

COM Port Redirector

User Manual

Ver 2.1

December 19, 2008



Revision History

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10/17/2007	2.0	All	Written by skkim
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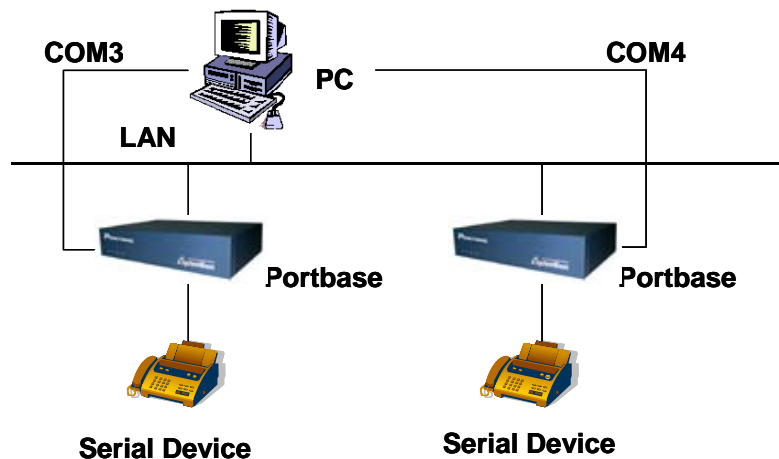
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Chapter 1. Overview

COM Port Redirector includes network COM port driver and redirector control, and they allow using serial ports in the device server in the same manner as local COM ports on the PC. Up to 255 COM ports can be added to one PC using the redirector. Remote serial ports in device servers connected via network can be utilized as COMx ports installed in the local PC.

The following diagram depicts how the PC with COM Port Redirector installed can communicate with the serial devices connected with network.



1.1 Software

- **COM Port Redirector driver:** System driver is compatible with Windows 2000/XP/2003/Vista/2008, creating virtual serial ports that are detected just like real COM ports. When the driver is installed, Redirectorctl.exe is executed to connect COM ports to network.
- **Redirector Control:** It is an application responsible for adding and removing virtual COM ports and providing user interface for port configuration and control. It operates with COM Port Redirector driver to establish connection under the TCP/IP network.

File name: Redirectorctl.exe

- **Installer:** This Windows application either installs or uninstalls COM Port Redirector.

File name: install.exe

1.2 Environment

More port installations require more CPU power and high memory usage.

- CPU : Pentium 1Ghz or better
- Memory : 512Mb or higher
- O/S : 2000/XP/2003/Vista/2008
- CD-ROM : 4X or faster
- Network : 10M Ethernet or faster

1.3 Hardware

Redirector is compatible with the following SystemBase products.

- Portbase 3010+/ 3020+/ 3040/ 3080/ 3160/ 3161
- Eddy Modules

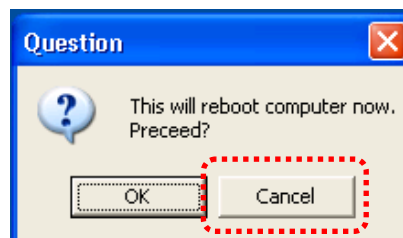
Chapter 2. COM Port Redirector Installation

This chapter provides COM Port Redirector install and uninstall details.

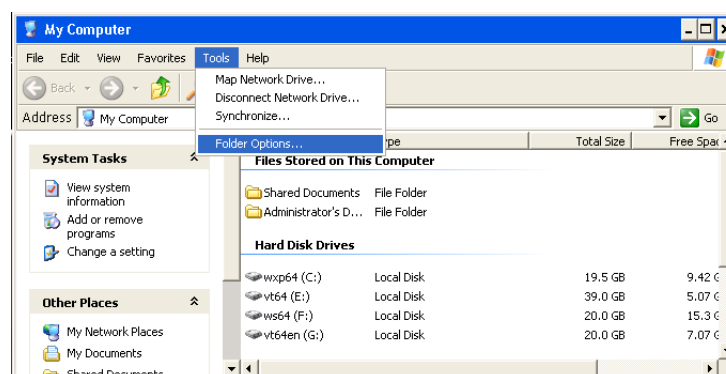
2.1 Uninstalling Old Version

Following displays uninstall process for Redirectors with versions below 2.0. If driver of these versions is not installed please ignore the following instructions

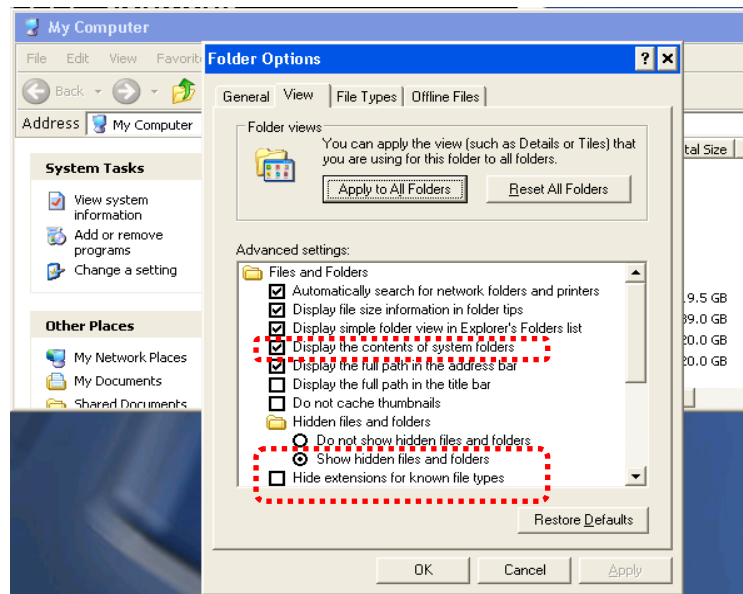
- Stop all virtual COM Ports created by Redirector.
- If Redirector control is executing, stop Redirector control also.
- Follow the uninstall instructions described on the manual.
- Once the uninstall is complete, pop up window will ask you to reboot the computer. Select 'Cancel'



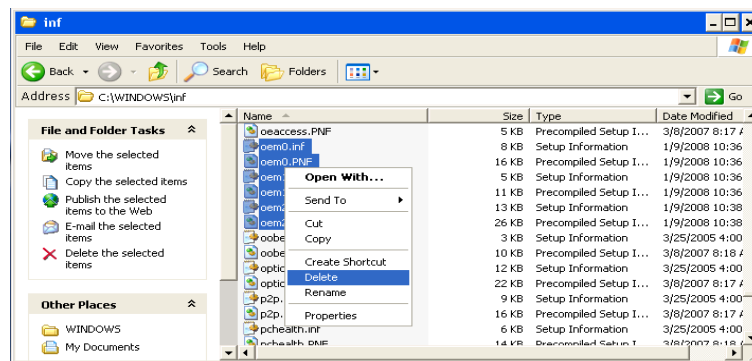
- From 'Folder Option', set the options so that hidden files and system files are shown. Select "folder Option" on "Tools" menu from "My Computer"



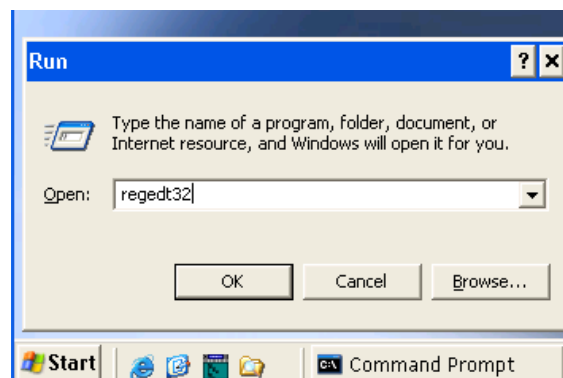
- Select as shown below from “Folder Options” and click OK



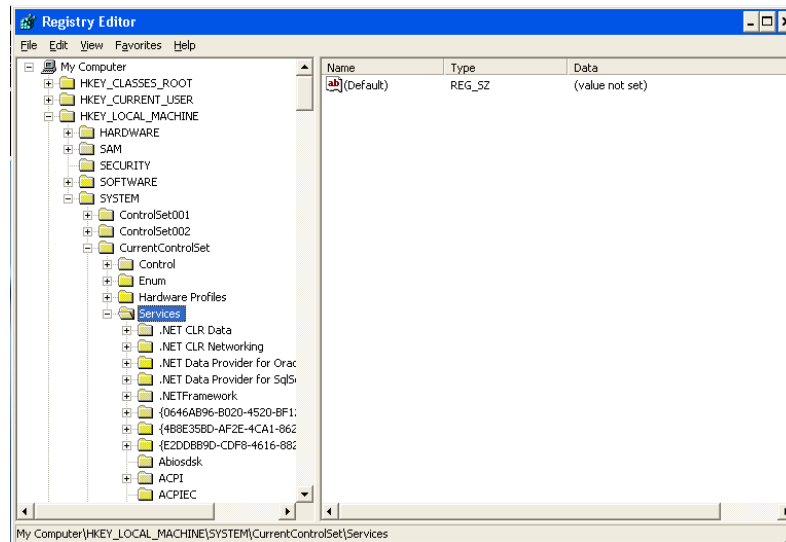
- Delete oem?.inf, oem?.PNF files under “C:\WINDOWS\inf” folder.



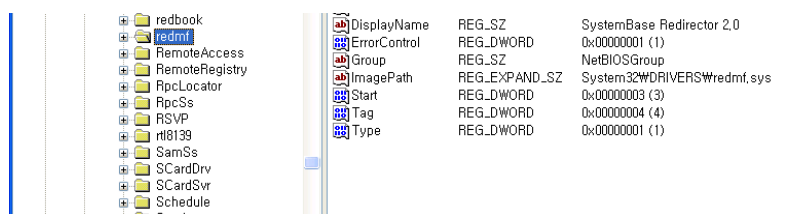
- Click “Start→Run...” and execute “regedt32”



- In “Registry Editor” find “HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services”.



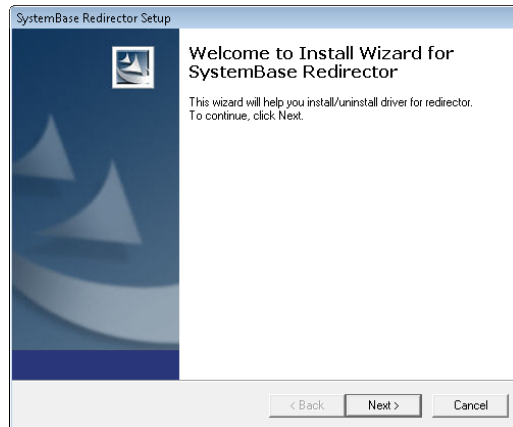
- Find “REDMF” folder and remove it



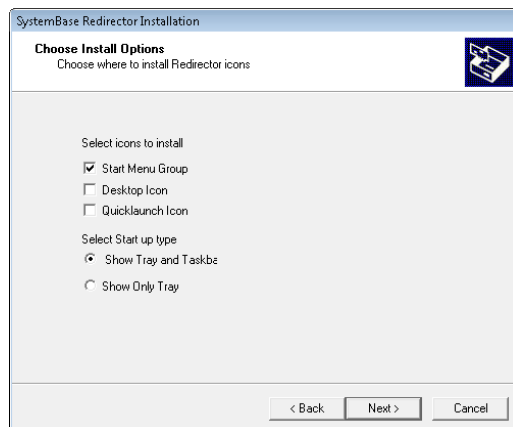
- Reboot the computer and complete uninstall process

2.2 Install Guide

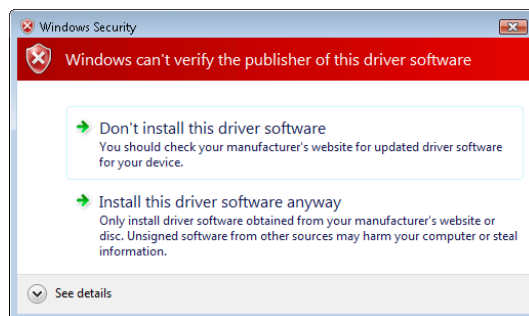
- Insert the Portbase install CD into the CD-ROM drive.
- Run install.exe. (If it does not start automatically)
- Select English from the language menu, and select “Install Redirector” from the install screen.
- Redirector installer starts and provides installation details. Click “Next” to continue.



- Select Install Options. You can select the icons to be displayed and where the program will be shown on startup. Click “Next”.

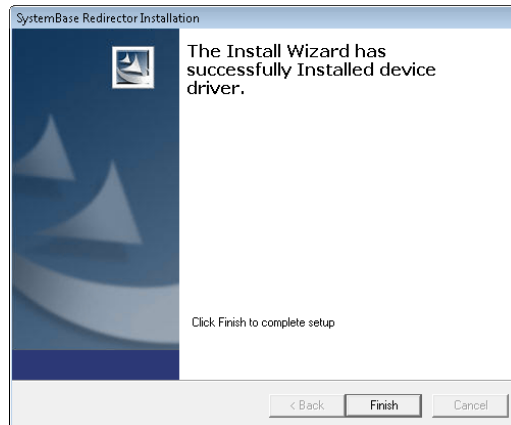


- In case the following warning window appears (or other type of warning), click “Install this driver software anyway”.

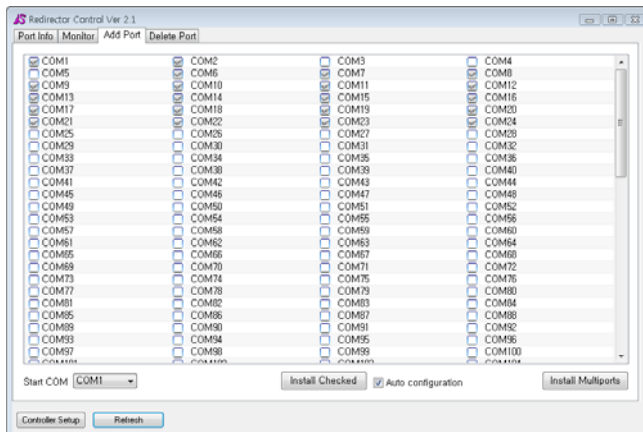


- Installer installs the driver and copies program files.

- Click “Finish” to complete the setup.



- Redirector Control starts automatically after the setup is complete, and by default it automatically starts when Windows starts.



(Note)

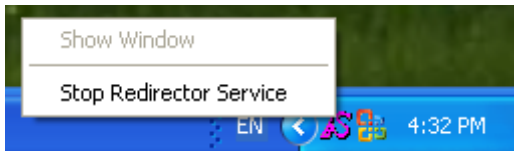
Since RedirectorCtl.exe is responsible for basic functions of COM Port Redirector, it should be running before starting any applications using virtual COM ports.

- With the Redirector Control, you can add or remove ports, view or modify port information, and monitor ports in real-time.

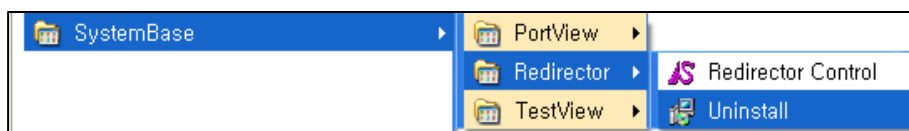
2.3 Uninstall Guide

When you uninstall COM Port Redirector, all virtual COM ports are removed as well.

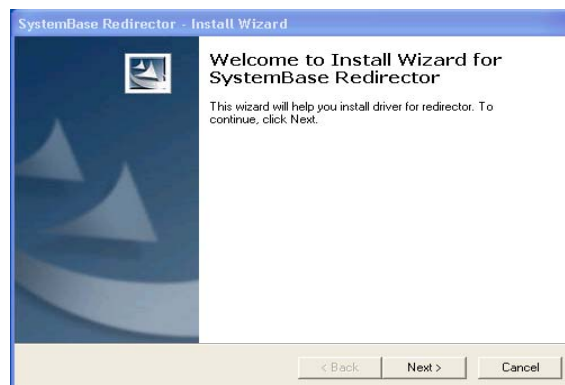
- Stop using all virtual COM ports created by the Redirector.
- When Redirector Control is running, stop it first.



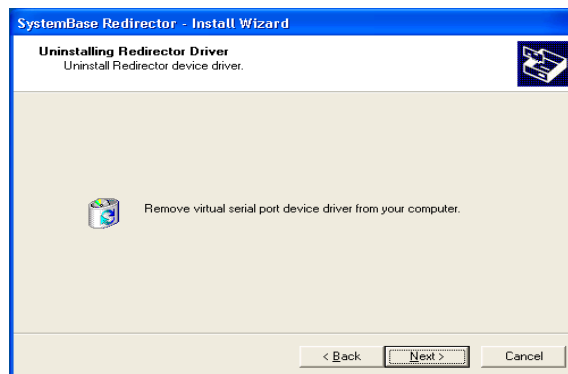
- Select Stop Redirector Service from the tray icon.
- Run Install.exe from the Redirector install CD or the directory Redirector is installed to. Also, you can simply select "Start → All Programs → SystemBase → Redirector → Uninstall" as shown below.



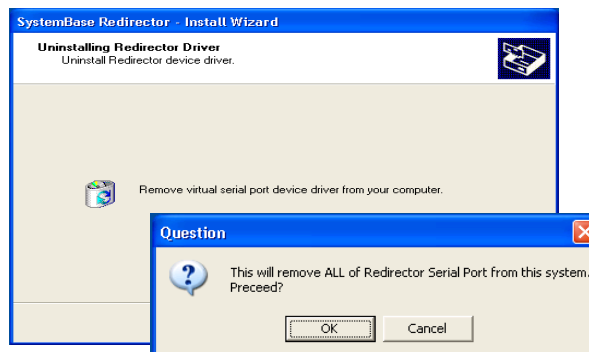
- Click "Next".



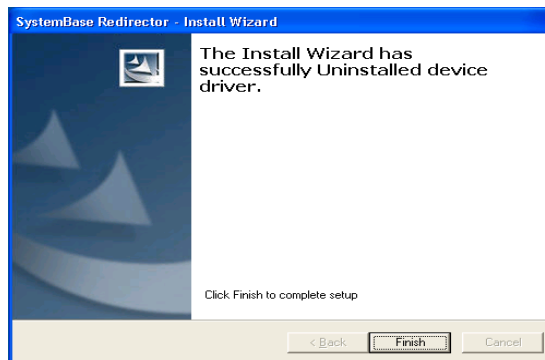
- Click "Next".



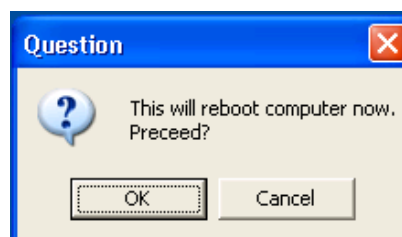
- Click "OK"



- Click "Yes" to finish installer.



- Click "OK" to reboot the computer and complete uninstall process.



Chapter 3. Redirector Configuration

3.1 Overview

Redirector Control is a core application implementing virtual COM port functions along with COM Port Redirector driver. It provides interface for adding/removing/configuring/controlling virtual COM ports. It also allows data communication with Portbase or Eddy using TCP/IP network.

3.2 Starting and Stopping the Control

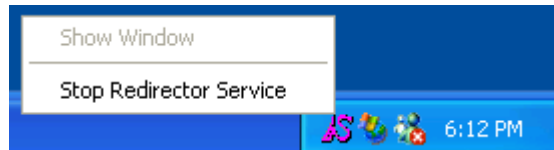
When you install COM Port Redirector, Redirector Control is added to the “Start Program”, running every time Windows starts.

- When Redirector Control is running, you can see the tray icon as shown below.



- When you close the Redirector Control window with the close(X) button, it disappears from the task bar but runs from the system tray icon.

- When you right-click the tray icon, the following menu pops up.
 - ◆ Show Window: Re-activate Redirector Control window closed by the button.



- ◆ Stop Redirector Service: This option quits Redirector Control, and virtual COM ports cannot be used if selected.

Note:

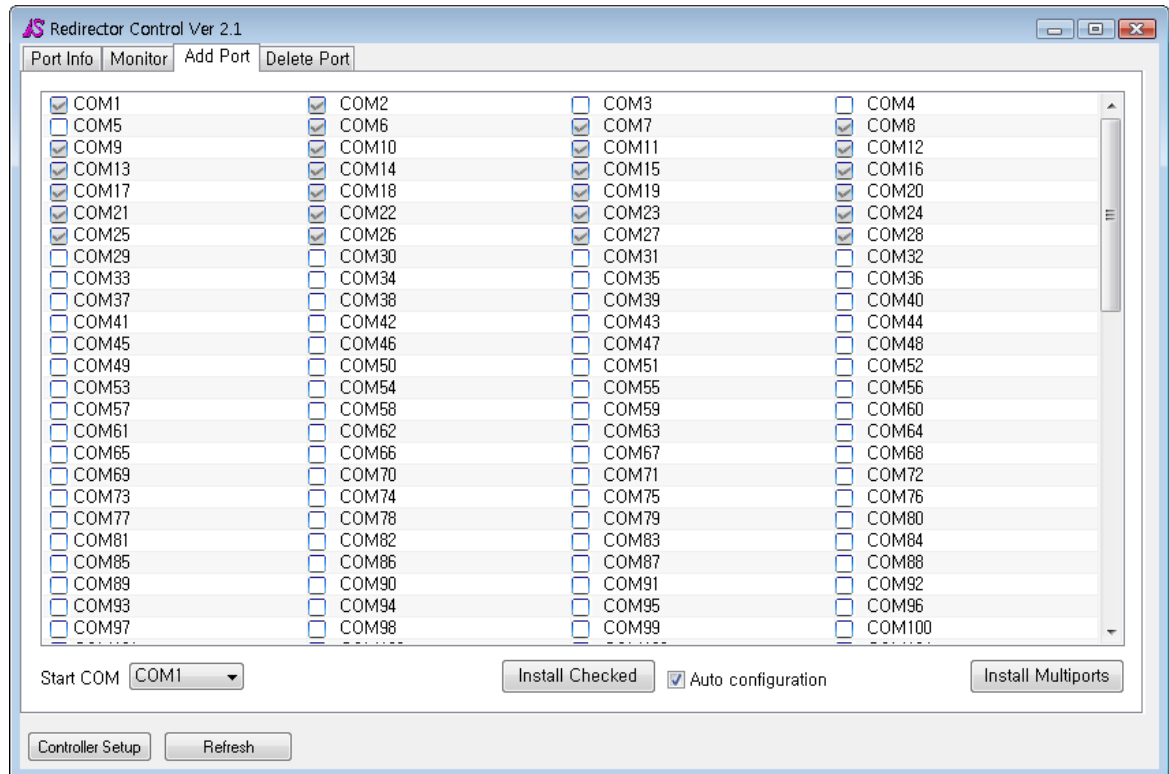
If some applications are using COM ports created by Redirector, Redirector Control cannot be stopped. You have to quit all applications using virtual COM ports and select “ Stop Redirector Service” from the tray icon menu in order to stop Redirector Control.

Warning:

When Redirector Control is not running, please be forewarned that no virtual COM ports can be used. When you want to use these ports, select “ Start → All Programs → SystemBase → Redirector → Redirector Control” .

3.3 Screen Layout

COM Port Redirector screen is composed of Port Info, Monitor, Add Port, and Delete Port tabs.



- Port Info : View or modify port information.
- Monitor : Monitor real-time port status.
- Add Port : Add new virtual COM ports.
- Delete Port : Delete virtual COM ports.
- Controller Setup: Open Setup Window.
- Refresh: Refresh window

Chapter 4. Adding / Removing Ports

4.1 Overview

You can install, add, or remove up to 256 virtual COM ports. The process of adding ports is identical to installing ports.

Redirector Control provides two ways of adding/removing virtual COM ports.

- Install/Uninstall Checked: Add/remove ports with Check Box interface.
- Install/Uninstall Multiports: Add/remove ports with starting COM port number and the number of virtual ports to create. Ports will be assigned consecutive numbers following the starting number.

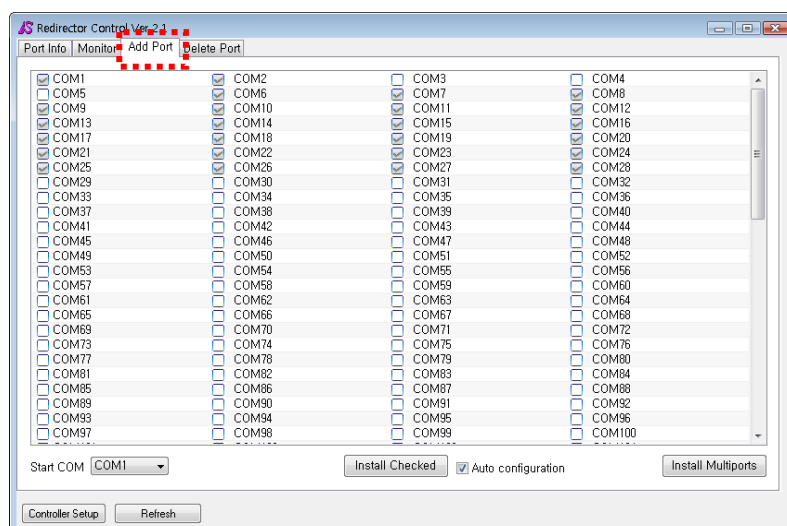
4.2 Adding Virtual COM ports

Adding virtual COM ports is performed by Redirector Control.

(Note)

When the Redirector is installed in Windows 2000, you should not add ports when any application is using virtual ports. Unexpected errors can be reported.

Using “Add Port” tab

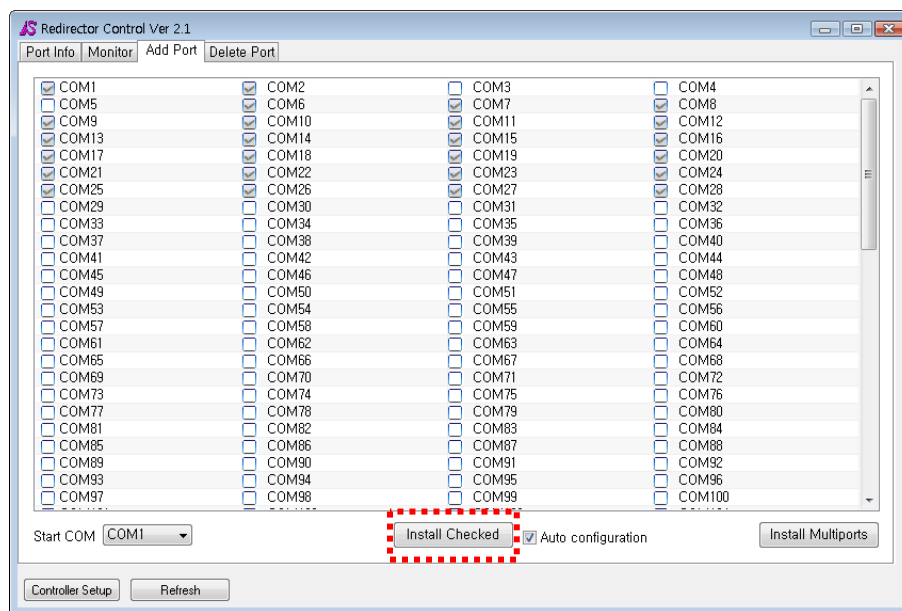


Add Port Buttons

- **Start COM:**
 - ◆ This option defines the first port to be displayed on the panel.
 - ◆ 256 ports starting from the 'Start COM' are displayed.
 - ◆ You can change this port any time.
- **Install Checked:** Install all ports checked from the panel.
- **Auto Configuration:** When checked, all ports are automatically assigned the IP address and port number of the device server. When not checked, you can manually configure ports from the "Port Info" tab.
- **Install Multiports:** When there are a number of ports to install, manually checking them is a tedious job. If this is the case, click "Install Multiports" to assign only the Start COM number and the number of ports to install.
- **Refresh:** Update all checkboxes and COM port number information on the panel.
 - ◆ All deactivated checkboxes indicate COM ports that are currently occupied by external applications other than Redirector.

Installed Checked (Using checkbox interface)

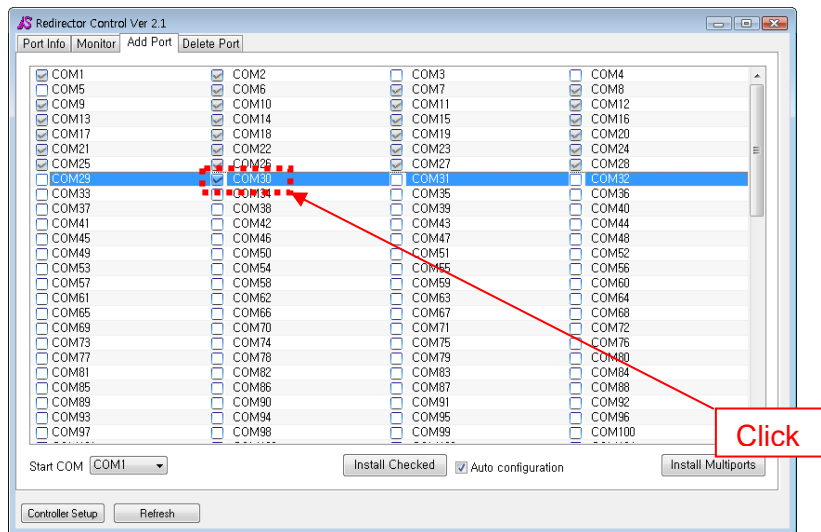
This option provides intuitive interface.



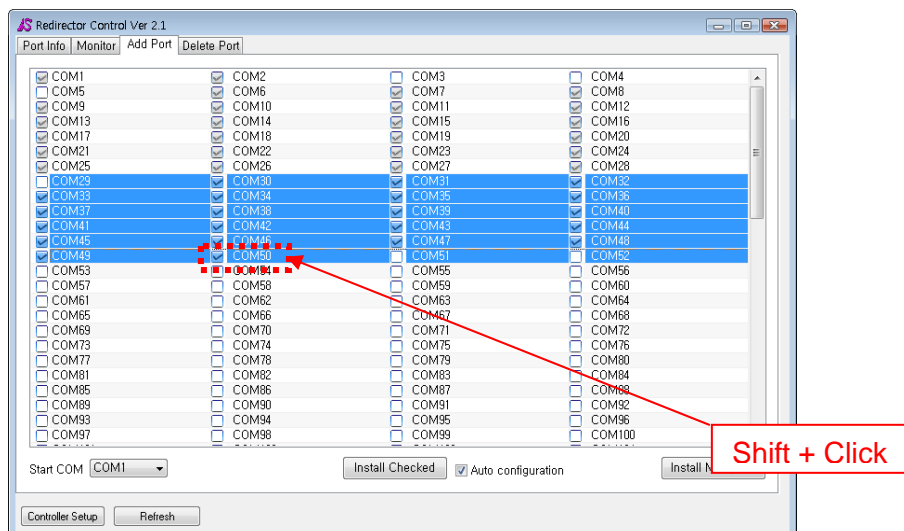
- Maximum 256 COM ports are displayed, starting from the "Start COM" port. When there are ports used by other serial applications or already installed by Redirector, checkbox is deactivated. These ports cannot be checked or unchecked.
- You can adjust "Start COM" number to display COM ports with the number higher than default 256.
- When you select "Install Checked", all checked ports are installed.
- If "Auto configuration" is checked when "Install Checked" runs, automatic configuration

applies to all ports to be installed.

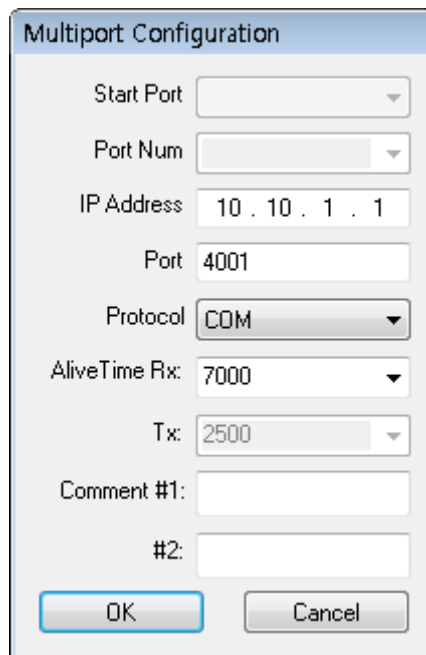
- To check multiple ports, this is how you do it. For instance if you want to install ports 30 – 50. First check COM30.



- Next, click shift and check COM50. COM30 – COM50 will all be checked.



- Configuration Window



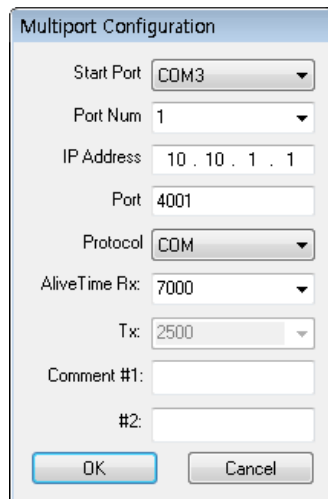
The image shows a 'Multiport Configuration' dialog box. It contains the following fields and controls:

- Start Port:** A dropdown menu.
- Port Num:** A dropdown menu.
- IP Address:** A text field containing '10 . 10 . 1 . 1'.
- Port:** A text field containing '4001'.
- Protocol:** A dropdown menu with 'COM' selected.
- AliveTime Rx:** A dropdown menu with '7000' selected.
- Tx:** A dropdown menu with '2500' selected.
- Comment #1:** An empty text field.
- #2:** An empty text field.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

- IP Address : The IP address of Portbase. All new ports are assigned the value this option.
- Port : The port number of Portbase. Port numbers increase by 1.
- Protocol : Communication method used in communicating with Portbase. All new ports are assigned the value in this option.
 - ◆ COM : Normal COM port operation (Selected by default)
 - ◆ Encryption : Select this option when you want data encrypted.
(SEED encryption method, a symmetric key type 128-bit block encryption algorithm, is used.)
 - ◆ Raw : Only data is transmitted in ordinary COM modes.
- AliveTime Rx: AliveTime Rx value. Applied to all new ports.
- AliveTime Tx: AliveTime Tx value. Applied to all new ports.
- Comment: Put comment for port.

Install Multiports

This option is useful when there are many ports to install.



The image shows a 'Multiport Configuration' dialog box. It contains the following fields and controls:

- Start Port:** A dropdown menu currently showing 'COM3'.
- Port Num:** A dropdown menu currently showing '1'.
- IP Address:** A text field containing '10 . 10 . 1 . 1'.
- Port:** A text field containing '4001'.
- Protocol:** A dropdown menu currently showing 'COM'.
- AliveTime Rx:** A dropdown menu currently showing '7000'.
- Tx:** A dropdown menu currently showing '2500'.
- Comment #1:** An empty text field.
- #2:** An empty text field.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

- When you select “Install Multiports”, COM ports as many as “Port num” are created, starting with the number assigned in “Start port”. IP address, port, and protocol settings are the same as checkbox method.
- COM port numbers are displayed on the drop-down menu in “Start Port” field. You can assign number of port installations desired in “Port Num” field.
- COM port numbers increase by 1, and if any number is not usable, the number next is assigned.

Example) Start Port = COM5, Port Num = 4

When COM6 and COM8 are already in use,

→ COM5, COM7, COM9, and COM10 are created.

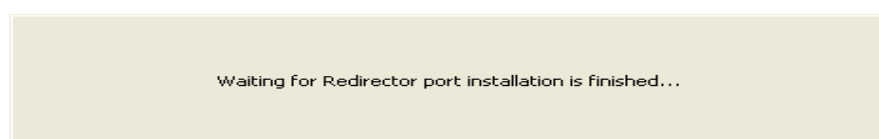
- IP Address: IP Address of the device server
- Port: Port number of the device server
- Protocol: Protocol used in communication
 - ◆ COM : Normal COM port operation (Selected by default)
 - ◆ Encryption : Select this option when you want data encrypted.

(SEED encryption method, a symmetric key type 128-bit block encryption algorithm, is used.)

- ◆ Raw : Only data is transmitted in ordinary COM modes.
- AliveTime Rx: AliveTime Rx value. Applied to all new ports.
- AliveTime Tx: AliveTime Tx value. Applied to all new ports.
- Comment: Put comment for port.

Device Driver Installation

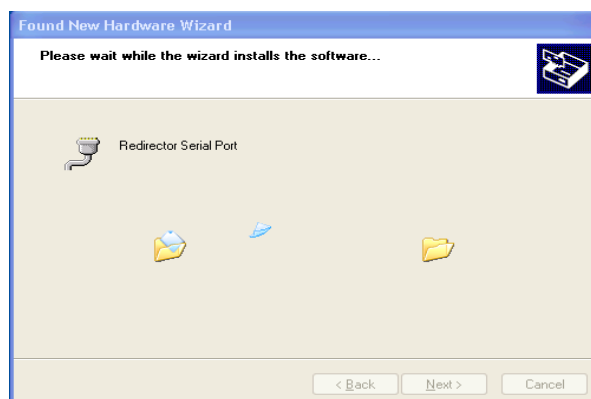
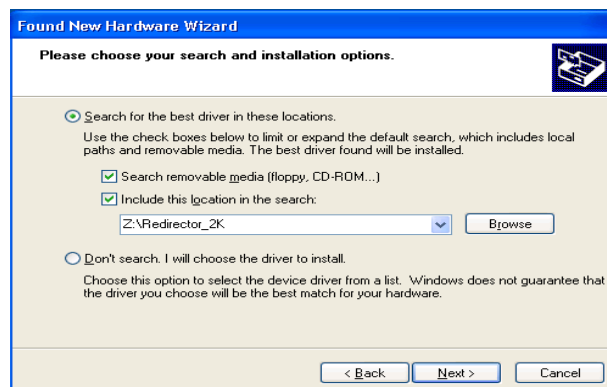
- When installation starts by selecting either “Install Checked” or “Install Multiport”, the following message is displayed until installation is complete.



- When “Found New Hardware Wizard” is open, follow the process described here.
- Select “No, not this time” and click “Next”.



- Select “Install from a list or specific location (Advanced)”. “Install the software automatically (Recommended)” option might take really long in some systems.
- When you select “Install from a list or specific location (Advanced)”, you need to specify the driver location.
- If you have Portbase install CD, enter the CD drive location or COM Port Redirector install directory.



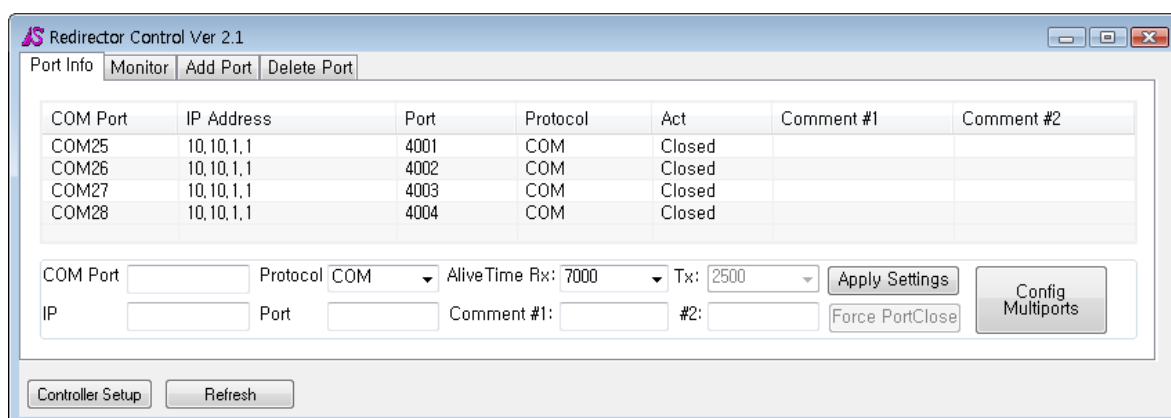
- Click “Continue Anyway”



- When installation is complete, click “Finish” to close the wizard.



- Now repeat this process for each port installed.
- You can see all installed ports in the “Port Info” tab.



4.3 Removing Virtual Ports

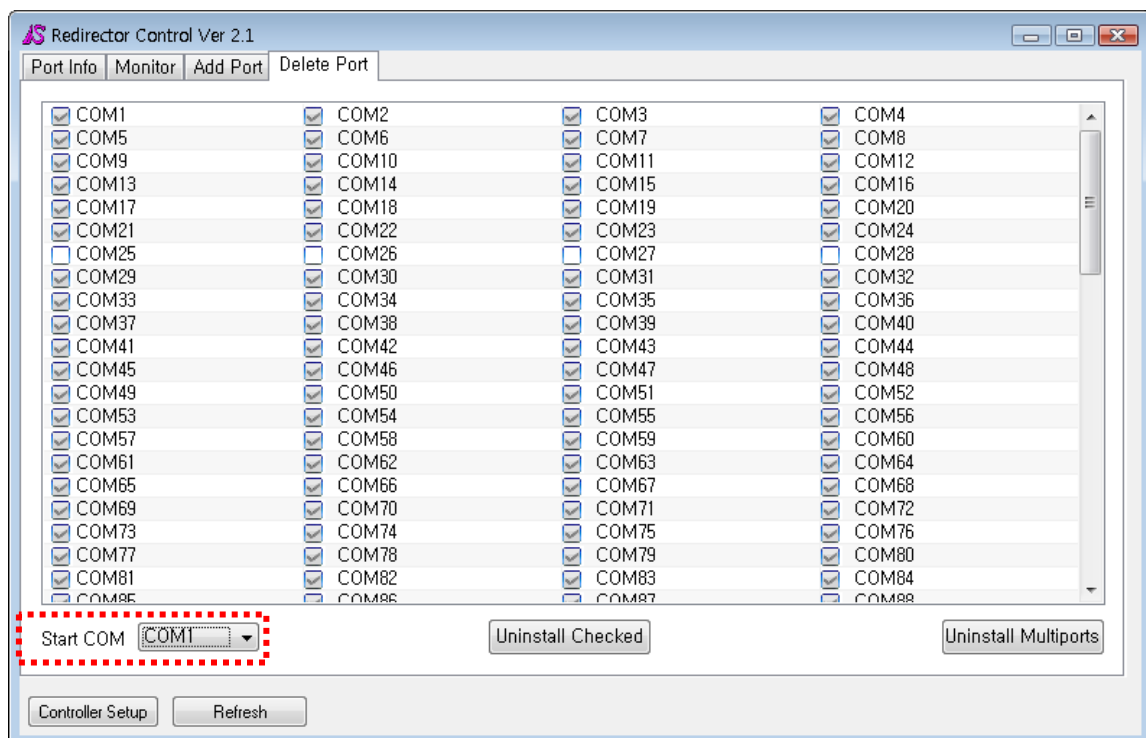
(Note)

When the Redirector is installed in Windows 2000, you should not remove ports when any application is using virtual ports. Unexpected errors can be reported.

- ◆ You can remove ports from the “Delete Port” tab in COM Port Redirector.

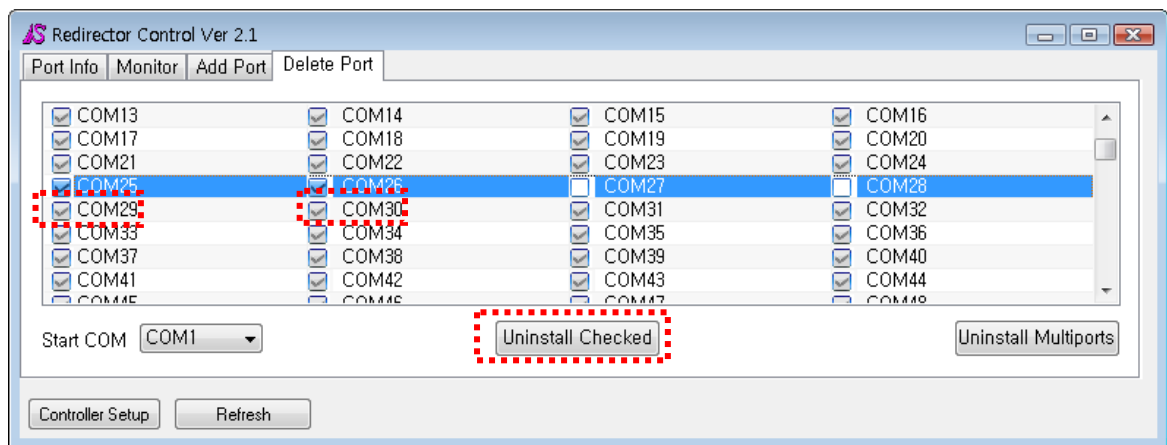
Using “Start COM”

- Up to 256 COM ports are displayed starting from the port number stated in “Start COM”.
- All COM ports not currently in use are checked in blur.
- All installed Redirector COM ports are open for check.
- You can adjust “Start COM” number to display COM ports with the number higher than default 256.



Uninstall Checked

- Check ports to delete.

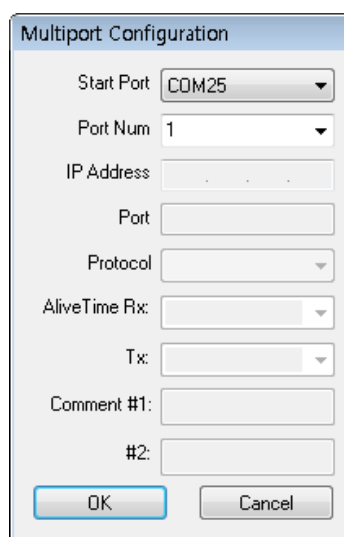


- When you select “Uninstall Checked”, ports are removed. Ports currently in use, however, are not removed.

Uninstall Multiports

When you want to remove many ports at once, checking all ports are burdensome.

- Select “Uninstall Multiports” to remove multiple ports at once.

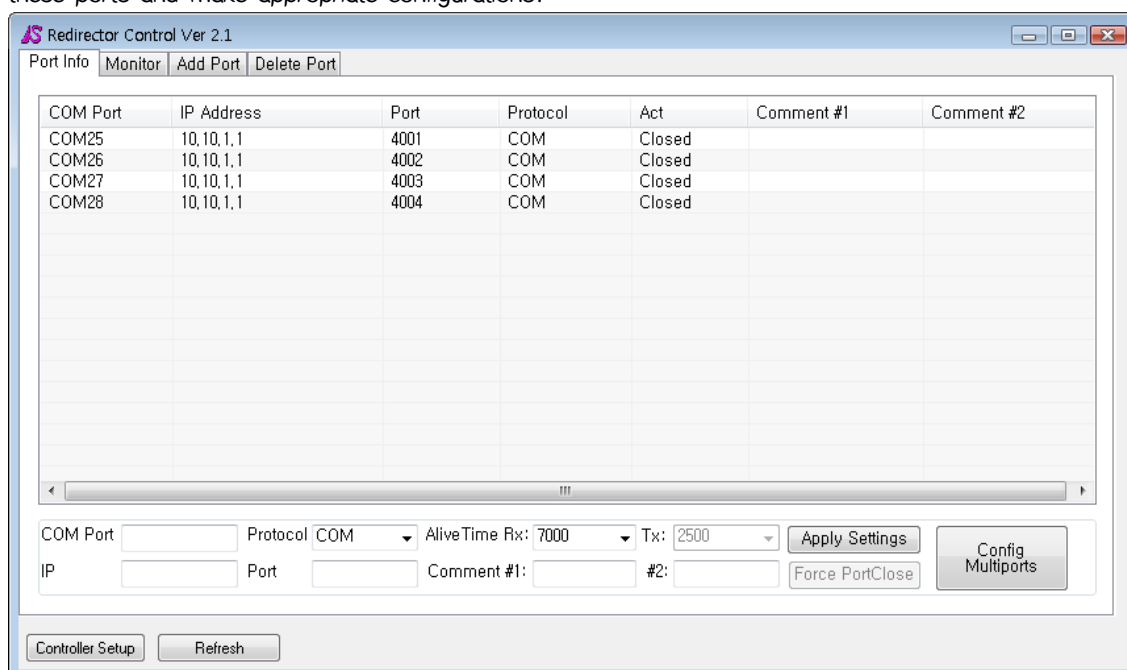


- “Multiport Configuration” opens.
 - ◆ Set “Start Port”.
 - ◆ Set “Port Num”.
- When you click “OK”, ports stated in “Port Num” are removed starting from the “Start Port”.
- Only Redirector COM ports are removed; ports currently in use are not removed.

Chapter 5. Using Redirector Control

5.1 Overview

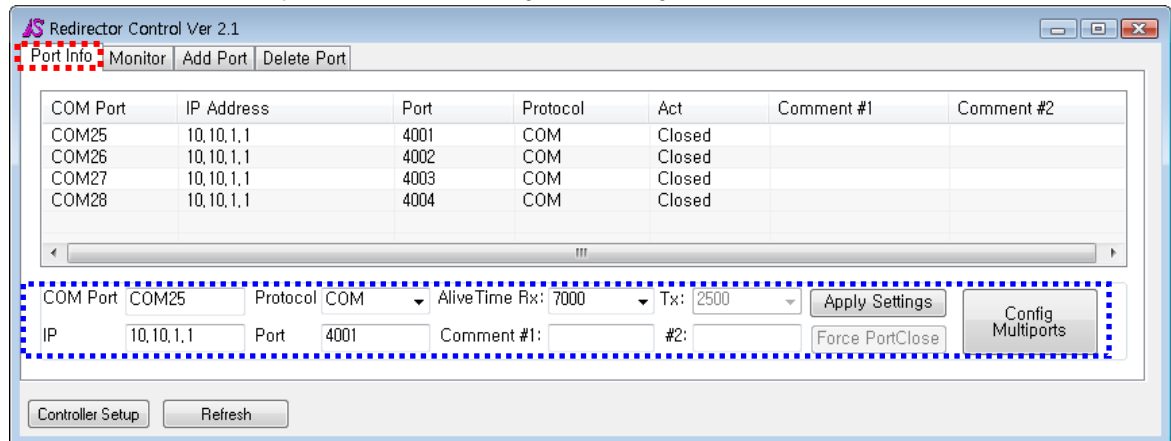
After COM Port Redirector driver is installed from the Redirector Control, you need to make use of these ports and make appropriate configurations.



5.2 View or Modify Port Info

You can view or modify COM port configurations in the “Port Info” tab.

All COM ports are displayed in the panel, along with settings and status.



Port Info Functions

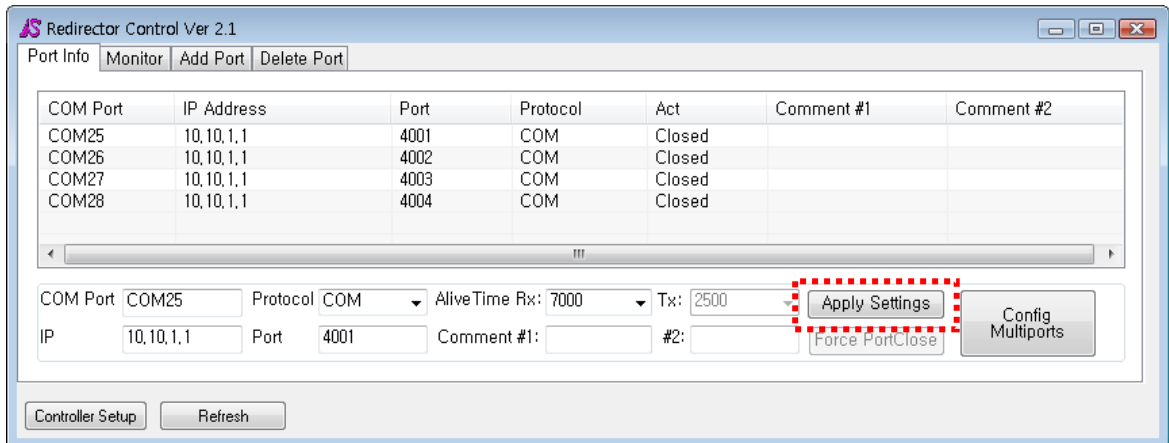
- COM port : Virtual COM port name
 - IP Address : IP address of Portbase or Eddy that virtual COM ports will connect to
 - Port : Port number of Portbase or Eddy that virtual COM ports will connect to
 - Protocol : Communication method between COM ports and Portbase or Eddy
 - ◆ COM : Normal COM port operation (Selected by default)
 - ◆ Encryption : Select this option when you want data encrypted.

(SEED encryption method, a symmetric key type 128-bit block encryption algorithm, is used.)

 - ◆ Raw : Only data is transmitted in ordinary COM modes.
- AliveTime Rx: AliveTime Rx value of the virtual COM Port.
 - AliveTime Tx: AliveTime Tx value of the virtual COM Port.
 - Comment: Comment on the COM Port.
 - Act: COM port status. (Closed/Open)
 - Apply Settings: Apply changed settings.
 - Forced Port Close: When open ports are not closed normally, force port close on them.
 - Config Multiports: Use this option to apply changes to multiple ports at once.

Single Port Configuration Changes

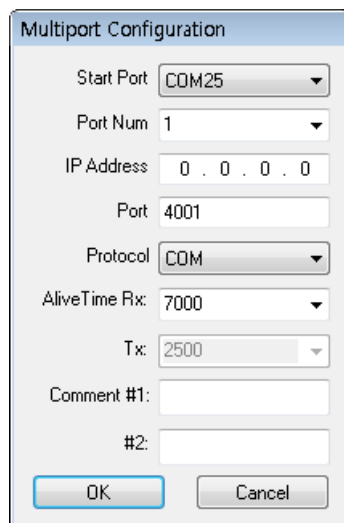
- When you want to change port settings, click COM port that you wish to change, and make changes to IP address, port number, or protocol. Click “Apply Settings” to apply these changes.



- ◆ When applications are using certain ports, new settings will be applied the next time this COM port is open.

Multiple Port Changes (Config Multiports)

- “Config Multiports” option allows changing IP address, port number, and protocol settings of multiple ports at once.



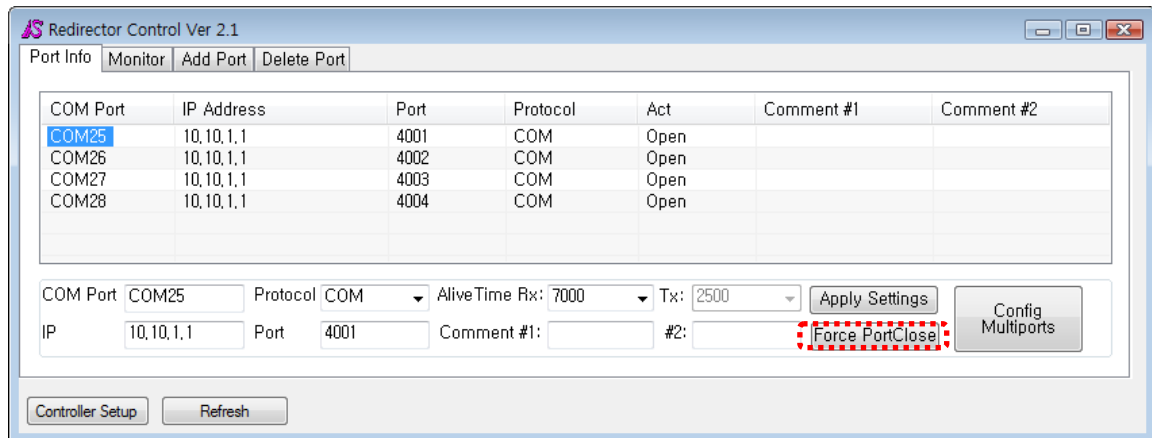
- **Multiport Configuration**

- ◆ Start Port: The starting port number that you wish to change configurations
- ◆ Port Num: The number of ports that you wish to change configurations
- ◆ IP Address: IP Address of the device server
- ◆ Port: Port number device server assigns to virtual COM ports
- ◆ Protocol: Communication protocol used (COM/Encryption/Raw)
- ◆ AliveTime Rx: AliveTime Rx value to change to.
- ◆ AliveTime Tx: AliveTime Tx value to change to.
- ◆ Comment: Comment to put on the port.

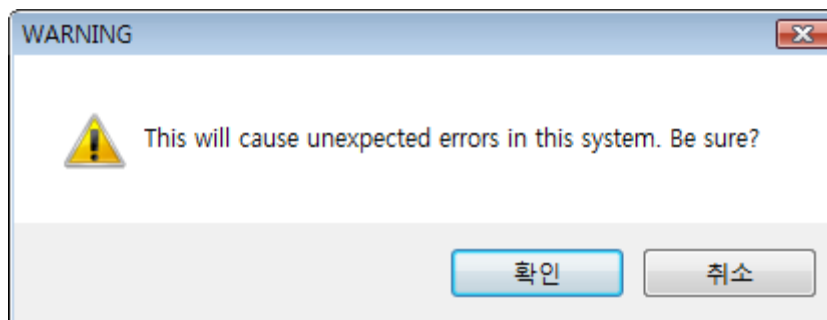
Force Port Close

“Force Port Close” closes any COM port that fails to close in normal operation.

- When you click open COM ports, “Force Port Close” button is activated.
- Click “Force Port Close”.



- Click “OK”.

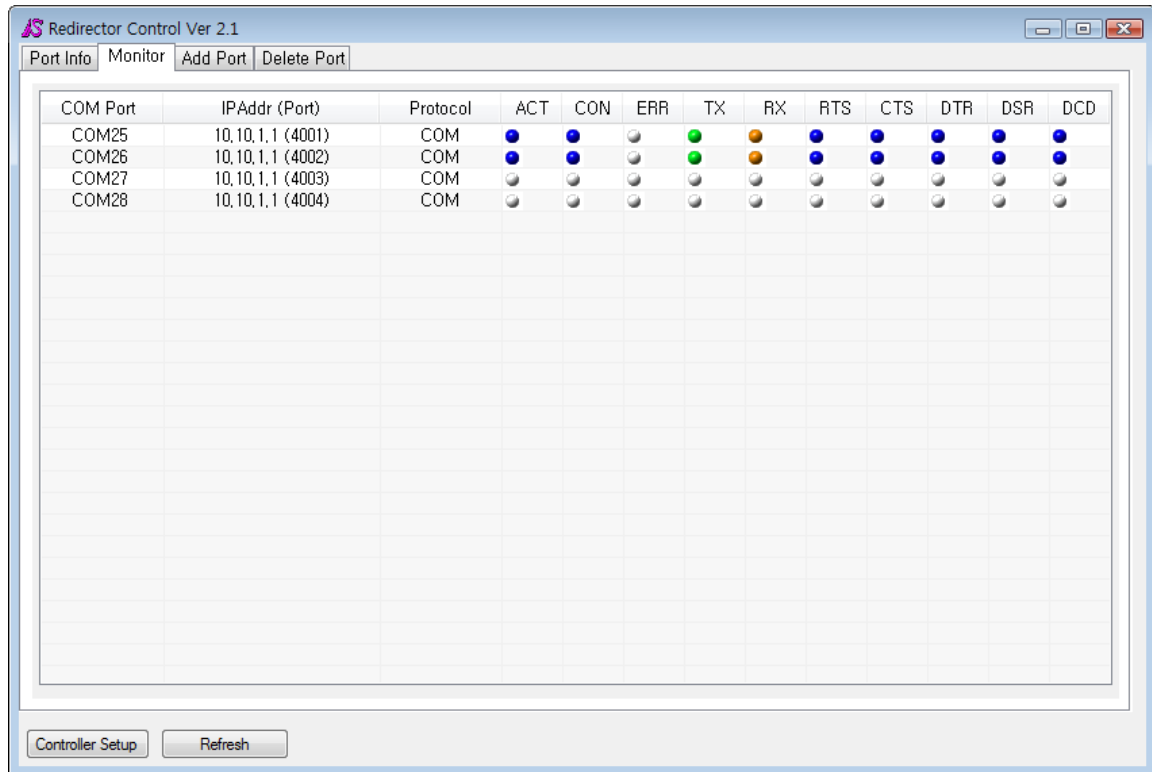


Warning:

If you perform “ Force Port Close” on ports that are operating normally, system might hang or unexpected errors are prone to occur. Use this option at your own risk, only in emergency when applications fail to close ports.

5.3 Port Status Monitor

Select “Monitor” tab to monitor port status in real-time.



- Following columns are displayed.
 - ◆ ACT : Blue when application is using this COM port.
 - ◆ CON : Blue when this port is connected to Portbase.
 - ◆ ERR : Red when connection with Portbase has errors.
 - ◆ TX : Green when transmitting data
 - ◆ RX : Yellow when receiving data
 - ◆ RTS, ..., DCD : Modem signals for each port. Blue when on.

- “Refresh” button

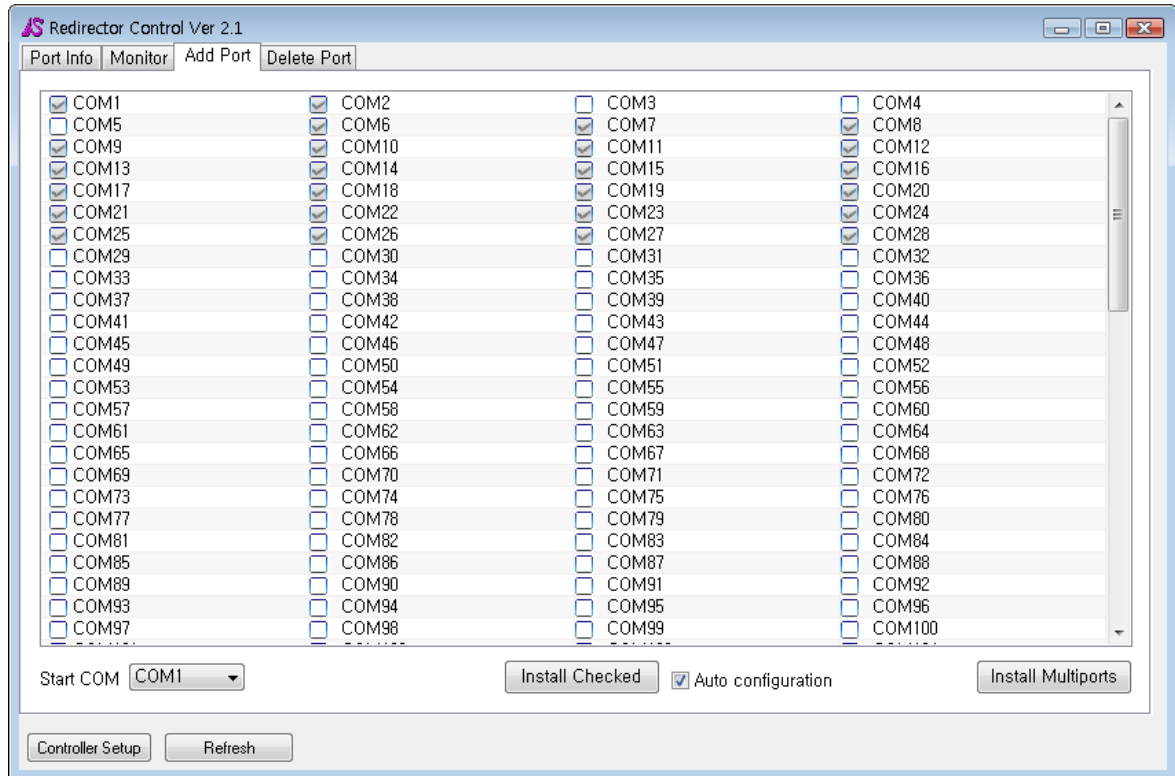
When you changed COM port numbers or installed serial ports manually from external applications, click “Refresh” or reactivate tabs to update changes.

Remember to use this button when changes are made in “Device Manager” .

5.4 Add Port

“Add Port” tab performs adding new COM ports.

All COM ports currently available for installation is open for check, so that you can easily select desired COM port number and install ports.



- By default, COM1 to 256 are displayed. If you want to see other COM ports, change “Start COM” value to display other ports out of the default range.

Install Checked

- Use this option when you want to manually assign COM port numbers.
 - ◆ Click “Install Checked” after checking desired COM ports.
 - ◆ If “Auto Configuration” is checked, you can make changes to multiple ports at once.
 - ◆ When “Auto Configuration” is not checked, default values are used. You can make changes in port configuration from the “Port Info” tab.

Install Multiport Button

Use this option when you want to assign port numbers consecutively.

- COM port numbers are displayed on the drop-down menu in “Start Port” field. You can assign number of port installations desired in “Port Num” field.
- COM port numbers increase by 1, and if any number is not usable, the number next is assigned.

Example) Start Port = COM5, Port Num = 4

When COM6, COM8 are already in use,

→ COM5, COM7, COM9, COM10 are created.

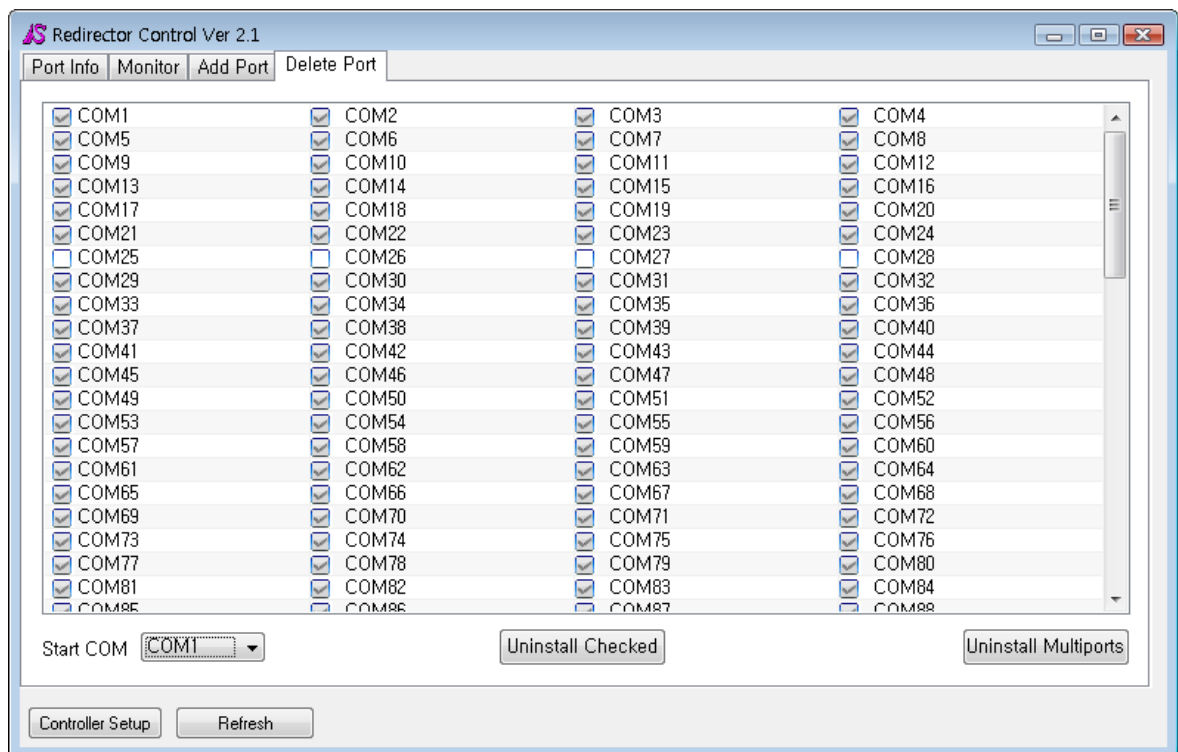
- IP Address: IP Address of the device server
- Port: Port number of the device server
- Protocol: Protocol used in communication
 - ◆ COM : Normal COM port operation (Selected by default)
 - ◆ Encryption : Select this option when you want data encrypted.
(SEED encryption method, a symmetric key type 128-bit block encryption algorithm, is used.)
 - ◆ Raw : Only data is transmitted in ordinary COM modes.
- AliveTime Rx: AliveTime Rx value
- AliveTime Tx: AliveTime Tx value
- Comment: Comment to put
- For more information on installing ports, please refer to [“4.2. Adding Virtual Ports”](#).

5.5 Delete Port

“Delete Port” tab perform COM port removal.

Only virtual COM ports are open for check.

By default, this tab displays from COM1 to 256. When you want to select ports out of this range, change “Start COM” value to cover appropriate range.



- Check all ports that you want to remove, and click “Uninstall Checked”. If you want to remove multiple ports at once, select “Uninstall Multiports”.

- COM port numbers are displayed on the drop-down menu in “Start Port” field. You can assign number of port installations desired in “Port Num” field.
- COM port numbers increase by 1, and if any number is not usable, the number next is assigned.

Example) Start Port = COM5, Port Num = 4

When COM6, COM8 are already in use,

→ COM5, COM7, COM9, COM10 are created.

- IP Address: IP Address of the device server
- Port: Port number of the device server
- Protocol: Protocol used in communication
 - ◆ COM : Normal COM port operation (Selected by default)
 - ◆ Encryption : Select this option when you want data encrypted.

(SEED encryption method, a symmetric key type 128-bit block encryption algorithm, is used.)

- ◆ Raw : Only data is transmitted in ordinary COM modes.

- COM port number of virtual ports is displayed in “Start Port”. Ports entered in “Port Num” are removed, starting from “Start Port”.

- ◆ If there are COM ports other than redirector COM ports, these ports are skipped in the removal process.

Example) Start Port = COM5, Port Num = 4

If installed virtual ports are COM5, COM7, COM9, COM10, and COM11,

→ COM5, COM7, COM9, and COM10 are removed.

- ◆ For more information on removing ports, please refer to [“4.3. Deleting Virtual Ports”](#).

5.6 Using Virtual Ports

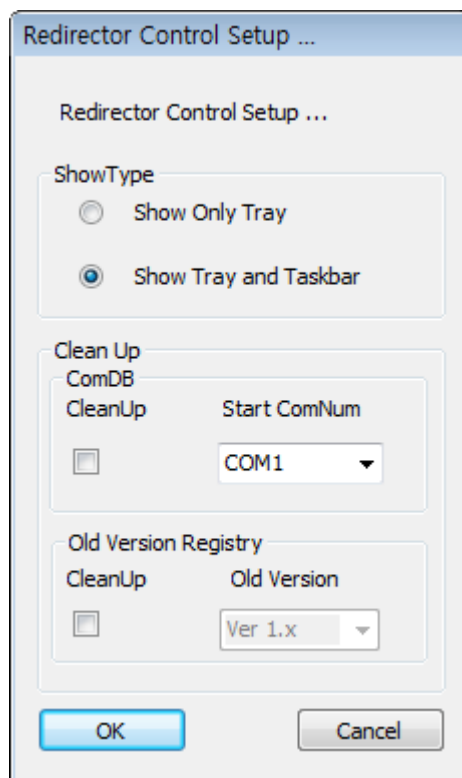
All virtual COM ports can be used just like real serial ports.

These ports are identical in operation with normal serial ports in console applications such as Hyper Terminal or SecureCRT. You can also write applications with Windows API or MFC to control these ports.

Just make sure that COM Port Redirector is running before using virtual ports and that all configurations are correct before running user applications.

5.7 Controller Setup

Use Controller Setup on lower left corner to use Clean Up and change Redirector Controller settings.



Chapter 6. Troubleshooting

Q

“Unable to init Redirector ports. Unable to run.” message shows and Redirector Control quits.

A

This message appears when redirector port driver is not installed successfully.

Look for “Yellow !” mark in the COM port from the “Device Manager” and right-click to select “Driver Update” . Install driver from this menu, referring to details provided in this manual.

Q

“Previous execution of Com Redirector was not terminated correctly. Perform cleanup for next execution?” message shows and Redirector Control quits.

A

This message appears when Redirector Control is restarted after COM Port Redirector is terminated abnormally.

Click “Yes” and restart Redirector Control.

Note

In Windows XP and Vista, installed virtual ports are not displayed in device manager if COM Port Redirector is not running. This is because these operating systems do not list COM ports in the boot process in order to shorten the boot time. This is normal, and Redirector Control lists COM ports upon start-up. Then you can see these ports from the device manager.