

NET485

Quick Start Guide



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Disclaimer and Revisions

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Date	Rev.	Author	Comments
03/21/05	A	GR	Preliminary Release
04/26/06	B	GR	Addition of 485/422 Option Jumper
05/23/06	C	GR	Release of Firmware 6.1.0.2 and Device Installer 4.1.0.3

1. Quick Start

Follow this Quick Start guide to get your unit up and running fast.

WARNING: DO NOT CHANGE THE FIRMWARE UNLESS DIRECTED BY TECHNICAL SUPPORT

The NET485 kit contains the following items:

- NET485 RS422/485 Serial to Ethernet Adapter
- CD with NET485, Device Installer, Comm Port Redirector, user guides and application notes.

1.1 Setup Steps

The setup procedure consists of the following steps:

1. Connect the hardware
2. Install the **Device Installer** software and other software necessary to support the NET485
3. Change the configuration settings (factory set for RS485 - 2 Wire)
 - a. IP Address
 - b. Set Configurable Pin 0 (CP0) to RS485_TXEN
 - c. Set RS485_TXEN Active Level to High
 - d. Set the Serial Protocol to RS485 – 2 Wire
(or RS422/485 - 4 Wire if the option jumper is set to 422)
 - e. Set the Serial Port parameters to match your device
 - f. Remove the RX Term and TX Term jumpers for short lines
4. Run the quick test (RS422/485 port required)
5. Change the configuration settings to customer specs

Connect the Hardware

Connect your network Ethernet cable to the NET485 RJ45 jack. Do not connect directly to your PC. The NET485 should be connected to a router or server.

Connect a 9-24VDC power supply to the NET485. The polarity for the terminals is shown on the label. Verify the Green power LED is ON.

Note: Do NOT use RX Term and TX Term jumpers on short transmission lines. Remove these jumpers to remove the 120 Ohm resistors from the transmit and receive lines.

Note: See the Application Notes on the product CD for more information about networks and termination procedures.

1.2 Install Device Installer

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 **NET485 Software** button.
3. Install **Java RE** and **NET Framework** if your system does not have these components.
4. Click the **Device Installer** button.
5. Respond to the installation wizard prompts.
6. Restart your system.

1.2.1 RUN Device Installer

Double click the Device Installer icon on your desktop or click the Start button on the Task Bar and select **Programs\LANTRONIX\Device Installer**. The Device Installer main dialog box appears.

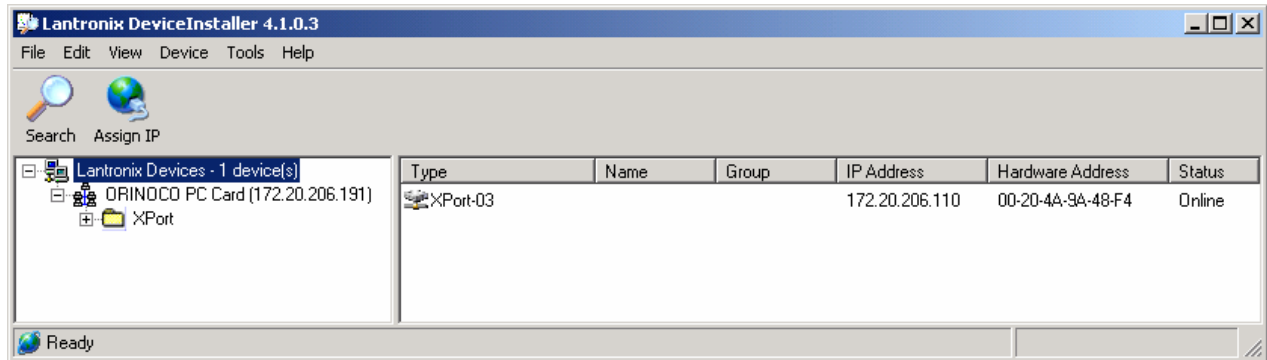



Figure 2 - Device Installer Dialog Box

Device Installer automatically locates and displays devices on the network. To search for devices recently added to the network, click the icon  , select **Search** from the Device menu or press the F5 key.

1.2.2 Device Found

Figure 2 shows a device found on the network, with the IP addresses assigned by the DHCP server. The device IP Address is normally set to 0.0.0.0 at the factory. The Hardware Address is an individual permanent address assigned to a particular device on the network. The Hardware Address can be found on the product label.

To change the IP address, first select the device from the list. Notice that the Upgrade icon appears on the toolbar when you select a device.

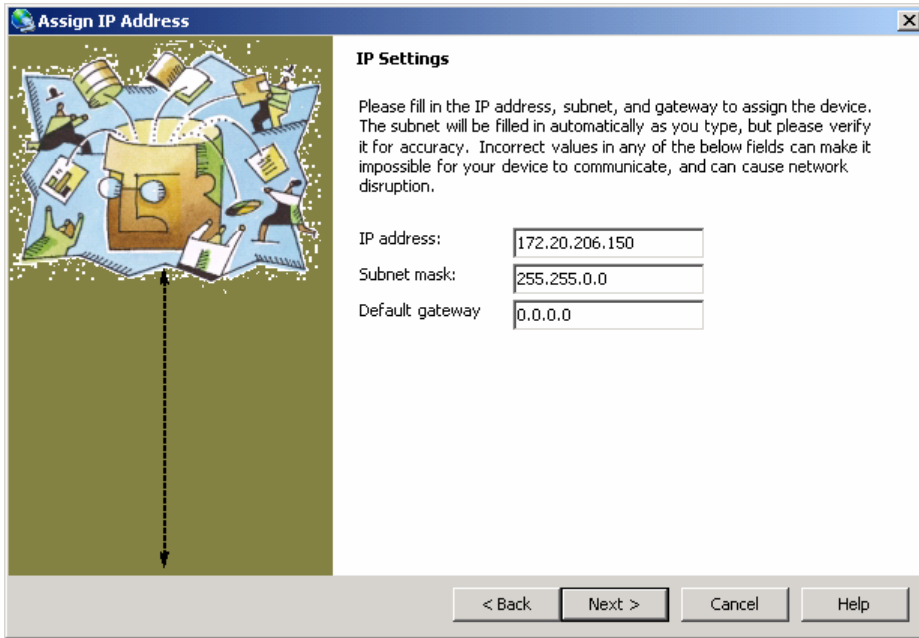
1.2.3 Assign IP

Click the **Assign IP** icon  , select **Assign IP Address** from the Device menu or press the **F7** key.

You are then asked to select an assignment method. To assign a specific IP address, select the **Assign a specific IP address** button in the dialog box. Click **Next** to continue.

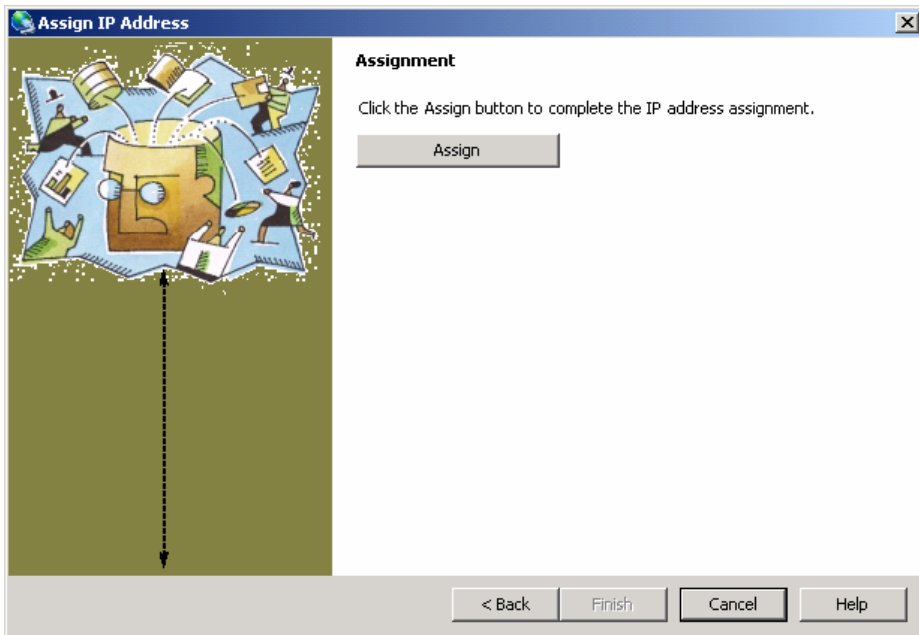
If you choose to obtain an IP address automatically, select **Obtain an IP address automatically** button. The IP Discovery Settings dialog appears. Choose from DHCP, BOOTP and Auto-IP protocols to obtain the IP address. Skip to section 1.2.4.

Enter the **IP address**, the **Subnet mask** and the **Default gateway** in the IP Settings dialog box. In the following example, the new IP address is 172.20.206.150. Press the TAB key to advance to the next field. The Subnet mask will be filled in automatically. On a local network, you can leave the Default gateway blank (all zeros). Click the Next button to continue.



1.2.4 Assignment

Click the **Assign** button and wait until the progress bar shows the task is complete.



Click the **Finish** button to return to the main Device Installer dialog.

Select the device from the main window list and select **Ping** from the **Tools** menu. The Ping Device dialog box shows the IP address of the selected unit.

Click the **Ping** button. The results display in the Status window. Click the **Clear Status** button to clear the window so you can ping the device again.

Note: If you do not receive “Reply” messages, make sure the unit is properly attached to the network and that the IP address assigned is valid for the particular network segment you are working with. If you are not sure, check with your systems administrator.

Click the **Close** button to finish.

At this point, the unit is ready for testing or custom configuration for your system.

1.3 Set NET485 Configuration Parameters

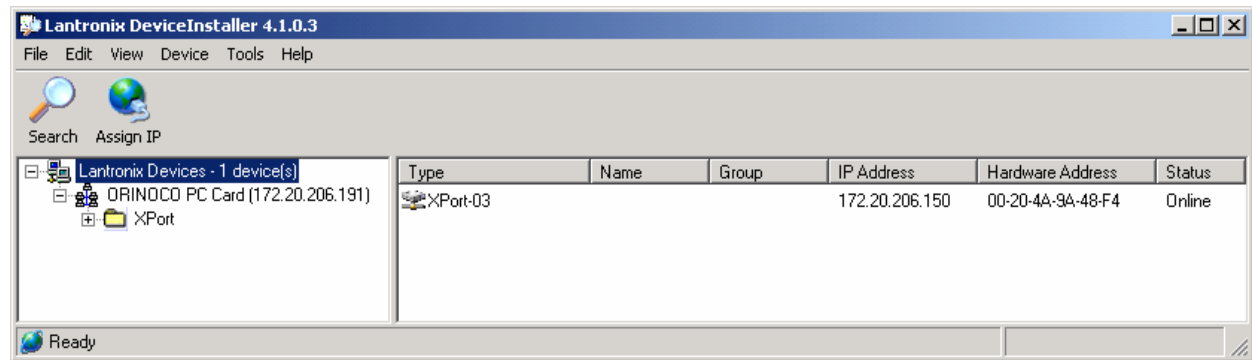
There are several configuration options that **MUST** be set before the unit will operate properly as an RS422/485 device. The XPort-03 device server inside the NET485 is set to operate correctly at the factory. If you change the settings, or reset the unit to factory defaults, you will need to reconfigure the unit for RS422/485.

This section will guide you through the procedure for making the correct configuration changes.

Note: Units are factory tested and configured for RS485 operation. Please read the following section so you know how to change the settings in the future.

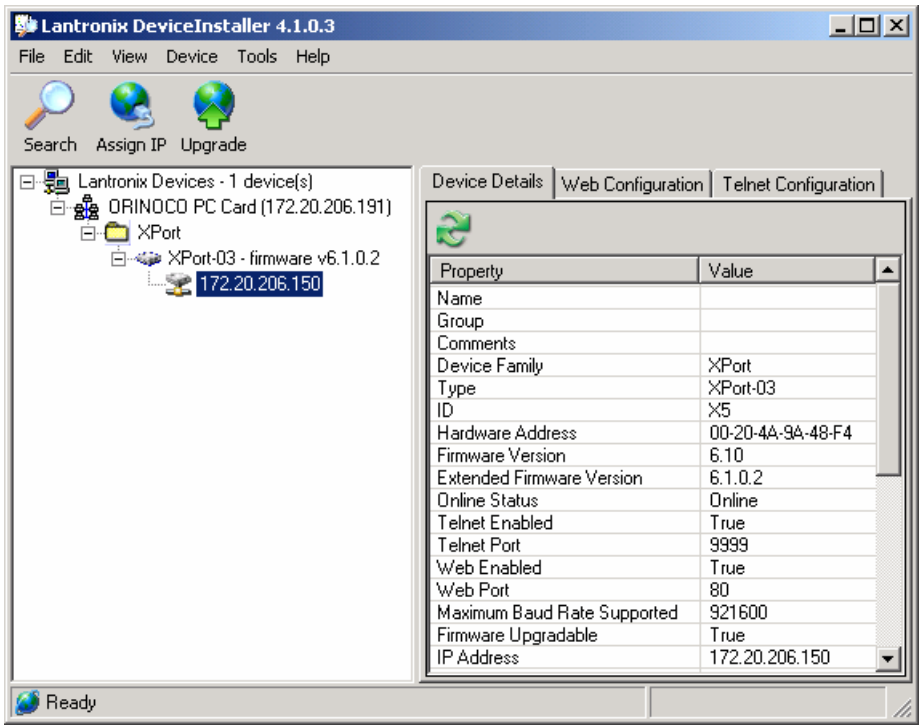
1.3.1 Using Device Installer

In the previous section, the unit was assigned a fixed IP address. It should now appear in the window with the new IP address.



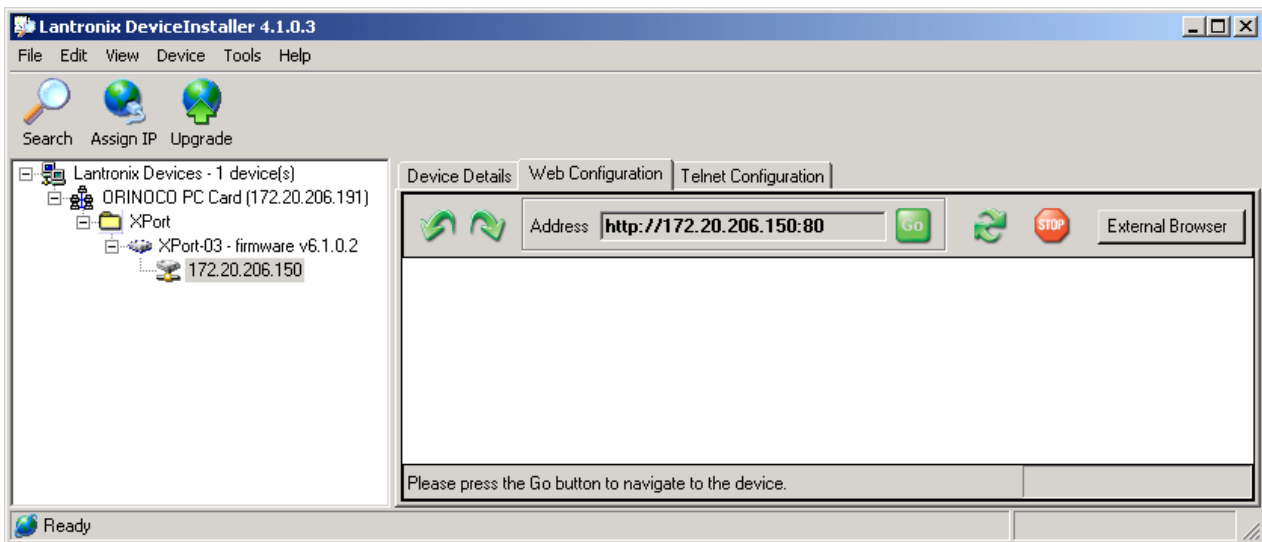
Click on the XPort-03 device to select it. Note that the **Upgrade** icon appears.

The XPort folder shown in the left frame can be expanded. When you expand the folder, tabs will appear in the right frame. You can also double-click any device in the right window to expand the window into tabs. The following screen is a sample of the folder expanded and the tabs displayed.



1.3.2 Web Configuration

Click on the Web Configuration tab to display the web control window.



You can view the web configuration in the Device Installer window or open an External Browser. To view the web configuration in the Device Installer window, click the **Go** button. To view the web page in an external browser, click the **External Browser** button. The following example shows a web page opened in an External Browser.

Note: If the Enter Network Password dialog box appears, simply press the enter key. There is no User Name or Password set at this time.



1.3.3 Telnet Configuration

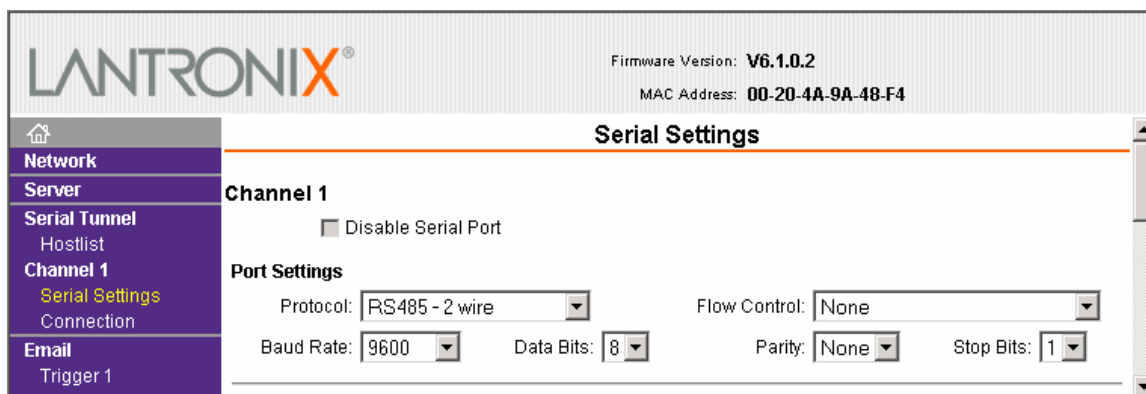
You can also set the configuration parameters using a Telnet connection. This method is more complicated than using Device Installer.

Note: You cannot configure the Configurable Pins with a Telnet connection. You must use the Web Manager. Therefore, you cannot completely configure the NET485 for RS485 operation using Telnet.

Telnet configuration is covered in the NET485 User Manual.

1.4 Set Protocol to RS485

Click on **Serial Settings** in the left column and the Serial Settings web page will open.

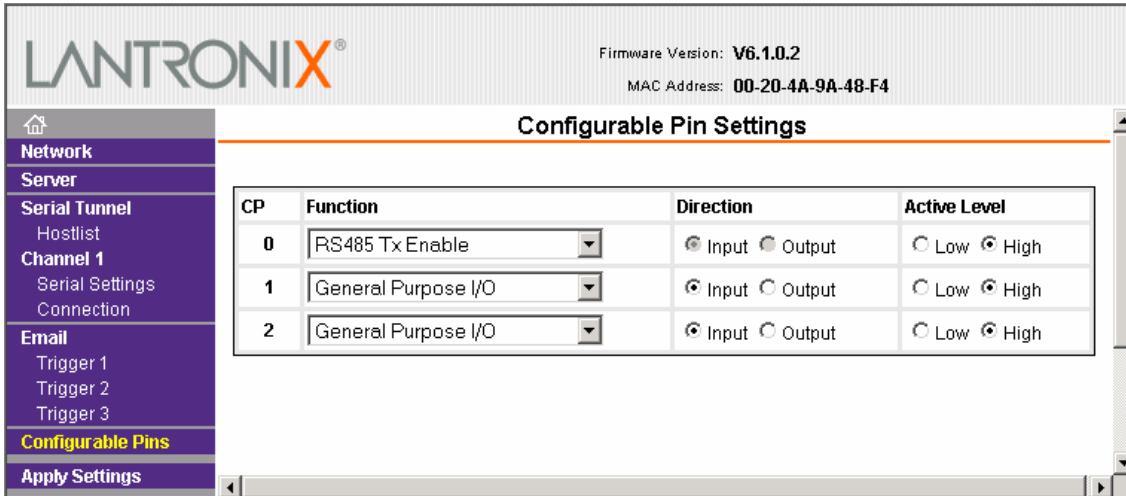


Under **Port Settings**, locate the **Protocol** selection and click the down arrow. Select **RS485 – 2 wire**. Change the Baud Rate, Data Bits, Flow Control, Parity and Stop Bits to match your product.

Go back to the left column and click on **Apply Settings**. You should see a message to wait while the configuration is saved. The NET485 will reboot and you will be returned to the Configuration Manager page.

1.5 Set RS485 Tx Enable for CP0

Click on **Configurable Pins** in the left column and the Configurable Pin Settings web page will open.



The screenshot shows the LANTRONIX Configurable Pin Settings web page. The page header includes the LANTRONIX logo, Firmware Version: V6.1.0.2, and MAC Address: 00-20-4A-9A-48-F4. The left sidebar contains a navigation menu with options: Network, Server, Serial Tunnel, Channel 1, Email, Configurable Pins, and Apply Settings. The main content area displays a table with the following data:

CP	Function	Direction	Active Level
0	RS485 Tx Enable	<input checked="" type="radio"/> Input <input type="radio"/> Output	<input type="radio"/> Low <input checked="" type="radio"/> High
1	General Purpose I/O	<input checked="" type="radio"/> Input <input type="radio"/> Output	<input type="radio"/> Low <input checked="" type="radio"/> High
2	General Purpose I/O	<input checked="" type="radio"/> Input <input type="radio"/> Output	<input type="radio"/> Low <input checked="" type="radio"/> High

In the **CP0** row, click on the down arrow in the Function box and select **RS485 TxEnable**. To the right of the Function box is the **Active Level** column. Click on the **High** option. Go back to the right column and click on **Apply Settings**. You should see a message to wait while the configuration is saved.

The NET485 is now configured for RS485 operation.

1.6 Quick Test

This quick test is designed to demonstrate the following:

- The ability of the unit to move data from the serial port to the ethernet port
- The ability of the unit to move data from the ethernet port to the serial port

Use Device Installer to locate the unit on your network. Note the IP address.

Note: This test assumes that you have an RS422 or RS485 port or adapter available on your PC.

Serial Session

Start a session of HyperTerminal or other terminal emulation program. Enter a name for the new connection and click OK. Example: SERIAL

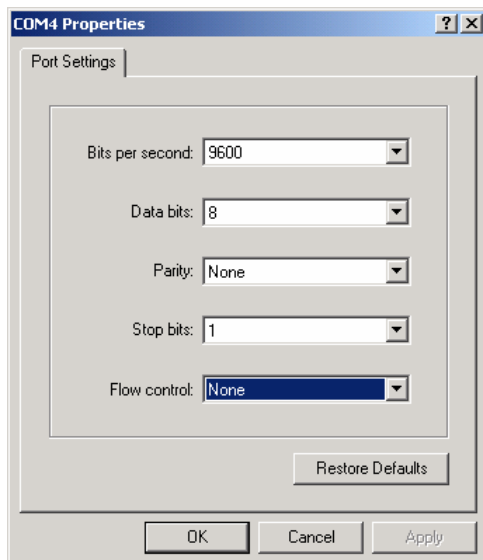
In the **Connect To** dialog box, go to the **Connect using** field and select the Com port that is connected to the NET485 and click OK.

Note: See the user manual for NET485 wiring details.



In the **COMx Properties** dialog box, enter 9600, 8, None, 1, None and click OK. This is the RS422/485 serial port terminal.

Note: Make sure your serial port settings match the settings on the NET485.



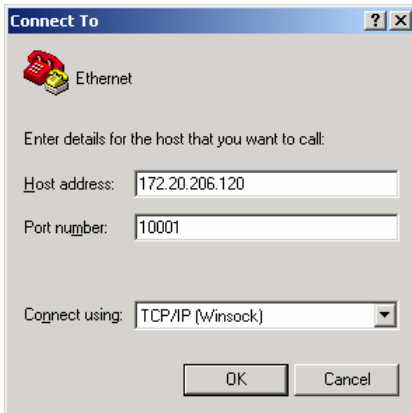
The status message for the serial connection should show it is connected.

TCP/IP Session

Start another session of HyperTerminal. Enter a name for the new connection and click OK. Example: ETHERNET

In the **Connect To** dialog box, go to the **Connect using** field and select **TCP/IP (Winsock)**. Enter the IP address of the NET485 and enter 10001 (default) for the Port number and click OK. This is the Ethernet terminal.

Note: To set the Local Port number on the NET485, go to the Web Manager page, click on Connection and scroll down to the Endpoint Configuration section. Enter the port number in the Local Port field.



The status message for the TCP/IP connection should show it is connected.

Resize the two HyperTerminal windows so you can see both on your screen. Now you can enter data in one terminal and see it appear in the other. You are sending characters between the serial port and the Ethernet port, exactly what the NET485 was designed to do.

Note: Remove the RX Term and TX Term termination jumpers for short transmission lines.

1.7 Loop Back Test

This test allows you to run a loop-back test on the NET485. This test will only work in the RS422 Full Duplex Mode.

Use the Web Manager to set the protocol to RS422/RS485-4 wire mode. The Protocol setting is found on the Channel 1 Serial Settings page. Remember to click the OK button at the bottom of the page AND click the Apply Settings button on the left side of the page.

Install a jumper from TXDA to RXDA and a jumper from TXDB to RXDB.

Open the case and locate the jumper on J2. Move it to the two pins nearest the Green terminal block. This is for Full Duplex mode.

Start a session of HyperTerminal. Enter a name for the new connection and click OK. Example: LOOP

In the **Connect To** dialog box, go to the **Connect using** field and select **TCP/IP (Winsock)**. Enter the IP address of the NET485 and enter 10001 (default) for the Port number and click OK. Make sure character echo is turned off.

Type characters and they should appear in the HyperTerminal window.