

XCI DeviceComm Manager Overview

Version 1.0 (Build 107)
May 8, 2002

Support for virtual COM ports, on the following platforms:
Windows 2000; Windows NT 4.0;
Windows XP



DeviceComm Manager is a COM port redirection software application for PC platforms. Its function is to re-direct XCI Command Center application data destined for a local serial (COM) port on a PC. Rather than going out the local port, the data is transmitted across the Ethernet network using TCP/IP. A XC-LAN232 device server attached to the network receives the data and presents it on its serial port. Conversely, data into the serial port of the XC-LAN232 device server is sent back to the XCI Command Center application via the network to the DeviceComm Manager. The DeviceComm Manager then presents the data to the XCI Command Center application as if it were from a local serial COM port.

One of the main objectives of the DeviceComm Manager software is to eliminate the need to modify the standard XCI Command Center application. If the application knows how to connect to a local serial port, it can by default talk to a remote serial port on a device server using the DeviceComm Manager software. No understanding of how to develop networking software is required.

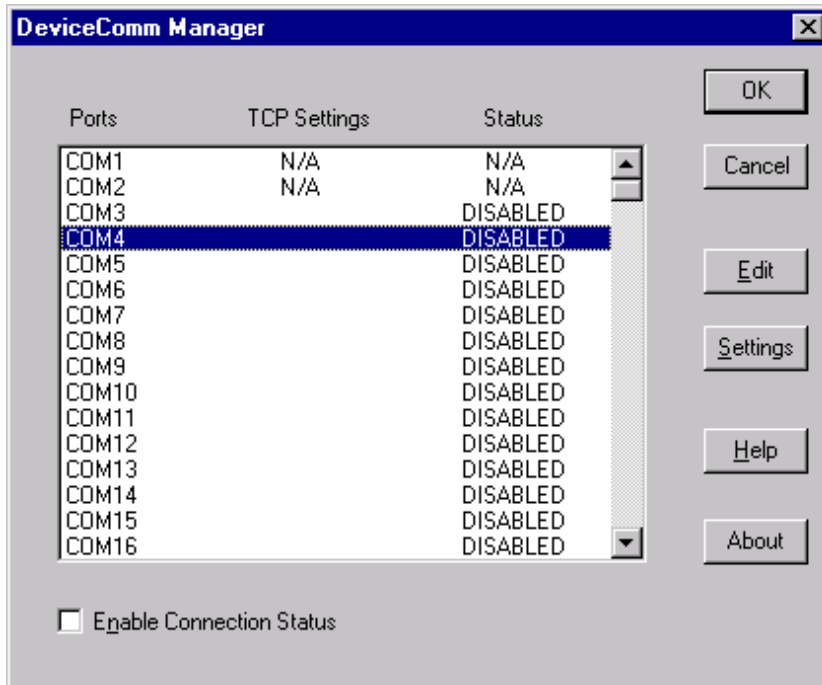
Breaking down the DeviceComm Manager software application, it consists of a Control Panel applet, a device driver, and a Windows service.

Installation

From your installation CD, install the XCI DeviceComm software for Windows XP. Place the CD into your CD-ROM drive. If it does not autostart, from the Windows desktop, select '**Start**', then '**Run**', and then '**Browse**' to locate the file named **DeviceComm.exe**'. Click '**OK**', and allow the software to load. Follow the instructions on the screen for installation.

Setup

1. Open Control Panel.
2. Double click on the "DeviceComm Manager" icon.
3. Ports marked "N/A" are being used by other hardware / software on your system.
4. Select one of the "DISABLED" ports by clicking on it, and then press the "Edit" button. You must use COM1, COM2, COM3 or COM4, as these are the only COM ports that will work with the XCI Command Center software.



5. Select the “Enabled” check box.

6. Type in the IP address of the target device server in the “Host:” section, such as 192.168.0.10.

7. Enter the Port number 10001 of the target device server in the “Port:” section.

****Please Note****

The Port number 10001 must match the port number assigned to the hardware. The default port number is shipped at 10001. If it is necessary to change the port number due to specific situations with your network, remember that the numbers must match.

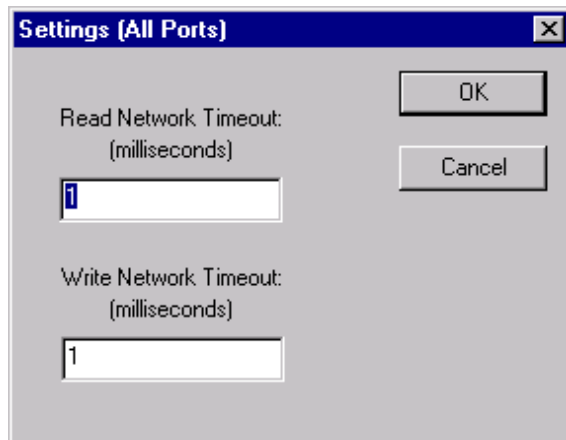
You will be required to reboot your system when enabling COM ports. You may want to set them all up at one time and then reboot.

8. Select the “Enable Connection Status” checkbox at the bottom of the screen titled “DeviceComm Manager” if you wish to be notified via screen pop-up when the connection to the remote port is established. If your application is very time sensitive regarding the initial connection, or you do not wish to have a screen pop-up, leave this box unchecked.

9. No other setup is required. In the above example, all data sent to COM4 will be sent across the network to the device server at “192.168.0.10”, port “10001”.

There is also a “settings” button, which allows for advanced configuration. Some serial applications do not work well when redirected because they are not expecting the latency (delay) that an Ethernet network may cause. Increasing the “Read Network Timeout” and the “Write Network Timeout” values may help the situation. Network latency varies depending on a number of factors. You can get a rough idea of the delay at a given time by “pinging” the device server from the PC and looking at the “time” column. You may also find the PC command “tracert” helpful.

See your Windows OS documentation for more details on these commands. Both “ping” and “tracert” are DOS prompt commands.



Miscellaneous

1. Other possibilities for the “status” column in the control panel applet are “IDLE” and “CONNECTED”. “IDLE” means that an IP address and port number have been associated with the COM port. “CONNECTED” means an active TCP/IP connection exists between the COM port and the device server.
2. Baud rate, parity, stop bits, etc. must be set manually on the XC-LAN232 device server. Your setting will be 9600,N,8,1.

Connecting the Hardware

Connecting the XC-LAN232 to your network and to the appropriate XC-SSA2 Serial-Stat Network Adapter is simple. All necessary cables are included in your XC-LAN232. See the '**Typical 10BaseT Ethernet Communications Network**' drawing for an overview of the system level connections.

A) **9-25 Pin Cable and 9-9 Pin Cable.**

- Connect the 25-pin end to the 25-pin port on the XC-LAN232.
- Connect the 9-pin end to the MODEM port on the XC-SSA2(/CLK).
- If extra length is needed for connection, insert a 9-9 Pin cable between the 9-25 pin cable and the MODEM port. (not supplied)

B) **Power Supply**

- Connect the power supply to the XC-LAN232.

C) **RJ-45 10BaseT CAT5 Cable**

- Connect one end of the RJ-45 cable to the XC-LAN232 and the other end to your network hub or gateway/router.

D) **IMPORTANT! : Set the XC-SSA2(/CLK) Dip Switches to 'MASTER' AND 'MODEM'.**

Testing the XC-LAN232 connection

In order to assure proper connection, it is recommended that a short test be run from your PC. This 'ping' test will allow you to verify that the PC and XC-LAN232 are properly connected and communicating on the network.

A) Open an MS-DOS shell window and change to the 'C:\' directory.

B) Type the following command, which will look over the network and reply with the address found and the time for the packet delivery. 'Ping' will automatically test the connection 4 times. If you get an answer similar to the one shown to the right, the network connection for both the PC and the XC-LAN232 is correct.

```
Microsoft ® Windows XP  
© Copyright Microsoft Corp. 1981-2001.
```

```
[C:\] ping 192.168.10.1
```

```
Pinging 192.168.10.1 with 32 bytes of data:
```

```
Reply from 192.168.10.1: bytes=32  
time=2ms TTL=32
```

```
Reply from 192.168.10.1: bytes=32  
time=1ms TTL=32
```

```
Reply from 192.168.10.1: bytes=32  
time=2ms TTL=32
```

```
Reply from 192.168.10.1: bytes=32  
time=3ms TTL=32
```

```
[C:\]
```

C) Repeat this procedure for each XC-LAN232 as it is added to the network.

D) Close the MS-DOS window.

E) Launch XCI Command Center and set the proper COM port. Redirector will automatically redirect the COM port to the appropriate IP address. Use the XCI Command Center Software as usual.



XCI Corporation

Ethernet Add-On Network Adapter

XC-LAN232

**Installation Guide
For
Windows 95/98**



XCI Corporation

This guide will give you a graphical flow for setting up your PC and network for use with the XC-LAN232 Ethernet Add-On Network Adapter. This device works in conjunction with XCI's XC-SSA2 family of Serial-Stat Network Adapters.

In some cases, you may need to have your Windows installation CD available to update drivers if they were not originally installed on your system.

There are five (5) major steps to installing the network;

- Step 1: Configuring your PC Ethernet Adapter for use with XCI's XC-LAN232 Ethernet Add-On Network Adapter
- Step 2: Installing the Redirector Software for COM port redirection from XCI's Command Center software to the IP address for the XC-LAN232 (This allows the XCI Command Center to look across the network at the XC-LAN232 and XC-SSA2 Adapter as if it were directly connected to your PC's COM port.
- Step 3: Configuring the XC-LAN232 IP network address
- Step 4: Connecting the XC-LAN232 to your network
- Step 5: Testing the XC-LAN232 connection

Let's get started!

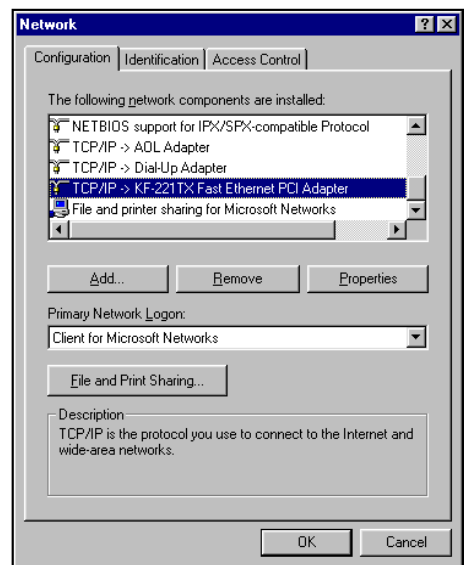
Step 1 Configuring your PC Ethernet Adapter for use with XCI's XC-LAN232 Ethernet Add-On Network Adapter

- A) Install your 10BaseT LAN card into your PC using the manufacturer's instructions. Verify that the device is operating properly on your network.
- B) Using the mouse, right-click the **'Network Neighborhood'** icon on your desktop and move to the **'Properties'** tag as shown in the example. Then click the mouse.



- C) From the dialog that pops up, click the **'Configuration'** tab and scroll through the list until you find the *'protocol'* icon and something similar to **'TCP/IP ->KF-221TC Fast Ethernet PCI Adapter'**. The actual text will be the description of your network adapter. See the figure to the right for an example.

If this does not exist in your window, you will need to install the appropriate set of drivers. Insert the Win95/98 installation CD and click **'Add...'**, then select **'Protocol'**, then click **'Add...'**. A new dialog will pop up. Select the type of LAN you have from the **'Manufacturers'** list (such as Microsoft), then select **'TCP/IP'** and click **'OK'**. Follow the instructions on the screen to install the drivers.



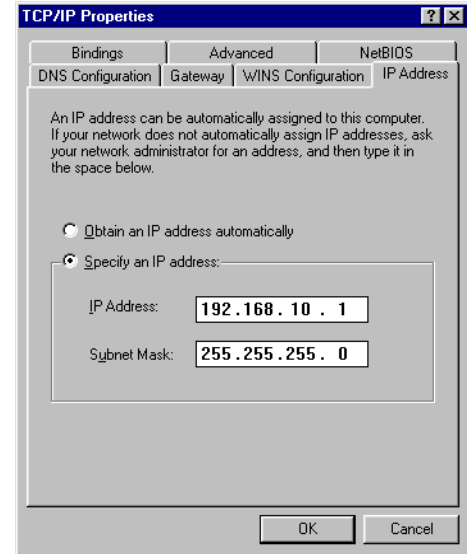
- A) Now, from the '**Configuration**' tab, click the '**Properties**' button. A new dialog will pop up. Select the '**IP Address**' tab. Click on the round button '**Specify an IP Address!**'. This will be the IP address of your PC.

Enter '**192.168.10.x**', where 'x' is any number between 2 and 253. Similarly, set the Subnet Mask to '**255.255.255.0**'.

Remember that your PC and each XC-LAN232 on the network must have a unique IP address. Plan your system before you start configuring address.

Example:

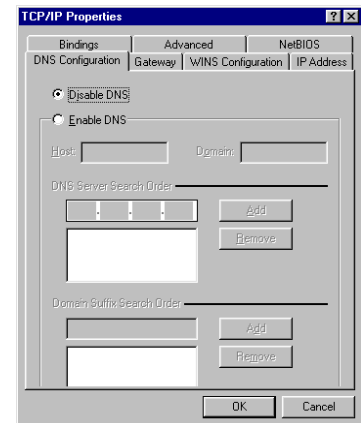
PC	=	192.168.010.253
1st XC-LAN232	=	192.168.010.001
2nd XC-LAN232	=	192.168.010.002
3rd XC-LAN232	=	192.168.010.003
4th XC-LAN232	=	192.168.010.004



Click '**OK**'.

NOTE: Though XCI networks will work on just about any networking scheme, it is best to have the PC with the XCI Command Center Software on XCI's 'Class C' private network addressing scheme. This scheme conforms to Internet and Intranet standards and will peacefully coexist on larger networks without a problem. In addition, if you use XCI's private IP address scheme, the network will be less likely to be infiltrated by a novice hacker. Firewall protection, if desired, should be handled with the appropriate network configuration tools. See your network administrator for help.

- E) Next, click the '**DNS Configuration**' tab and then click the round button '**Disable DNS**'. Click '**OK**'.



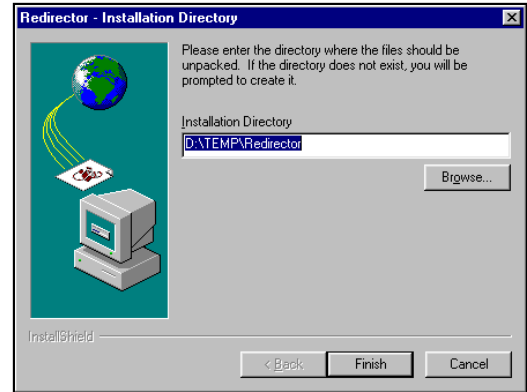
- F) Next, if you need to enter a gateway address, follow the appropriate screens for configuration. See your network administrator for details on your gateway address. Click '**OK**' when complete.

YOU WILL NEED TO RESTART YOU PC FOR THESE CONFIGURATIONS TO TAKE EFFECT.



Step 2 Installing the Redirector Software

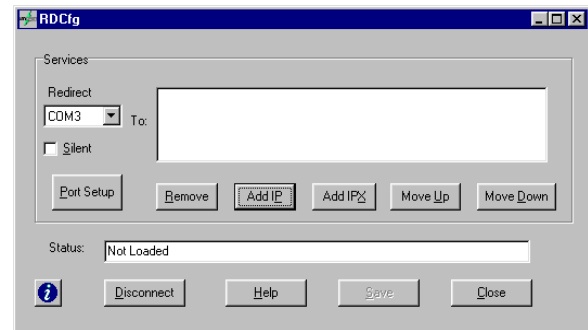
- A) From your installation CD, install the XCI ComRedirector software for Windows 98. Place the CD into your CD-ROM drive. If it does not autostart, from the Windows desktop, select **'Start'**, then **'Run'**, and then **'Browse'** to locate the file named **'comredir.exe'**. Click **'OK'**, and allow the software to load. Follow the instructions on the screen for installation.



- B) The installation is automatic and you will see the screen to the right when it is complete. Click **'OK'**.

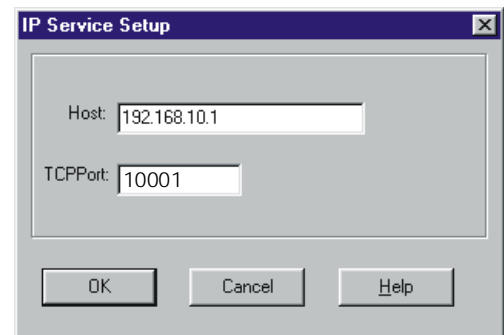


- C) Start the Com Redirector software from the **'Start'** Menu. The screen to the right will pop up. Notice that first available COM port has already been detected by Redirector. This may be COM port may actually be a 'logical' COM port that doesn't exist physically on your machine.



From this screen, you will now configure the IP address you want to associate with the COM port.

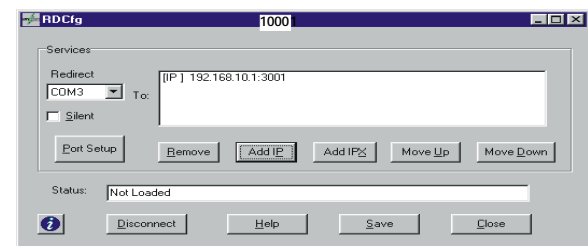
- D) In this example, which holds true for the first COM port selection, click the **'Add IP'** button. The screen to the right will appear. Enter the information as shown and click **'OK'**.



The 'Host' is the IP address of the XC-LAN232, and the 'TCPPort' is the address port assigned for channel one of the RS-232.

The 'Host' will change with each additional pair of COM port and XC-LAN232 devices attached to the network. The default 'TCPPort' is 10001.

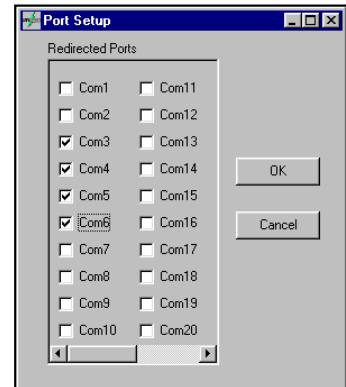
- E) The screen to the right will appear. In this case, there is one logical COM port configured and it will automatically redirect any COM port activity to the network IP address 192.168.10.1 at RS-232 channel 1 (10001).



- F) If more than one XC-LAN232 will be installed on the network, click the **'Port Setup'** and check each COM port you want to add. Don't worry, you can always come back and change or add more later.

In the example to the right, four (4) logical COM ports have been checked, each of which will be associated with an individual XC-LAN232 and its unique IP address.

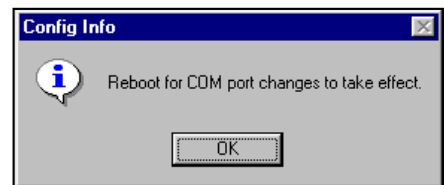
When finished, click **'OK'**.



- G) For each XC-LAN232 to be installed, the same steps will need to be repeated. Make sure that the IP address are set correctly and the TCP Port is 3001. To assign the IP address, first click on the **'down'** button as show to the right and then click the COM port you want to assign, then repeat procedures E) and F).

- H) When complete, you will need to click **'Save'** and then **'Close'** and reboot your machine for the changes to take effect.

After rebooting, the Redirector software will not need to be reloaded to use with the XCI Command Center. When Command Center is launched, it will automatically connect and redirect to the COM port you have selected in the program.



Step 3 Configuring the XC-LAN232 IP network address

See the **XC-LAN232 Install Guide** for instructions on setting the IP address and all other settings for the hardware.

Step 4 Connecting the XC-LAN232 to your network and the XC-SSA2(/CLK)

Connecting the XC-LAN232 to your network and to the appropriate XC-SSA2 Serial-Stat Network Adapter is simple. All necessary cables are included in your XC-LAN232. See the **'Typical 10BaseT Ethernet Communications Network'** drawing for an overview of the system level connections.

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Step 5 Testing the XC-LAN232 connection

In order to assure proper connection, it is recommended that a short test be run from your PC. This 'ping' test will allow you to verify that the PC and XC-LAN232 are properly connected and communicating on the network.

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- C) Repeat this procedure for each XC-LAN232 as it is added to the network.
- D) Close the MS-DOS window.
- E) Launch XCI Command Center and set the proper COM port. Redirector will automatically redirect the COM port to the appropriate IP address. Use the XCI Command Center Software as usual.

```
Microsoft ® Windows 95
© Copyright Microsoft Corp. 1981-1986.

[C:\] ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time=2ms TTL=32
Reply from 192.168.10.1: bytes=32 time=1ms TTL=32
Reply from 192.168.10.1: bytes=32 time=2ms TTL=32
Reply from 192.168.10.1: bytes=32 time=3ms TTL=32

[C:\]
```