

# **Redirector User Guide**

**Revision B November 04, 2005**  
**Part Number GC-800-235**



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## Disclaimer and Revisions

The information in this guide may change without notice. The manufacturer assumes no responsibility for any errors that may appear in this guide.

Date	Rev.	Author	Comments
11/23/04	A	GR	Preliminary Release
11/14/05	B	GR	Add TCP Port offset. Notes for RAW Mode. Notes for Redirector 3.0.0.2.

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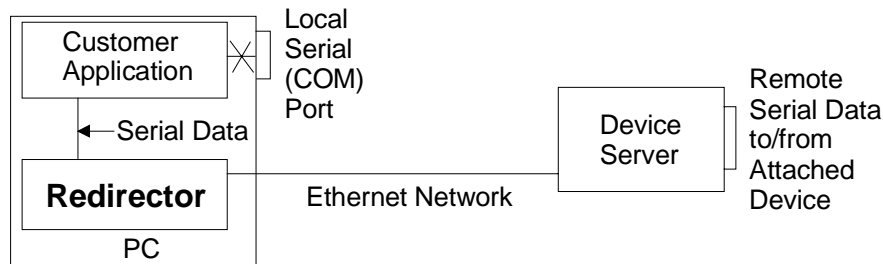
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# 1. Redirector

Com Port Redirector is a software utility for network-enabling legacy software applications that do not have network support. Com Port Redirector installs virtual Windows® communication ports. These virtual communication (or com) ports are redirected over a network to the serial port of the NET232 device server.



In most cases, legacy software that uses the virtual com ports created with Com Port Redirector encounters no problems and acts as if it were communicating with a physical com port. Not all software applications, however, are suited for use with Com Port Redirector.

Serial port software applications are designed for direct communication with the serial device being managed. However, when device servers are used across a network, latency can occur with the connection from the software to the managed serial device. Some software applications have timing constraints for data transmitted and received on com ports. In some cases, a software application will not wait long enough to receive a response from the serial device being managed. As a result, the software assumes the serial device is not responding and times out.

## 1.1 Non-Redirected Connections vs. Redirected Connections

Most software applications that need to use the Com Port Redirector have been designed to connect directly to the serial device being managed. This connection is achieved using a direct cable connection from a com port on the personal computer (PC) running the software utility to the serial port of the serial device being managed. With this configuration, the PC and the managed serial device reside on an isolated serial network. The traffic passed on the physical media between them is intended for either the PC or the serial device. Latency is not an issue in this scenario.

When the same software applications are used with the Com Port Redirector, the applications are no longer directly attached to the serial device being managed. Instead, all traffic between the software application and the serial device is routed as follows:

1. From a virtual com port, the data is stripped out of a serial packet and placed into an IP packet.
2. The serial packet is sent from the virtual com port to a network interface on the PC.
3. Data is transmitted over the network, through switches or routers, to the network interface on a device server.
4. From the network interface on the device server, the data converts from an IP packet back to a serial packet.
5. Once in a serial packet, data is transmitted down the physical media to the serial device.

This process introduces latency. The amount of latency associated with this type of connection is determined by the amount of network latency. The more traffic on the network, the greater the latency between the PC running the software application and the device server.

To address latency, Com Port Redirector provides a **No Net Close** option in the Port Settings dialog box (click **Port Settings** from the COM Port Redirector Configuration window). This option keeps the TCP/IP connection open when the com port is closed, reducing latency.

## 2. Installing Com Port Redirector

### 2.1 Install Redirector

1. Insert the product CD into your CD-ROM drive. The CD will automatically start and display the main window.

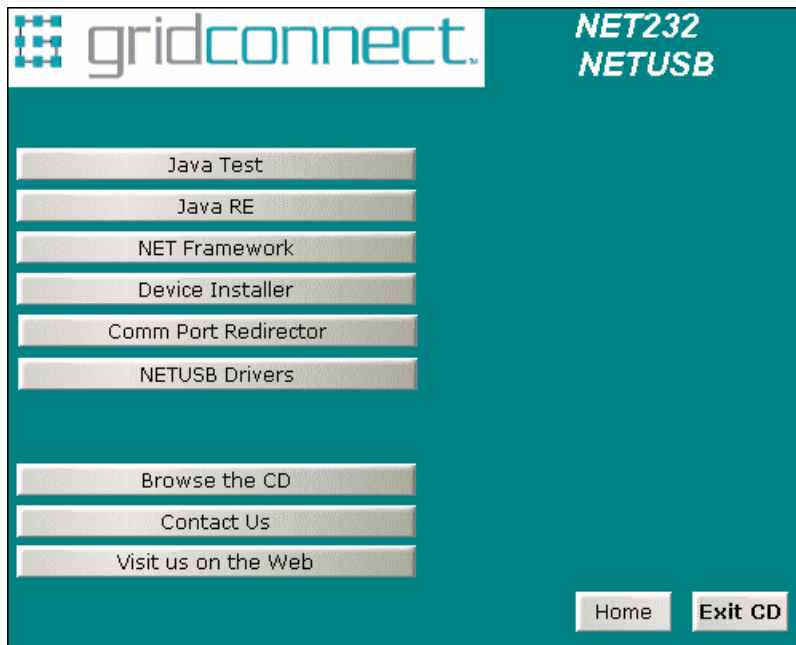
If the CD does not launch automatically:

- a) Click the Start button on the Task Bar and select Run.
- b) Enter your CD drive letter, colon, backslash, Launch.exe (e.g., D:\Launch.exe).



**Figure 1 – NET232/USB Main Window**

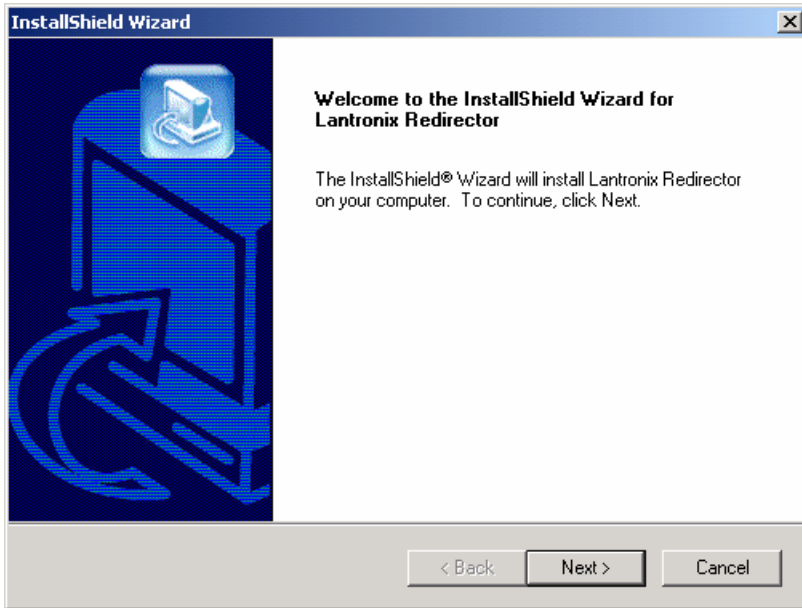
2. Click the **NET232 Software** button to open the software page.



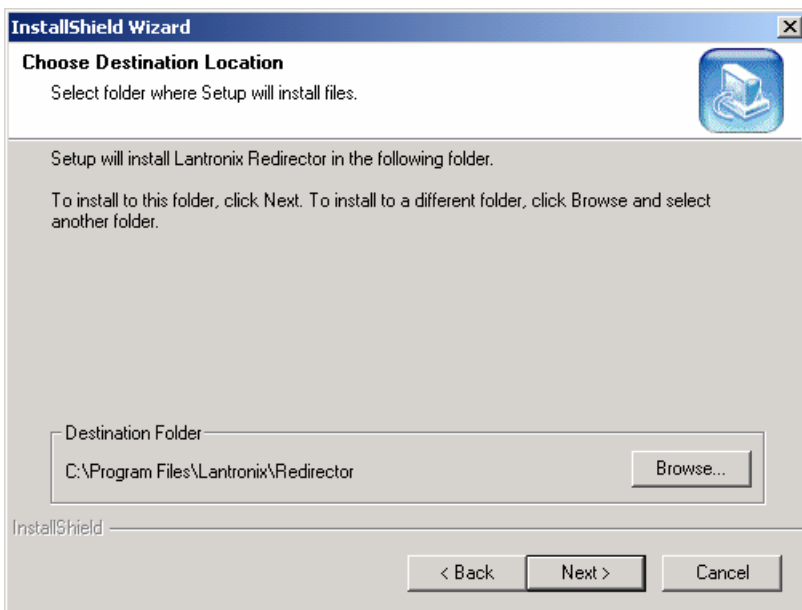
3. Click the **Comm Port Redirector** button. The InstallShield Wizard window appears.



4. Click Next to continue.



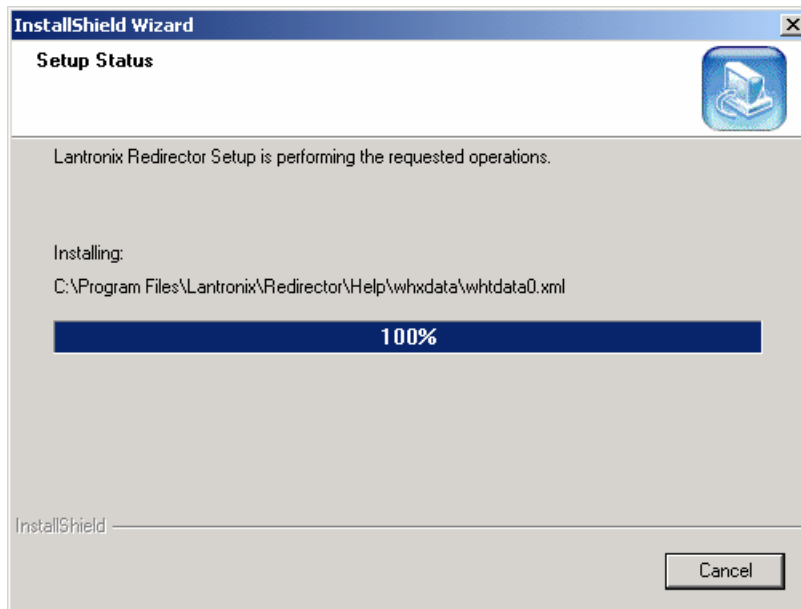
5. Click the **Next** button. The **Choose Destination Location** dialog box appears.



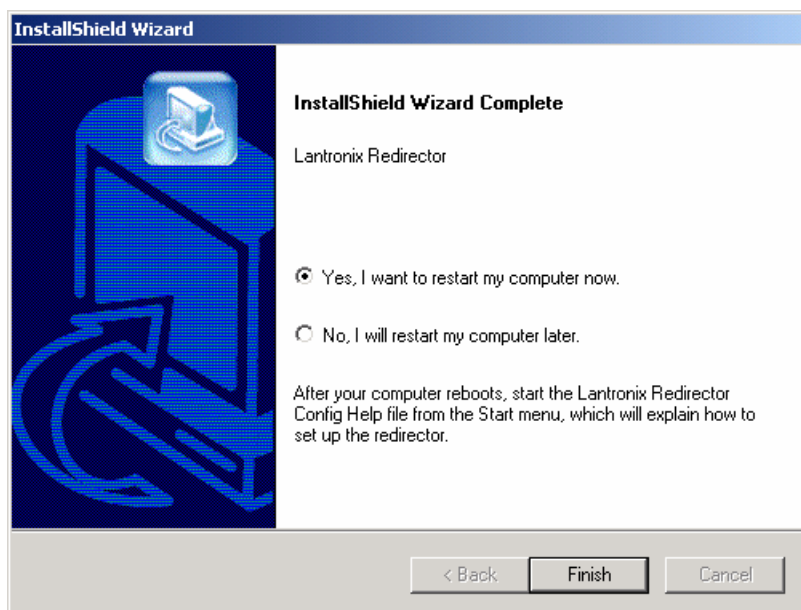
6. The path under **Destination Folder** shows where the Com Port Redirector software will be installed. We recommend the default location. To change this location, click the **Browse** button and select a different location.

**Note:** The *Choose Destination Location* dialog box and the one that follows it have a **Back** button you can click to return to a previous screen.

7. Click **Next**. The Setup Status message appears.



8. When the setup is complete, the following message appears.

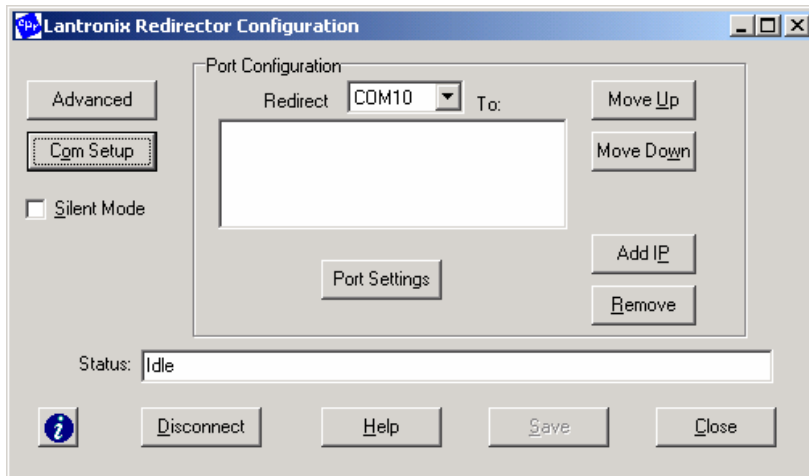


9. Click **Finish** to complete the installation and reboot your computer.

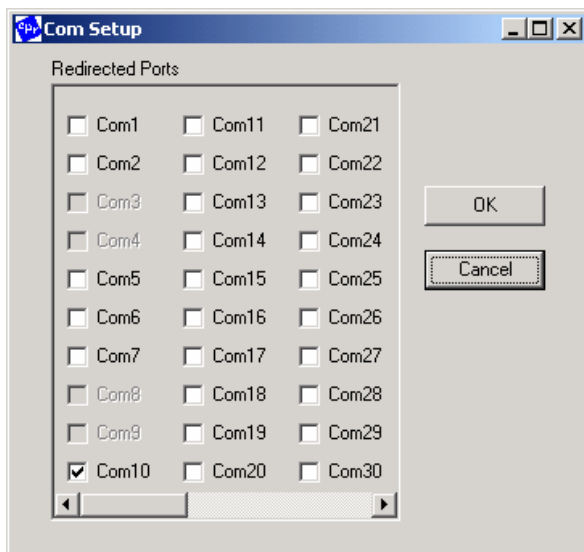
**Note:** Before you can use the program, you must restart your computer.

## 2.2 RUN Redirector

Click the **Start** button in the Windows Taskbar, point to **Programs, Lantronix, Redirector**, and select **Configuration**. The Com Port Redirector Configuration window appears.



Click the **Com Setup** button. A Port Setup dialog box appears, with the first logical communications port checked. In the following example, Com10 is selected for redirection.



The physical communication ports on the computer are displayed as gray and unavailable. The unavailable ports will vary depending on the make and model of your computer.

Click all the logical ports to which the PC will be redirected. A checkmark appears next to each logical port selected. Each port selected will be available from the **Redirect** drop-down list in the Com Port Redirector Configuration window (this procedure is described in the next chapter).

To deselect a port, click it again to remove the checkmark next to it. Removing the checkmark indicates the port will not be available from the **Redirect** drop-down list.

When finished, click **OK**.

**Note:** After you use the Port Setup dialog box to add or remove com ports, reboot your computer.

## 3. Configuration

This chapter provides general guidelines for using the device server and Com Port Redirector. It also describes how to set up Com Port Redirector and the device server you will be using with it, and how to verify connectivity between the two.

### 3.1 General Device Server Configuration Guidelines

Observe the following general guidelines when preparing the NET232 or other device server for use with Com Port Redirector:

The device server to which Com Port Redirector will connect must have an IP address.

The PC running Com Port Redirector must have a good network connection to the device server.

If redirecting over a Wide Area Network (WAN), both the PC and the device server must have a correct gateway address configured in their TCP/IP settings.

All serial settings on the device server must match the settings of the serial device. Serial settings include:

- Baud rate - Parity
- Stop bits
- Flow control
- Interface mode (RS-232 or RS-422/485)

Connect/Disconnect and Access Modes: The way the device server accepts a connection must be configured appropriately to accept a network connection from Com Port Redirector.

- For NET232: set the connect mode to C0 and the disconnect mode to 00.

Serial device cabling between the serial device being managed and the server must be correct. Consult your documentation for the pinouts of your device server. Consult your device server documentation for information about configuring these settings for your device server.

#### 3.1.1 General Com Port Redirector Usage Guidelines

Observe the following general guidelines when using Com Port Redirector:

- Do not run Com Port Redirector with other software that installs a virtual com port.
- Do not run Com Port Redirector with other Comport Redirection software on the same PC.

**WARNING:** Redirector with a NET232 requires RAW Mode.

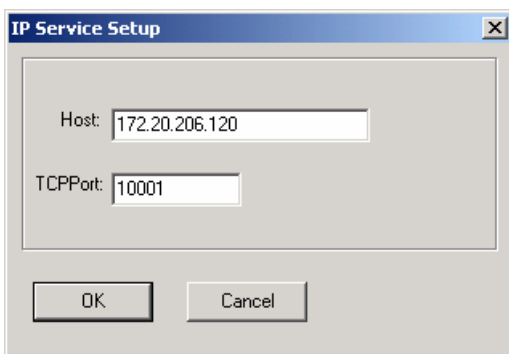
## 3.2 Device Server Configuration

This section describes how to configure Com Port Redirector for use with a NET232 or similar device server.

1. Assign an IP address to the device server before using Com Port Redirector.
2. Telnet into the configuration port **9999** on the device server.
3. When prompted for the Setup Mode, press the Enter key.
4. Select option 1 (Channel 1).
5. Set the serial settings (baud rate, parity, flow control, data bits) to those of the serial device attached to the device server.
6. Set the Port number (Port No) to **10001**. (The default setting is 10001)
7. Set the connect mode for the channel to **C0**.
8. Leave all other settings at the default settings.
9. Select option **9** to Save and Exit.

## 3.3 Redirector Configuration

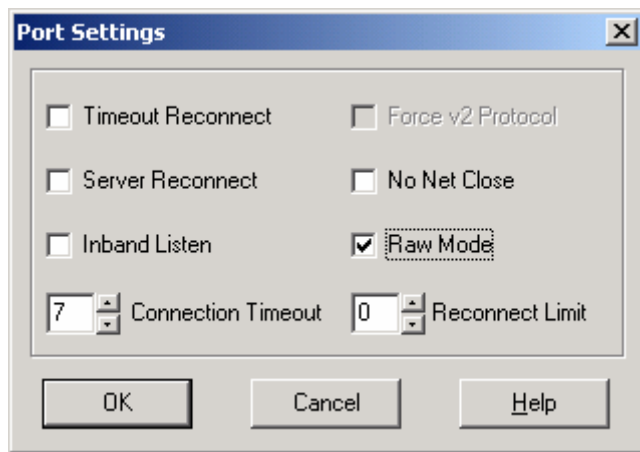
1. Click the **Start** button in the Windows Taskbar, point to **Programs, Lantronix, Redirector**, and select **Configuration**. The Com Port Redirector Configuration window appears.
2. Using the **Redirect** drop-down list at the top of the Com Port Redirector Configuration window, select a redirected com port.
3. Click the **Add IP** button. The IP Service Setup dialog box appears.



4. In the **Host** field, enter the IP address of the device server.
5. In the **TCPPort** field, enter the port number of the device server. Default is **10001**.
- WARNING:** The NET232 device requires RAW Mode.*
6. Click the **OK** button.



- Click the **Port Settings** button. The Port Settings dialog box appears. See *Configuring Port Settings* on page 3-10 for more information.



- Select **Raw Mode**

- Click OK.

- Click the Save button.

*Note:* Changes will take effect when the port is reopened.

- Click Ok. Click the Close button.

- Proceed to *Verifying Connectivity with the Device Server* on page 3-11.

## 3.4 Configuring Port Settings

The Port Settings dialog box lets you define various settings for redirected com ports. The settings selected from the Port Settings dialog box are on a per-port basis. Therefore, to apply port settings to all redirected com ports, repeat the following procedure for each redirected com port.

1. Click the **Start** button in the Windows Taskbar, point to **Programs, Lantronix, Redirector**, and select **Configuration**. The Com Port Redirector Configuration window appears.
2. Using the **Redirect** drop-down list at the top of the Com Port Redirector Configuration window, click a redirected com port.
3. Click the **Port Settings** button. The Port Settings dialog box appears.
4. Select the appropriate port setting options.
5. After selecting the port settings, click OK.

Setting	Description
Timeout Reconnect	If checked, Com Port Redirector re-establishes the connection if the connection times out (see the TCP Keepalive information in your device server user's guide). When auto-reconnecting, Com Port Redirector tries to reconnect until the connection succeeds or you click the <b>Cancel</b> button in the pop-up connection dialog box. If the port was closed by the communications application or by clicking <b>Disconnect</b> , Com Port Redirector does not try to auto-reconnect.
Server Reconnect	If checked, Com Port Redirector re-establishes the connection if the server closes it. When auto-reconnecting, Com Port Redirector tries to reconnect until the connection succeeds or you click the <b>Cancel</b> button in the pop-up connection dialog box. If the port was closed by the communications application or by clicking <b>Disconnect</b> , Com Port Redirector does not try to auto-reconnect.
Inband Listen	If checked, Com Port Redirector uses the inband redirector protocol on inbound connections from a server. This protocol allows settings like modem signals, baud rate and parity to be exchanged between Com Port Redirector and the server.
Connection Timeout	Specifies the maximum number of seconds that the Com Port Redirector waits for a connection to be made before giving up on this attempt. If <b>Timeout Reconnect</b> is enabled, each connection attempt lasts this long. If <b>Timeout Reconnect</b> is disabled, the connection attempt fails after this interval and no more attempts are made.
Force v2 Protocol	Not supported by NET232.
No Net Close	If checked, prevents the network connection from being dropped when the communications application is closed. To drop the connection, click the <b>Disconnect</b> button in the Com Port Redirector Configuration window. This allows applications to close and reopen ports, without waiting for the network connection to be re-established and negotiated.
Raw Mode	If checked, forms a raw TCP connection to the server's serial port, accelerating the connection between the communications application and the server, without sending configuration or status information from the PC to the server.
Reconnect Limit	Restricts the number of reconnection attempts if 'server reconnect' or 'timeout reconnect' is enabled. The default of zero means no limit. See Release Notes.

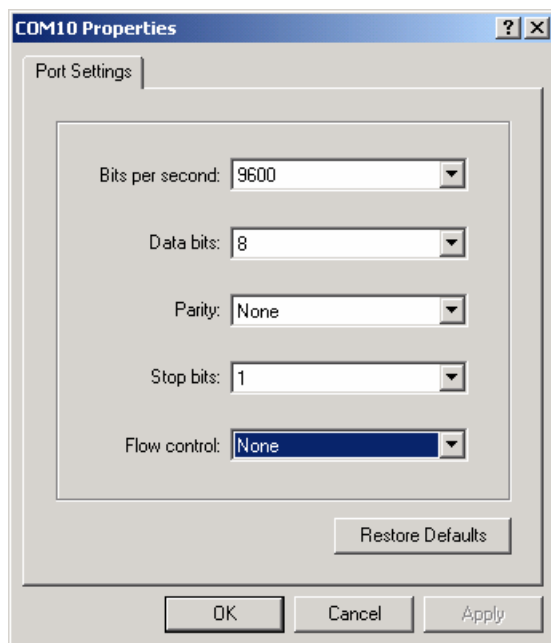
### 3.5 Verifying Connectivity with the Device Server

After configuring the Com Port Redirector and the device server, use a terminal emulation program such as HyperTerminal to verify connectivity from the Com Port Redirector to the device server. To verify connectivity between Com Port Redirector and the device server using HyperTerminal:

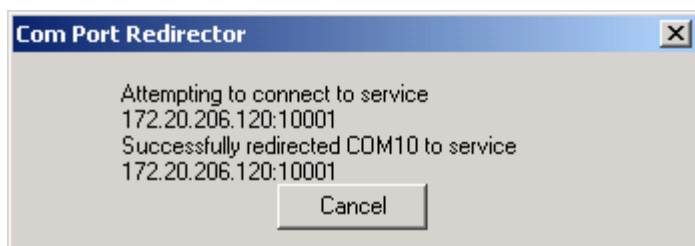
1. Click the Start button in the Windows Taskbar, point to **Programs, Accessories, Communications**, and click **HyperTerminal**.
2. In the **Connect To** dialog box, go to the **Connect using** field and select the virtual com port configured to connect to the device server. Once you select the com port, the other fields will be grayed out.



3. Click OK. In the **COM Properties** dialog box, select the communication parameters for the device server.



4. Click OK. When the HyperTerminal window opens, a pop-up window displays *Attempting to connect to service*. If the message *Successfully redirected to service* appears, the connection from the Com Port Redirector to the device server was successful.



If the message is replaced by *Failed to connect to any service*, the connection failed. Ensure your settings are correct (refer to the appropriate configuration section in this chapter for setup procedures for your device server).

To hide the pop-up window, check **Silent Mode** on the Com Port Redirector Configuration window.

## 3.6 Advanced Settings

### 3.6.1 TCP Keep Alive

Click the **Advanced** button to display the Advanced Settings dialog box.

The TCP keepalive time specifies how long to wait on an idle connection before the PC starts sending keepalive packets. A keepalive packet is a packet sent to the server to see if it is still alive. If the server responds then the keepalive timer is reset. If it does not respond then the PC resends the packet several times at short intervals. After a certain number of non-responses, the connection is timed out. At this point the connection is either closed or auto reconnected.

There are two important things to note:

1. This setting is global to the PC, so anything which enables TCP keepalives will use this setting.
2. The timeout is specified in milliseconds. 1 second = 1000 milliseconds, so if you want a timeout of 1 minute, the value needs to be 60000. The default Windows timeout value is 7,200,000 (2 hours)

### 3.6.2 Run as Service

**Run as service** is available under NT/2000/XP. Checking this box allows the redirector to run as a service, which means that it will run automatically when the PC starts up, without having to log in.