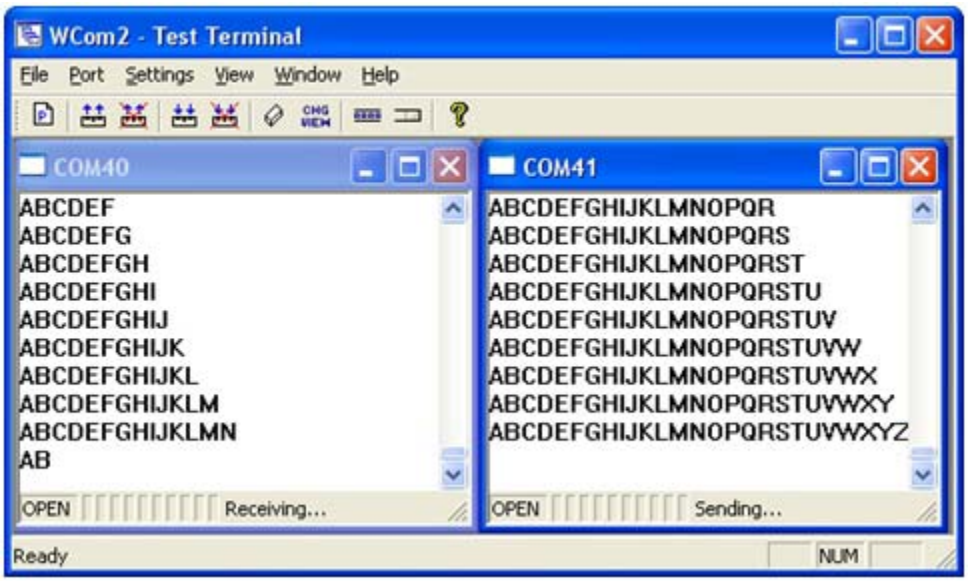
The *Status* line shows *Sending* or *Receiving*.

In this case, COM40 is sending data and COM41 is receiving the data which is visually confirmed by the data scrolling across the COM41 window.

Note: *If you do not see the data being received it MAY be necessary to also disable the RTS and DTR options from the right-click pop-up menu in each COM port.*

6. Right-click and remove the check mark on the *Sending* COM port.

7. Right-click and remove the check mark on the *Receiving* COM port.



   Neither COM port is sending or receiving data but shows *Ready* on the *Status* bar.

8. Reverse the sending/receiving windows one at a time. Set the **Receive** option first, then in the opposite window, select the **Send** option.

   The *Status* line shows *Sending* or *Receiving* in the reverse windows.

Data is now scrolling in the COM40 window. COM41 is static as it is not receiving data but transmitting data.

Before Calling Technical Support

Comtrol has a staff of support technicians available to help you. You should review *Troubleshooting Checklist* on Page 41 before calling Technical Support. If you call for Technical Support, please have the following information available.

Item	Information
Adapter type	
Adapter serial number	
Driver part number and revision or version	
Server computer make, model, and speed	
Other serial port adapters installed in the server and their COM port numbers	
Devices connected to the adapter	

Technical Support

If you need technical support, contact Comtrol using one of the following methods.

Contact Method	Corporate Headquarters
Support	http://www.comtrol.com/Support
Downloads	ftp://ftp.comtrol.com/html/default.htm http://downloads.comtrol.com/html/default.htm
Web site	http://www.comtrol.com
Phone	763. 957.6000 CST: 8AM-6PM (Excluding US Holidays)

Appendix A. Configuring Non-Plug and Play Devices

After installing the hardware and driver for Windows operating systems, you can use this discussion to configure non-plug and play COM ports.

Installing Non-Plug and Play Devices

Use the following procedure to install non-plug and play devices.

1. If you have not so yet, connect the device to a RocketPort port and turn on the device.
2. Open the *Control Panel*.
3. Go to the appropriate subsection to install non-plug and play modems or printers:
   - *Installing Modems* on Page 55
   - *Installing Printers* on Page 56

Installing Modems

Use the following procedure to install non-plug and play modems.

1. If you have not done so yet, connect the modem (or modems) to the desired RocketPort port (or ports) and turn on the modem (or modems).

   Note: *This may take a few minutes, depending upon your system and the number of modems you are installing.*
2. Open the *Control Panel* and click the **Phone and Modem Options** icon.
3. Click the **Modems** tab.
4. Click **Add**.
5. Click **Don't detect my modem. I will select it from a list** and then click **Next**.
6. Click an appropriate modem model and then click **Next**.

   Note: *If you have a driver from the modem manufacturer, click **Have Disk** and browse to the location of the driver. If your modem is not listed, go to the modem manufacturer's web site and download the appropriate driver.*
7. Highlight the port or ports on to which you have connected modems.
8. Click **Finish** to complete the modem installation.
9. Configure modem properties as necessary. For assistance, use the Windows help system.

To use this modem or modems with RRAS, you can refer to the Comtrol *RRAS Configuration Overview for Windows XP* document.

Installing Printers

Use the following procedure to install a non-plug and play printer.

Note: *If you want to install a plug and play printer, connect the printer to the appropriate serial port and the driver should automatically install. If it does not automatically install, use the following procedure as a guide with the printer manufacturers documentation.*

1. Open the *Control Panel* and click the **Printers and Faxes** icon.
2. Click **Next** when this screen appears.
3. Click the **Local printer attached to this computer** item.
4. Click the COM port that corresponds to the port to which the printer is connected.
5. Click the Manufacturer, Printer type, and then click **Next**.

   Note: *If you have a driver from the printer manufacturer, click **Have Disk** and browse to the location of the driver. If your printer is not listed, go to the printer manufacturer's web site and download the appropriate driver.*
6. Optionally, enter a printer name and then click **Next**.
7. Click **Yes** if you want to print a test page.
8. Click **Finish** to complete the installation.
9. Close the **Printer and Faxes** *Control Panel*.