TEXIO
Test and Measurement Solutions

INSTRUCTION MANUAL

IF-71LU

IP ADDRESS CONFIGURATION COM REDIRECTOR

Ver. 1.01

◆◆◆◆◆ CAUTIONS ◆◆◆◆◆

This product is designed to be connected to a network. If the device is configured incorrectly and connected to a network, it may cause a network-wide failure.

When allocating and specifying an IP address, consult with your network administrator and specify the appropriate IP address value for the network environment to which the device is connected.

<Operating Environment>

This product supports Microsoft Windows XP, Windows Vista, Windows 7 and Windows 8.
A web browser is required to access the settings page.

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1. OUTLINE

XPort (Lantronix) is used for the LAN communication with IF-71LU. It can be controlled by TCP/IP-based socket communication, or by the virtual COM port.
The Lantronix CPR (Com Port Redirector) is used as a virtual COM driver.
This manual explains how to install the COM Redirector, which is called the CPR, as well as how to configure the virtual COM.

2. SPECIFYING THE IP ADDRESS

A controller can be used to specify the IP address. However, to specify the IP address when configuring a local port or host server, you must use a web browser to start the device server program in the LAN controller XPort used by IF-71LU.

This manual explains how to start the device server embedded in XPort, and how to configure the program that was started. The web browser used in the explanations provided is Internet Explorer.
The operation of the device server embedded in XPort may vary, depending on the web browser that is used.

An IP address must be entered to start the device server. If you do not know the IP address, use a controller to specify a fixed IP address, or use the software for CPR to search for and specify the IP address. This latter method is described in the next chapter.

Note:
The explanations in this manual describe the operations of firmware version V6.1.0.0 of the program for the device server embedded in XPort.

2-1 Displaying the device server in the IP address configuration window

Start IE (Internet Explorer), and in the address bar indicated by ① in the figure below, enter the IP address of the device whose settings are to be changed.
In the example below, enter "http://172.22.44.222" and then press the ENTER key.
The password request window (② in the figure below) appears when a connection is successfully established.

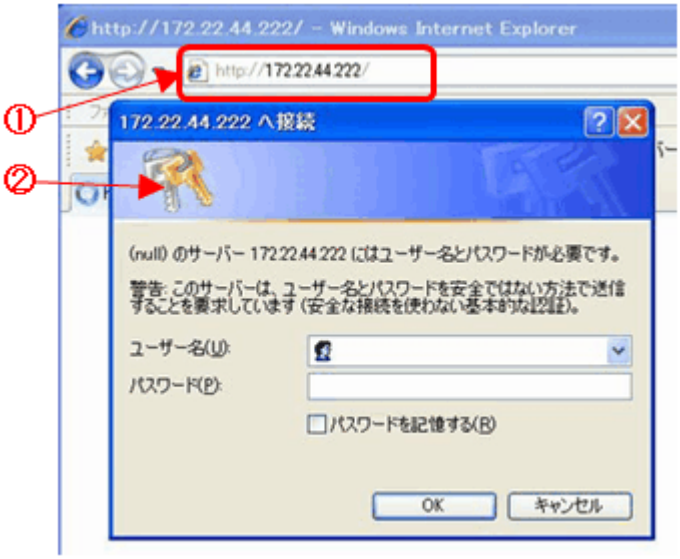

Fig. 2-1: Password request window

Because the password function is not used for IF-71LU, there is no need to enter a password. Click "OK" to display the XPort device server settings window (Fig. 2-2).

Note: Do not use the password function.

2-2 Device server items that can be configured

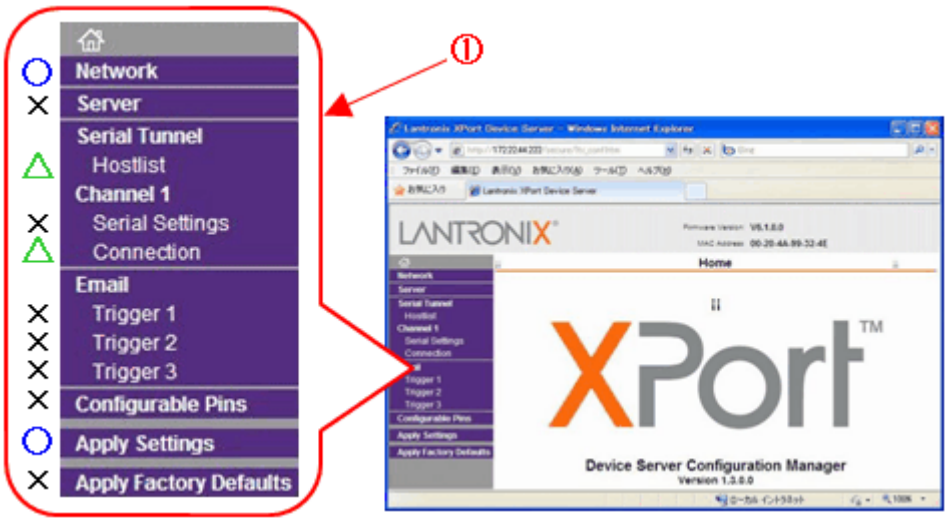

Fig. 2-2: XPort device server settings window

Items marked by a circle (○) in ① are basic setting items required when changing the IP address. Items marked by a triangle (△) indicate the detailed settings for IP address configuration. Items marked by an "x" (×) are not required.

Make sure to specify the correct settings. If you specify the incorrect settings, the device might become uncontrollable.

2-3 "Network Settings" window (IP address configuration)

Click "Network" (① in the figure below) to display the network settings window.

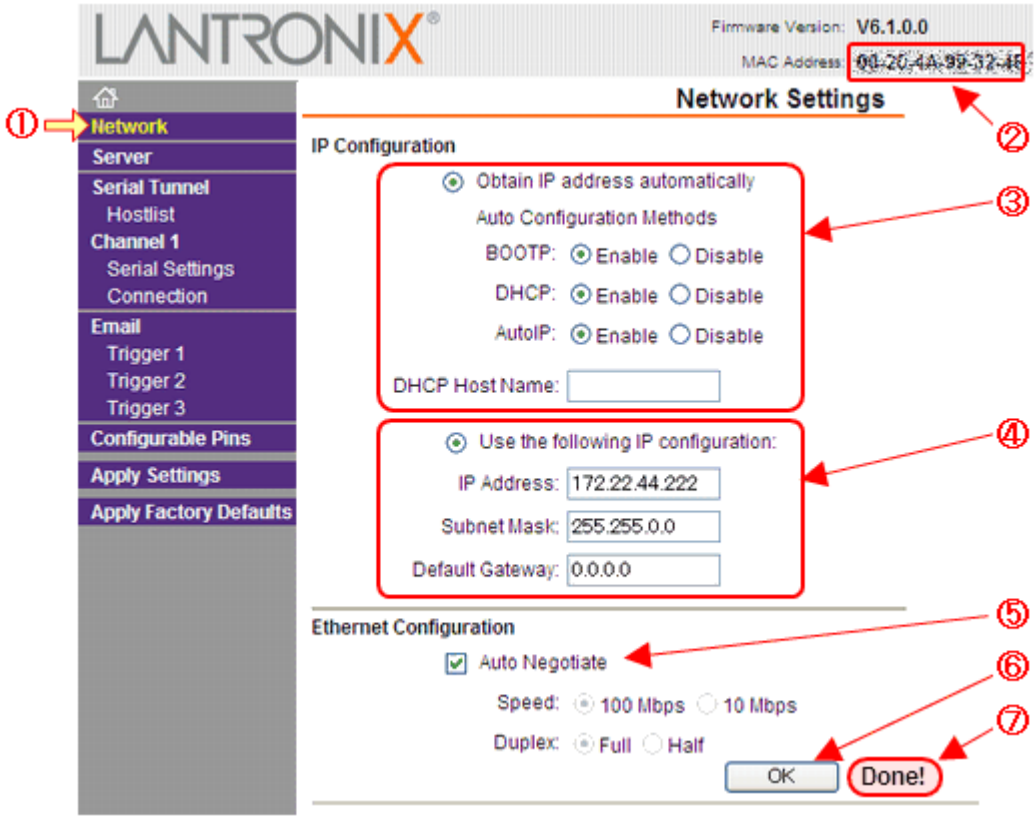

Fig. 2-3: Network settings window

In the figure above, ③ indicates the settings for automatic IP address configuration, and ④ indicates the settings for fixed IP address configuration. Either of these configurations can be selected, so choose the appropriate configuration for the current setting conditions. The MAC address is indicated by ②.

Automatic IP address configuration

Select "Obtain IP address automatically" (③) to enable the setting.

BOOTP	Select "Enable" to enable the boot trap protocol. This protocol enables the server to allocate an IP address by automatically selecting an address from a pool of available addresses.
DHCP	Select "Enable" to enable the DHCP function when a DHCP server is available and a special IP address needs to be allocated dynamically during startup.
AutoIP	Select "Enable" to enable the AutoIP function when a special IP address needs to be allocated dynamically during startup even though a DHCP server is unavailable. AutoIP for XPort uses the IP address ARP function to search for and allocate an empty address that has a class B subnet and is in the address range of "169.254.x.x". When a DHCP server is available, the DHCP server takes precedence over AutoIP.

* If "Disable" is selected for "BOOTP", "DHCP", and "AutoIP", operation will become unstable. If all the items are disabled, there is no reason for the IP address to be automatically specified. In this case, use fixed IP address configuration.

In normal cases, select "Enable" for "BOOTP", "DHCP", and "AutoIP", unless there is a good reason for not using automatic IP address configuration.

Fixed IP address configuration

Select "Use the following IP configuration" (④) to enable the setting.

IP Address	Enter an IP address of x.x.x.x. The letter "x" represents a number between 0 and 255.
Subnet Mask	Enter a subnet mask of x.x.x.x. The bits assigned in the subnet mask must be entered in descending order, with the high-order bit listed first. The value for "x" must be the number "0", for which there is no mask, or "128", "192", "224", "240", "248", "252", "254", or "255".
Default Gateway	Specify the IP address used to access to the outside of the local network. Normally the router is the default gateway. Specify "0.0.0.0" if it is not used.

Ethernet operation setting

Select "Auto Negotiate" (⑤) to enable automatic configuration.

If automatic configuration does not work, configure the speed manually.

Fixing the settings data

Click "OK" (⑥) to fix the settings data.

An error message dialog box will appear if any of the items in the settings data are specified incorrectly.

In this case, change the setting of the item displayed in the dialog box.

When the settings are successfully fixed, the message "Done!" (⑦) is displayed once.

2-4 "Hostlist Settings" window (host search IP address configuration)

Click "Hostlist" (①) to display the hostlist settings window.
* Modify the settings only when necessary.

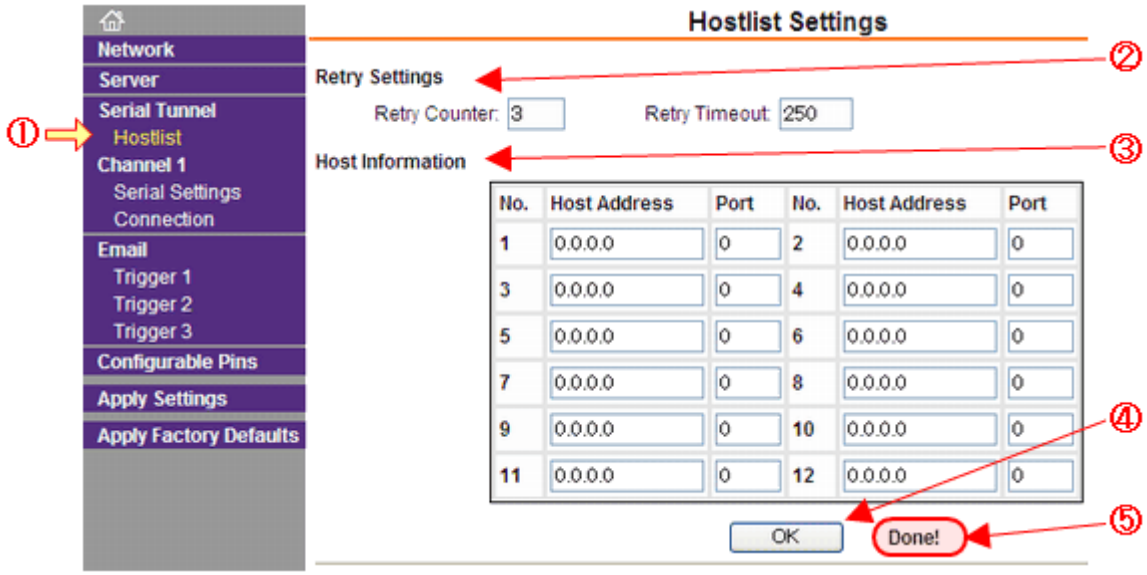

Fig. 2-4: Network settings window

Number of retries and amount of time for confirming connection

"Retry Settings" (②) lists the settings for the number of retries and amount of time for confirming that a connection to the host was established.
"Retry Counter": A value between "0" and "9" can be specified for the retry counter. The default setting is "3".
"Retry Timeout": A value between "0" and "65535" can be specified in 1 ms increments for the retry timeout. The default setting is "250 mS".

Host information

"Host Information" (③) is used to specify the IP address of the hosts to be connected.
A maximum of 12 hosts can be connected. Connection is confirmed in order, beginning with the number "1".
If there is no host to be confirmed, specify "0.0.0.0".

Fixing the settings data

Click "OK" (④) to fix the settings data.
An error message dialog box will appear if any of the items in the settings data are specified incorrectly.
In this case, change the setting of the item displayed in the dialog box.
When the settings are successfully fixed, the message "Done!" ⑤ is displayed once.

2-5 "Connection Settings" window (local port settings)

Click "Connection" (① in the figure below) to display the connection settings window.
This window is used to specify the endpoint. If there is no problem with the port number, we recommend using the default setting.
* Modify the settings only when necessary.

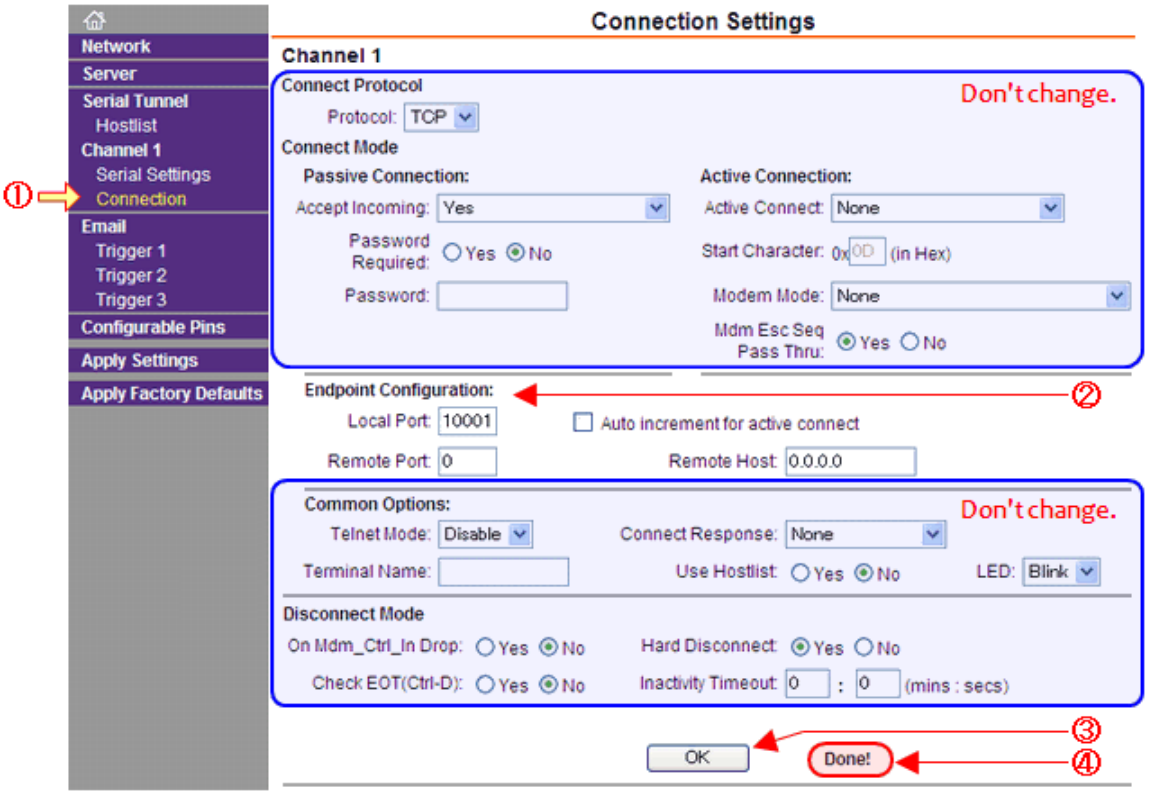

Fig. 2-5 Connection settings window

2-5-1 Endpoint configuration

"Endpoint Configuration" (②) is where the endpoint settings are specified.
"Local Port": A number between "0" and "65535" can be specified as the local port number. The default setting is "10001".
The port numbers listed below are reserved. Do not use these port numbers.

Port number	Use
0	Used to transmit the connection change.
1 to 1024	Well-known port numbers.
9999	Setup menu.
14000 to 14009	Used for compatibility with the old redirector.
30704	Used for the remote control of general-purpose IO.
30718	Used to search for the device installer.

"Auto increment for active connect" is selected to specify automatic search for the local port.
When selected, the local port auto increment function is enabled and connection is checked, beginning with "50000".
If "59999" is reached without establishing a connection, the check is repeated again from "500000".
This setting is unselected by default.

"Remote Port": A number between "0" and "65535" can be specified as the remote port number. The default setting is "0".
"Remote Host": A remote host UP address of "x.x.x.x" can be specified. The default setting is "0.0.0.0".

2-5-2 Fixing the settings data

Click "OK" (③) to fix the settings data.
An error message dialog box will appear if any of the items in the settings data are specified incorrectly. In this case, change the setting of the item displayed in the dialog box.
When the settings are successfully fixed, the message "Done!" ④ is displayed once.

2-6 "Apply Settings" window (saving the settings data)

Click "Apply Settings" (① in the window below) to save the modified settings data to the IF-71LU card.
Note that the save process starts immediately when you click ①.
When the save process is complete, window ② or ③ is displayed.

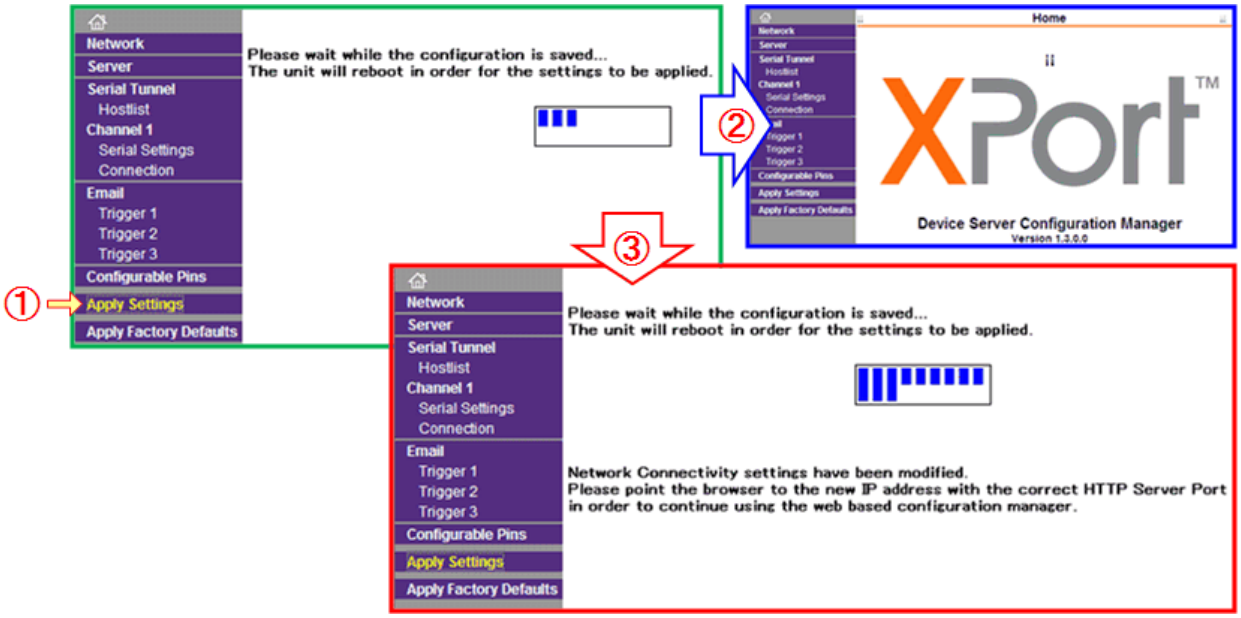

Fig. 2-6: Saving the settings data

Window ② is the save complete window that appears if the IP address remains unchanged.
Window ③ is the save complete window that appears if the IP address is different. Because the IP address was modified, an HTTP server error message is displayed under the progress bar.

2-7 About "Apply Factory Defaults"

"Apply Factory Defaults" (① in figure below) for the device server embedded in XPort is used to apply the factory defaults to XPort.
The following section explains how to restore the original IF-71LU settings when IF-71LU is accidentally initialized.

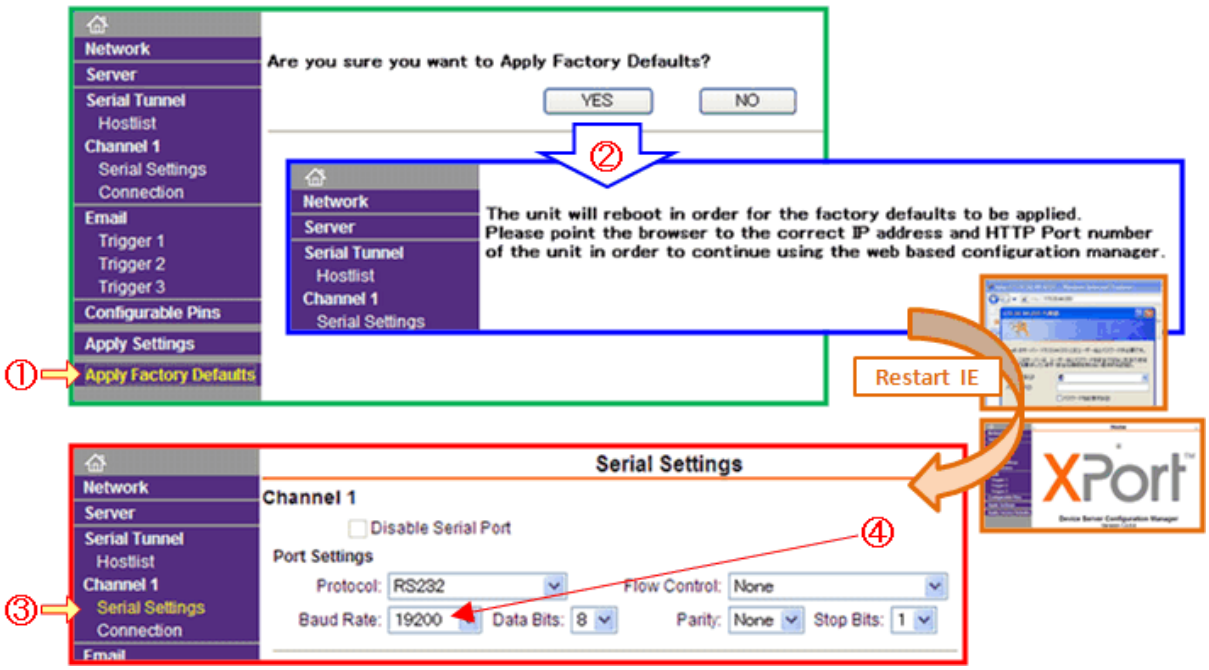

Fig. 2-7: Saving the default settings

Click "Apply Factory Defaults" (①). A message is displayed which asks whether you want to apply factory defaults.
Click the "YES" key to begin applying the factory defaults. Message ② is displayed.
Click the "NO" key to return to the top menu window.

When you execute "Apply Factory Defaults", the IP-related settings are excluded, but the default value of "10001" is specified for the local port. Communication with the controller is terminated, and the device can no longer be operated.

Along it seems that you can proceed with the settings process, IE might retain the old settings and values, thereby preventing the factory defaults from being applied correctly. For this reason, close IE and then restart it. Read out the device server program for XPort again, and then specify the same settings for XPort as those displayed in the settings window.

The "Baud Rate" value for communication between the XPort of IF-71LU and the controller is "19200".
Click "Serial Settings" (③) to display the serial port settings window. Change "Baud Rate" value ④ from "9600" to "19200".
If the IP address remains unchanged, click "Apply Settings" to save the settings.

You can use the IF-71LU initialization function of the controller to apply the factory settings.

3. DOWNLOADING AND INSTALLING THE COM REDIRECTOR

The COM redirector is a device driver that uses a virtual serial port instead of socket communication for LAN communication.
The functions provided by this driver make it easier to create or port software.
The COM redirector CPR (Com Port Redirector) can be downloaded from the Lantronix website.

CPR Version 4.3.0.1 (released Tuesday, July 12, 2011) supports the following Windows versions:
x86 (32 bit): Windows XP, Windows 2003 Server, Windows Vista, Windows 7, and Windows 2008 Server
x64 (64 bit): Windows Vista, Windows 7, and Windows 2008 Server

NET Framework Ver4.0 or higher is required for running Windows operation. It can be downloaded from Microsoft.

3-1 Downloading CPR

(1) Open the Lantronix website (http://www.lantronix.com).
(2) Select "Documentation" from the "Resources" drop-down list.
(3) Select "■Com Port Redirector" in "Utilities / Software" displayed in the lower-right section of the page.
(4) Select "■Com Port Redirector" in "Firmware / Utilities" on the "Downloads & Documentation" page.
(5) Scroll down to the following table on the download page containing the latest versions of the CPR software.
Click "http" for "CPR Setup application for Windows GUI" in the table to download the software.
(If you attempt to download the software via ftp, the security settings may cause an error to occur.)

	Download via FTP	Download via HTTP	Comment
CPR setup application for Windows GUI (1.3 MB) - requires internet access ftp http	ftp	http	
CPR setup application for Windows Command Line (1.3 MB) - requires internet access	ftp	http	
CPR Release Notes	ftp	http	

(6) If a security alarm message is displayed while downloading via http, select to execute the installation, then continue.
(7) Click "Install" when the CPR installer window is displayed (Fig. 3-1).

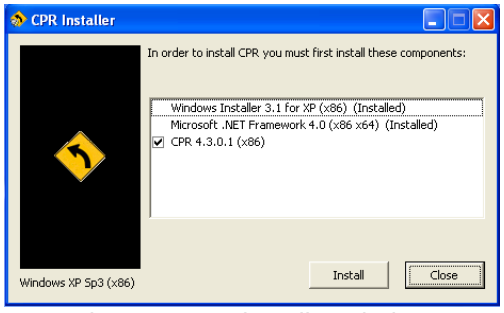

Fig. 3-1: CPR installer window

(8)The installation starts, and the windows change in the following order:

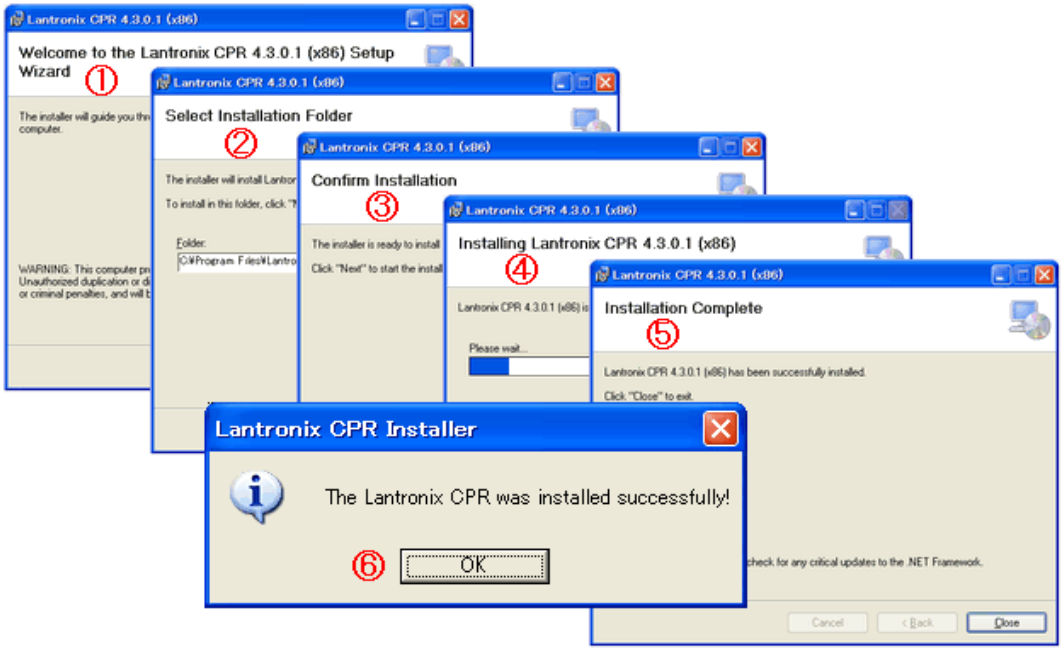

Fig. 3-2: CPR installer windows

① Click "Next" in the installation setup window.
② Click "Next" if the install folder remains unchanged.
③ The installation starts.
④ The installation status window appears.
⑤ The update message for Windows.NET Framework is displayed. Click "Close" to close the window.
⑥ A message is displayed to indicate that the installation of CPR is complete.

Confirm that "CPR" has been added to "Lantronix" in the "Start" menu.

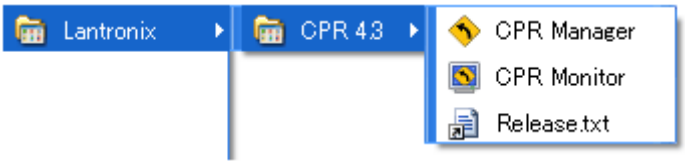

Fig. 3-3: CPR installer window

4. COM REDIRECTOR SETTINGS

CPR Manager is a utility used to allocate Xport to unused Com numbers.
If CPR has been installed, select "CPR Manager" from the "Start" menu (Fig. 4-1).

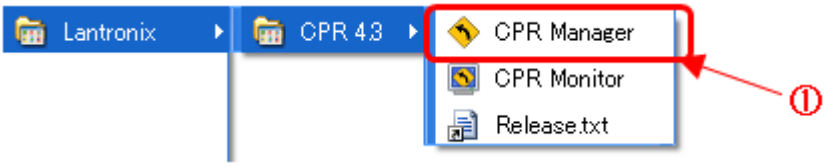

Fig. 4-1: CPR in the "Start" menu

CPR Monitor is a utility used to obtain information, such as logs. It can also be used to start CPR Manager. However, we recommend only selecting the instance of CPR Manager (①) registered in the "Start" menu.

4-1 Using CPR Manager to search for XPort devices in the network

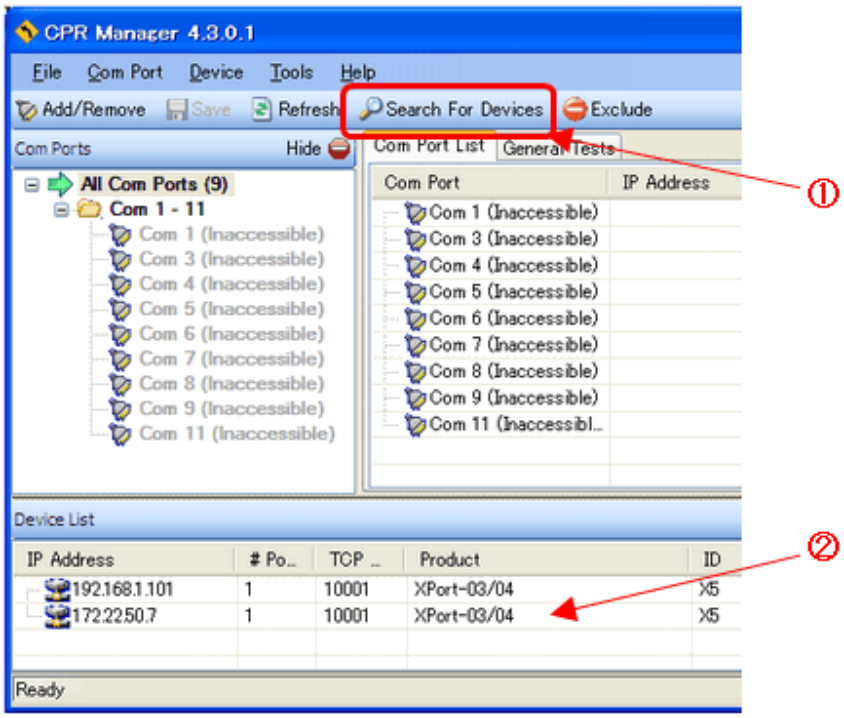

Fig. 4-2: CPR top window

When CPR Manager is started, the window shown in the figure above is displayed.
To search for XPort devices in the network, click "Search For Devices" (②) shown in the figure.
The information (②) for the XPort devices in the network (if any exist), such as the IP addresses, is displayed.

4-2 Using CPR Manager to add virtual Com ports

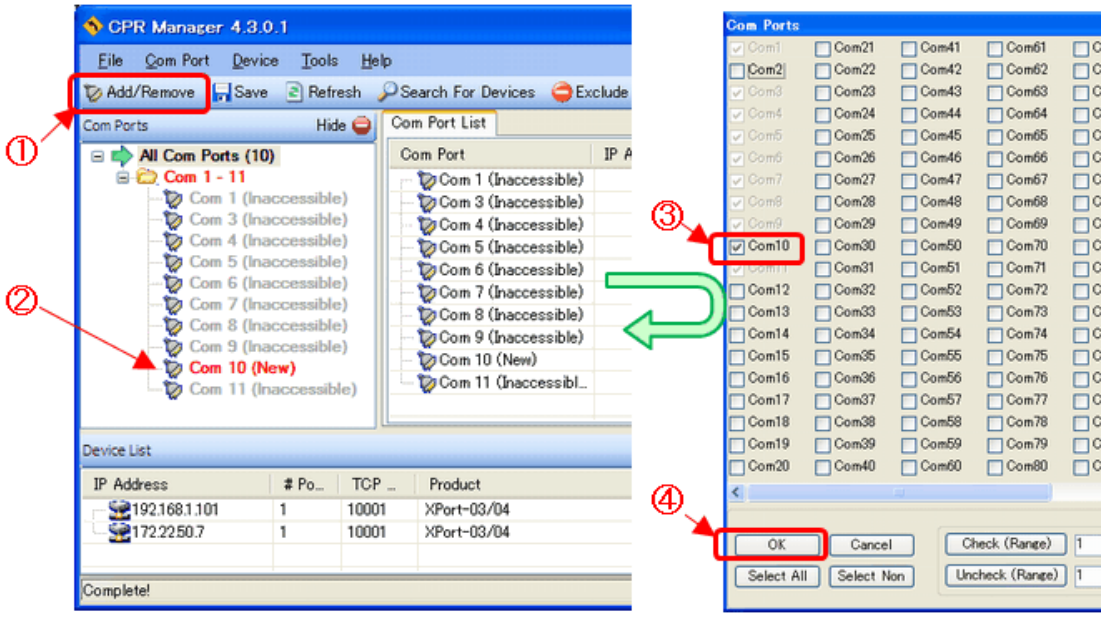

Fig. 4-3: Adding a virtual Com port

Click "Add/Remove" (①) shown in the figure above to display the window which lists the acquired Com ports for the XPort device.
The reserved virtual Com ports cannot be selected. Select one of the available Com port numbers.
The "Com Ports" window in the figure above lists the Com ports available for registration. In this example, select "Com 10" (③) and then click "OK" (④).
The virtual "Com (New)" (②) is allocated.

4-3 Allocating an XPort device to a virtual Com port added by CPR Manager

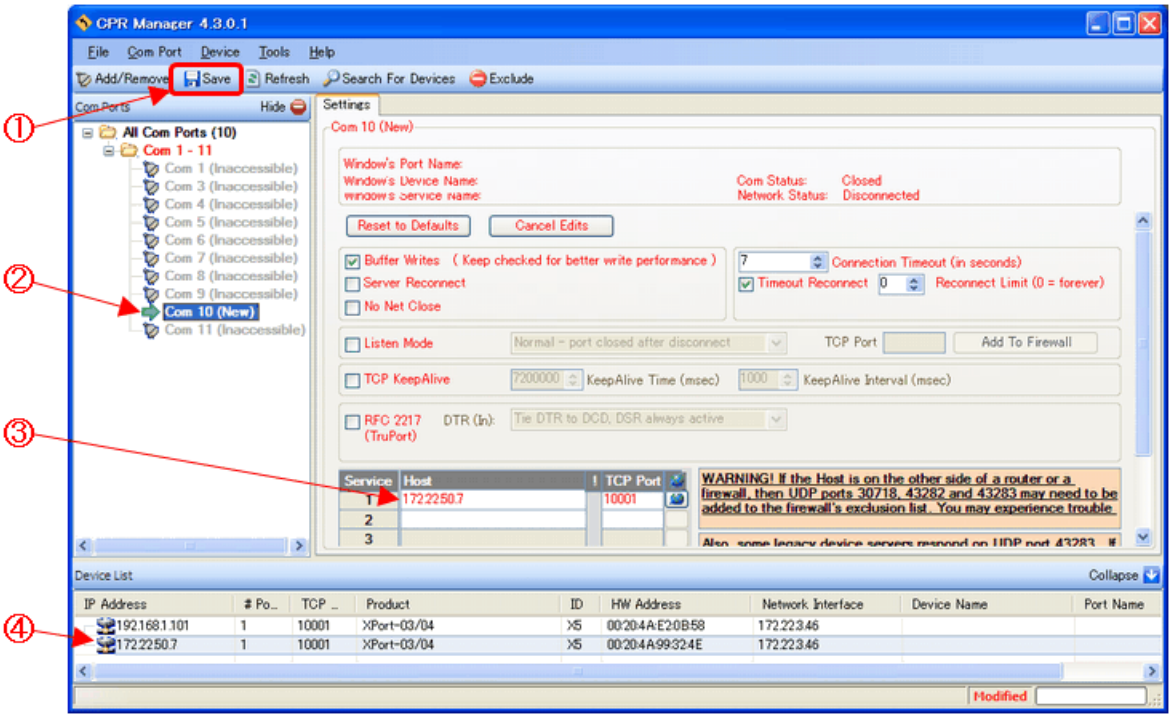

Fig. 4-4: Allocating a device to a virtual Com port

Click "Com 10 (New)" (②) in the figure above. The "Settings" window is displayed instead of the "Com Port List" window.
Register an IP address and socket number in the "Host" line (③), or double-click the XPort device shown in the "Device List" (④). When you double-click the XPort device, the corresponding address information is entered in the "Host" line (③).
Click "Save" (①) to fix the settings data.
The first time you attempt to allocate an XPort, a message dialog box which contains a warning about installing hardware is displayed. Ignore the message and click "Continue". The data displayed in red (unfixed data) will turn black and be fixed.

4-4 Checking the connection of the virtual Com port added by CPR Manager

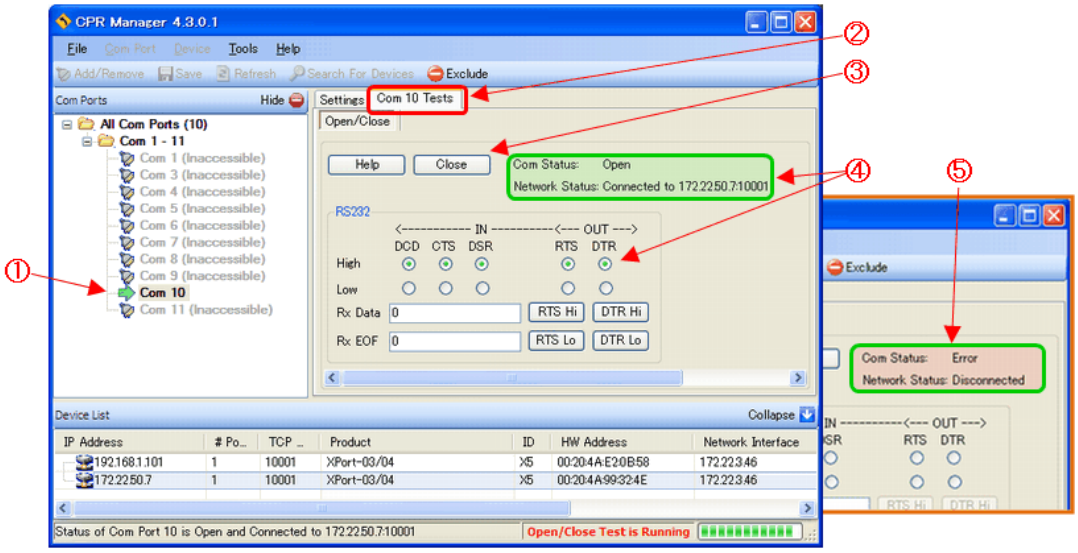

Fig. 4-5: Allocating to a virtual Com port

After you successfully save the virtual Com port, click "Com 10" ①. The "Settings" tab and the "Com 10 Tests" ② tab are displayed. Click "Com 10 Tests" to display the communication test tab.
Click "Open" (③) to check the operation.
If the connection has been successfully established, the connection information will be displayed and "Com Status" will be listed as "Open", as shown in (④).
If a connection is not successfully established, "Com Status" will be listed "Error", as shown in (⑤).

Note:
Check Device Manager to confirm that Com 10 is registered correctly, as shown below in Fig. 4-6.

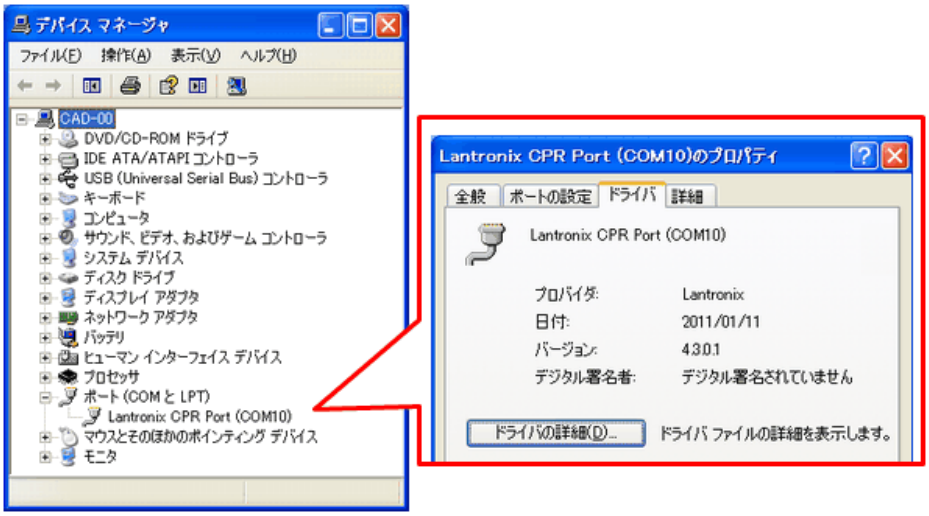

Fig. 4-6: Device Manager window

4-5 Using Device Manager to display unconnected devices (displaying connection history)

Only the devices connected to the system are displayed in Device Manager, which is used to delete devices or update device drivers.
The "Com Ports" window (shown in Fig. 4-3) is extremely useful when reusing virtual Com ports. However, when ports are no longer used, there are fewer selectable Com ports displayed.
To display devices registered in Device Manager but not connected to the system, perform the following procedure.

Note:
This is a hidden function of Windows. It is not a part of normal operations, so use it carefully.

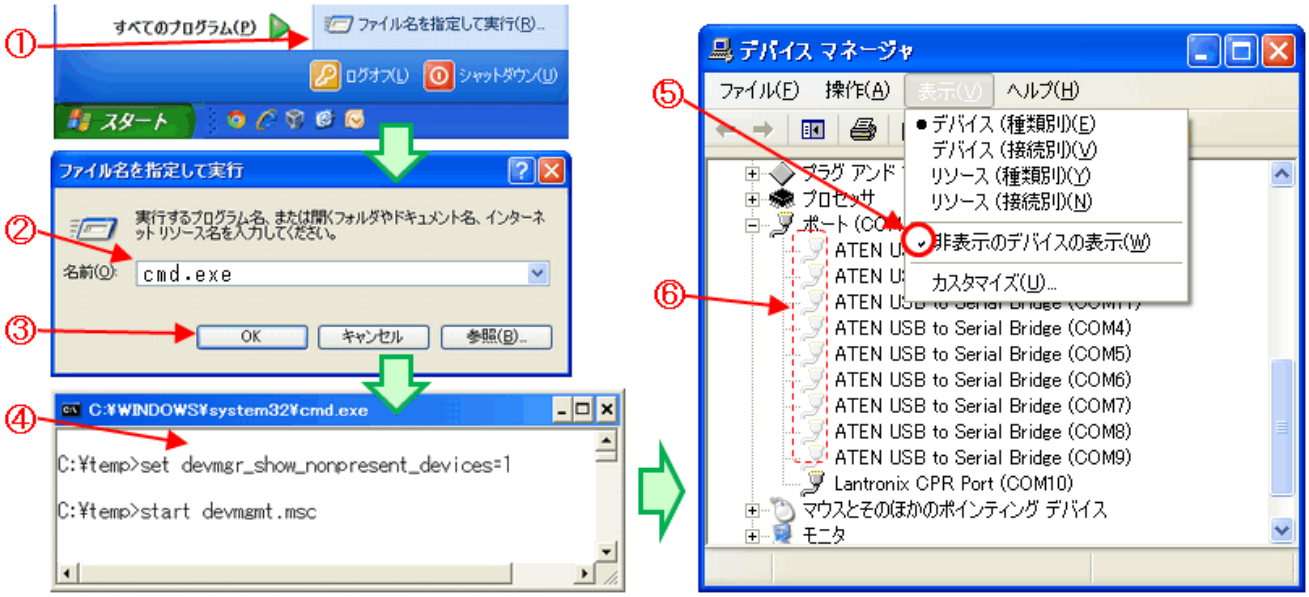

Fig. 4-7: Using Device Manager to display unconnected devices

You can start Device Manager by using the "NonPresentDevmgmt.bat" file included with the sample software, or by using the command prompt to delete unnecessary virtual Com ports.
The following explanation describes how to use the command prompt to start Device Manager and display unconnected devices.

Click the "Start" menu and select "Run…" (①).
Enter "cmd.exe" (②) and then click "OK" (③) to open the command prompt (④).
Enter the following commands in the command prompt, and then press the ENTER key.

```
set devmgr_show_nonpresent_devices=1
start devmgmt.msc
```

Click the "View" in the menu bar of Device Manager, and then select "Show hidden devices" (⑤).
Confirm the unconnected devices displayed in the list of ports (Com) (⑥), and delete any unnecessary devices.
This version of Device Manager displays all unconnected devices other than Com devices.
When you delete an unconnected device, the operation of the system might become unstable. Make sure to delete ONLY Com devices that are unnecessary.

Note:
When "NonPresentDevmgmt.bat" is used to start Device Manager, the command prompt closes automatically. When you perform the procedure described above and use the command prompt to manually start Device Manager, you must close the command prompt.

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