

RC21

RS-232 / RS-422 / RS-485

To

Ethernet Converter Module



WISCO
Industrial Instruments

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Chapter 1 : INTRODUCTION

RC21 Ethernet Serial Converter Module provides Ethernet to Serial connections converter for RS-232, RS-422 or RS-485 devices. Existing Windows based serial software using standard Windows API does not have to modify to communicate over an Ethernet LAN to a serial device. The module **RC21** virtual com port will make this an easy transition.

Features

- **Interfacing Serial Port provide** for RS-232, RS-422, RS-485 independently from each other
- **10 Mbps Ethernet**
- **LAN Communications**
- **TCP or UDP Client or Server operation** – Configurable
- **Software Support** – Windows 2000/XP
- **Configuration** of Module can be accomplished using program **RC21-Manager** of two method : **Serial Setup** or **LAN Setup**

Product Specifications

LAN	
Ethernet	10 Mbps (RJ45)
Serial	
Interface	RS232, RS-422, RS-485
RS-232 Signals	Rx, Tx, Gnd
RS-422 Signals	Rx+, Rx-, Tx+, Tx-
RS-485 Signals	+, -
Parity	None, Even, Odd
Data bit	7, 8
Stop bit	1, 2
Baud Rate	300 bps to 115.2 Kbps
Power & Environment	
Power Supply	110 or 220 VAC
Operating Temperature	0 °C to 50 °C
Dimension	50 x 70 x 130 mm

Default Setting

Server Name	Default Config.
MAC Address	00:50:C2:3D:4x:xx
DHCP	Disable
IP Address	192.168.1.127
Net Mask	255.255.255.0
Default Gateway	192.168.1.1
Baud Rate	9600
Data	8
Parity	None
Stop	1
Flow Control	None
Serial Interface	RS-232
Protocol	TCP
Local Port	9999
Connection Mode	Server
TCP Client Connection	Power ON
TCP Activity Timeout	Disabled
TCP Serial Timeout	Disabled
TCP Remote Port	9999
Force Transmit	1 x 10 msec.
Delimiter	Disabled

Communication Modes

Virtual COM Mode

The Virtual COM mode requires the installation of a driver. The driver used for Virtual COM Mode is installed automatically on your computer when you install **RC21-Manager**. The driver establishes a transparent connection between host and serial device by mapping the IP : Port of the **RC21** port to a virtual COM port on the host computer.

The driver grab data sent to the virtual COM port, packs it into a TCP/IP packet, and then redirects it through the computer's Ethernet card. At the other end of the connection, the **RC21** accepts the Ethernet frame, unpacks the TCP/IP packet, and then transparently sends it to the appropriate serial device attached to one of the **RC21**'s serial ports.

To use this mode, the **RC21** must be set to either TCP/server or UDP/server with a designated communication port number.

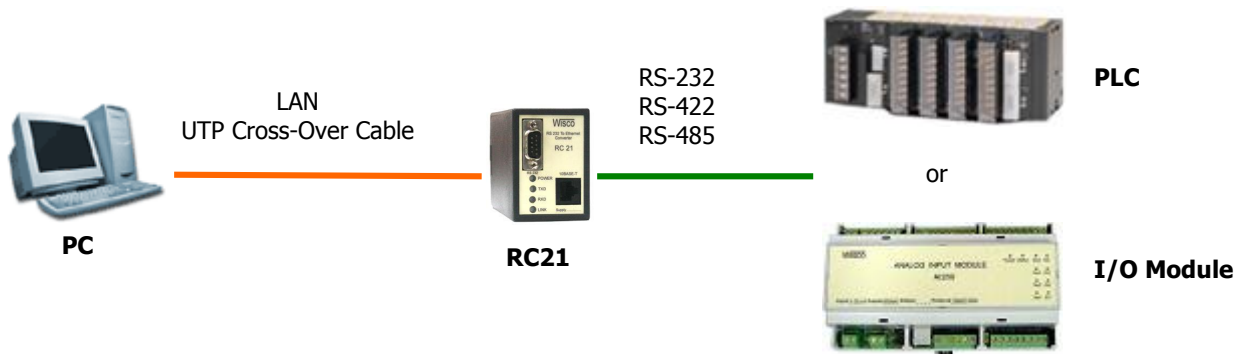


Figure 1. Sample of Virtual COM Port Mode via Point to Point

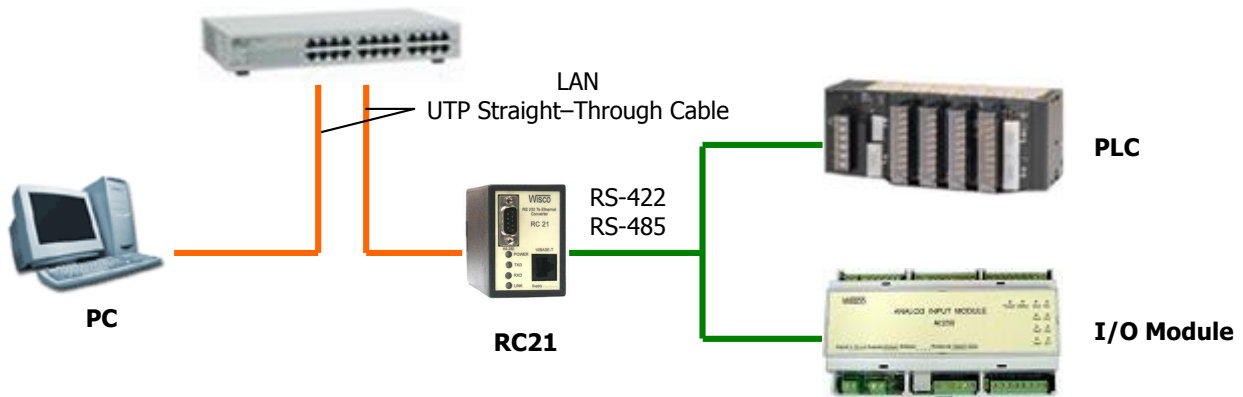


Figure 2. Sample of Virtual COM Port Mode via LAN Network

Direct IP Mode

In Direct IP mode, **RC21** is configured as a TCP or UDP server with a unique IP : Port address on a TCP/IP network. **RC21** waits passively to be contacted by the host computer, allowing the host computer to establish a connection with and get data from the serial device. The data is sent directly to and from the serial port on the server. When using UDP protocol the server can be configured to broadcast data to and receive data from multiple IP addresses.

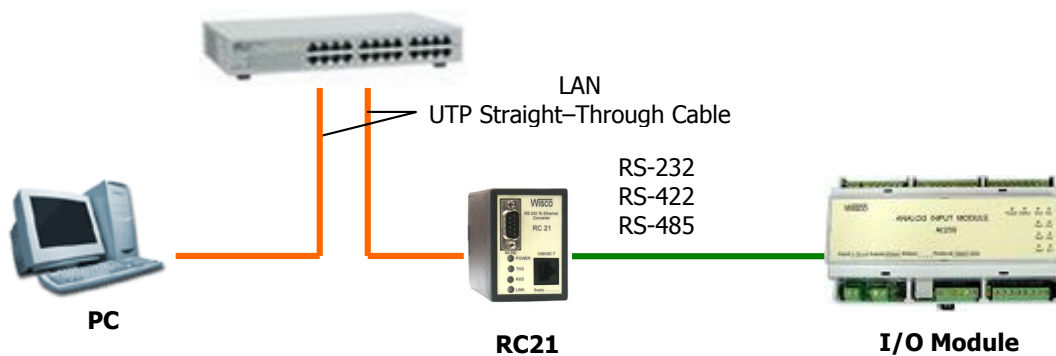


Figure 3. Sample of Direct IP Mode

Paired Mode

Paired Mode employs two RC21 that can be used to remove the distance limitation imposed by the RS-232 interface. One **RC21** is connected from its RS-232 port to the COM port of a PC or other type of computer, and the serial device is connected to the RS-232 port of the other **RC21**. The two **RC21** are then connected to the LAN. Two **RC21** are connected to a network, one configured as a TCP or UDP client and the other as a TCP/UDP server. When setting up the client the remote IP address section must contain the address of the server.

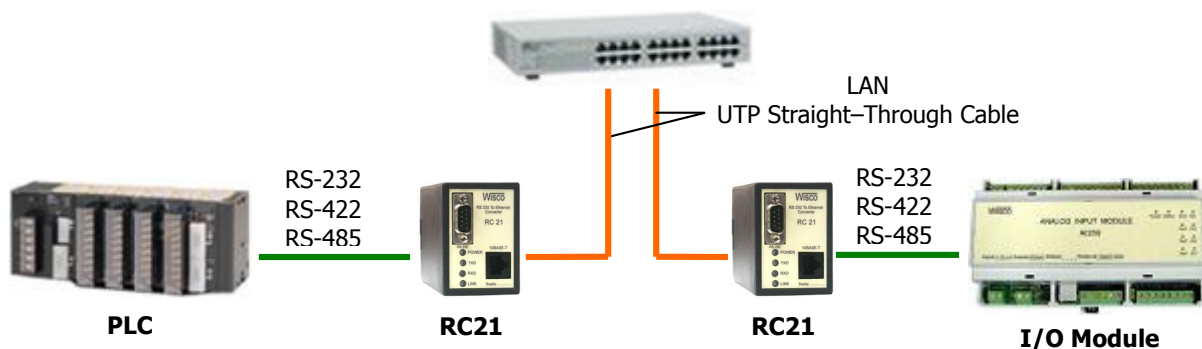


Figure 4. Sample of Paired Mode

Virtual Serial Port Quick Start Guide

This quick guide will help you set RC21 Module to use as virtual serial port in few steps.

Hardware Setup

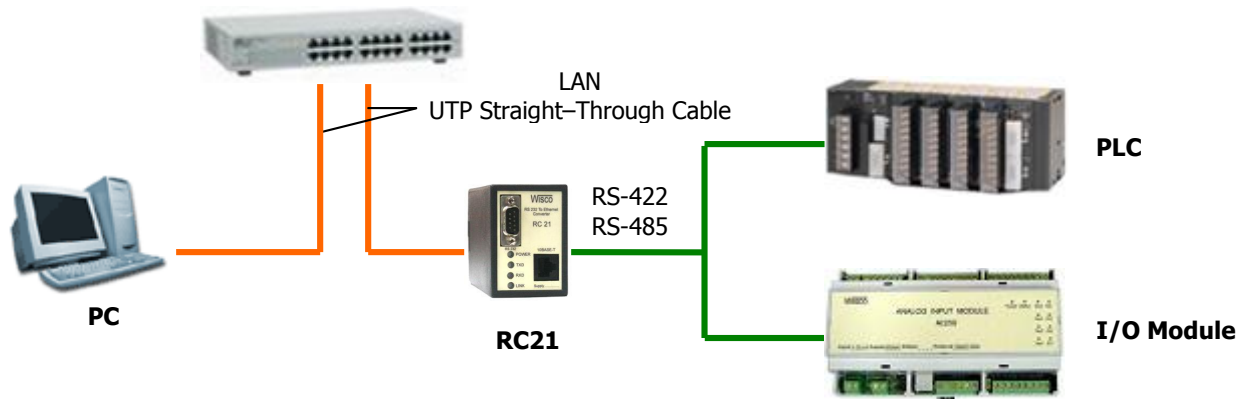


Figure 5. Typical Hardware Setup

- Step 1 :** Apply power to the **RC21 Module**. The 'Power' LED will turn ON.
- Step 2 :** Connect the **RC21 Module** to the network with a standard network cable (included in box).
- Step 3 :** Connect the **RC21 Module** to the RS-232/RS-422/RS-485 port on the serial device.

Software Setup

Using the CD included with the **RC21 Module**, install the Virtual Serial Port **RC21-Manager** software on the configuring computer.

RC21 Module Configuration

- Step 1 :** Open the **RC21-Manager** software. It will automatically search for any responsible **RC21 Module**. A list of all **RC21 Modules** connected to the LAN will appear in the RC21Manager Main List window.
- Step 2 :** Double click the desired **RC21 Module** on the list to view new RC21 Properties configuration screen.

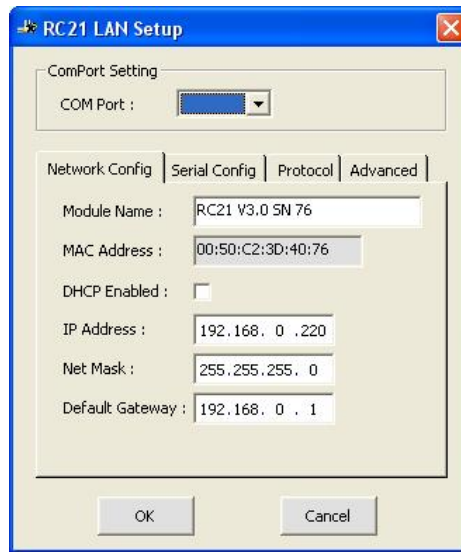


Figure 6. Sample of RC21 Properties Window

Step 3 : Change the **RC21 Properties** as required.

- Enable DHCP to allow the **RC21 Module** to retrieve **IP address** from DHCP Server, or set static **IP address, Net mask** as your Network Administrator advice.
- Set **Serial Interface** to match the serial device that connecting with.
- Set **Baud Rate, Data/Parity/Stop, and Flow Control** to match the serial device that connecting with.
- Choose **LAN Protocol** that you want to use (**TCP** or **UDP**) with TCP you must choose **TCP Mode (Server or Client)** as descript in **Features**.

Note : If **DHCP** has been activated, you must wait **RC21 Module** for regenerating **IP Address**.

Step 4 : Open the **RC21-Manager** software. It will automatically search for any responsible RC21 Module. A list of all **RC21 Modules** connected to the LAN will appear in the **RC21-Manager** Main List window.

Note : You can skip **COM Port** setting if you just want to Changing **RC21 Properties**.

Chapter 2 : MAKING THE HARDWARE CONNECTIONS

Package Check List

The **RC21 Module** is shipped with the following items included:

- **RC21 Module**
- Power Supply
- This Software Manual
- CD-ROM disc with manual, **RC21-Manager** software for Windows 2000/XP

RC21 Connections and Indicators

The **RC21 Module** has Connector and Indicators:

- Four indicator LEDs
- One Ethernet connector (RJ-45 Female)
- A power connector
- One serial port connector (DB-9M)

Panel Layout

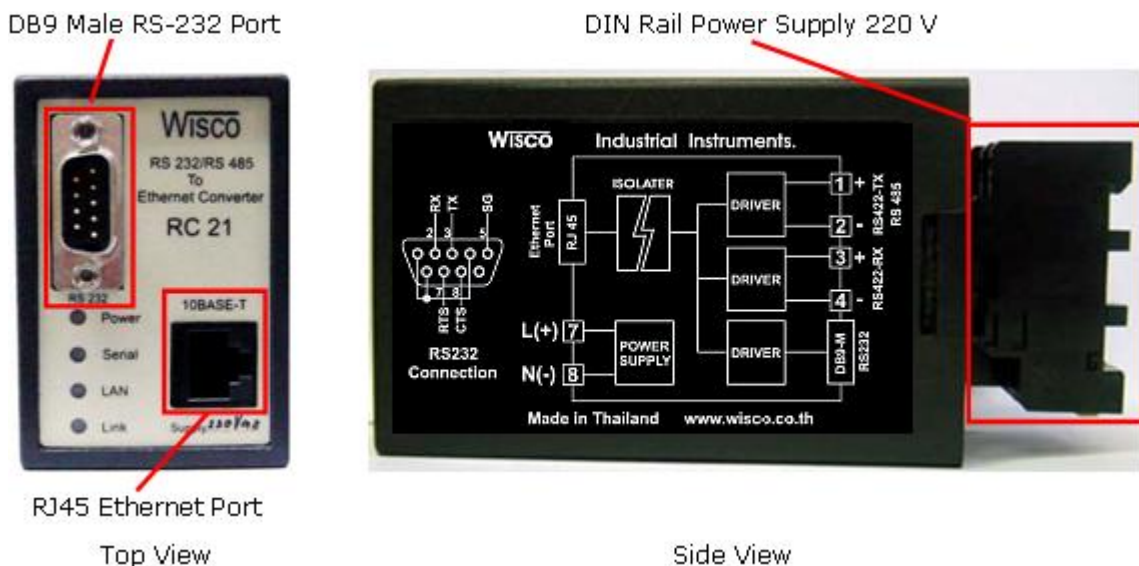


Figure 7. Typical Hardware Setup

Dimensions

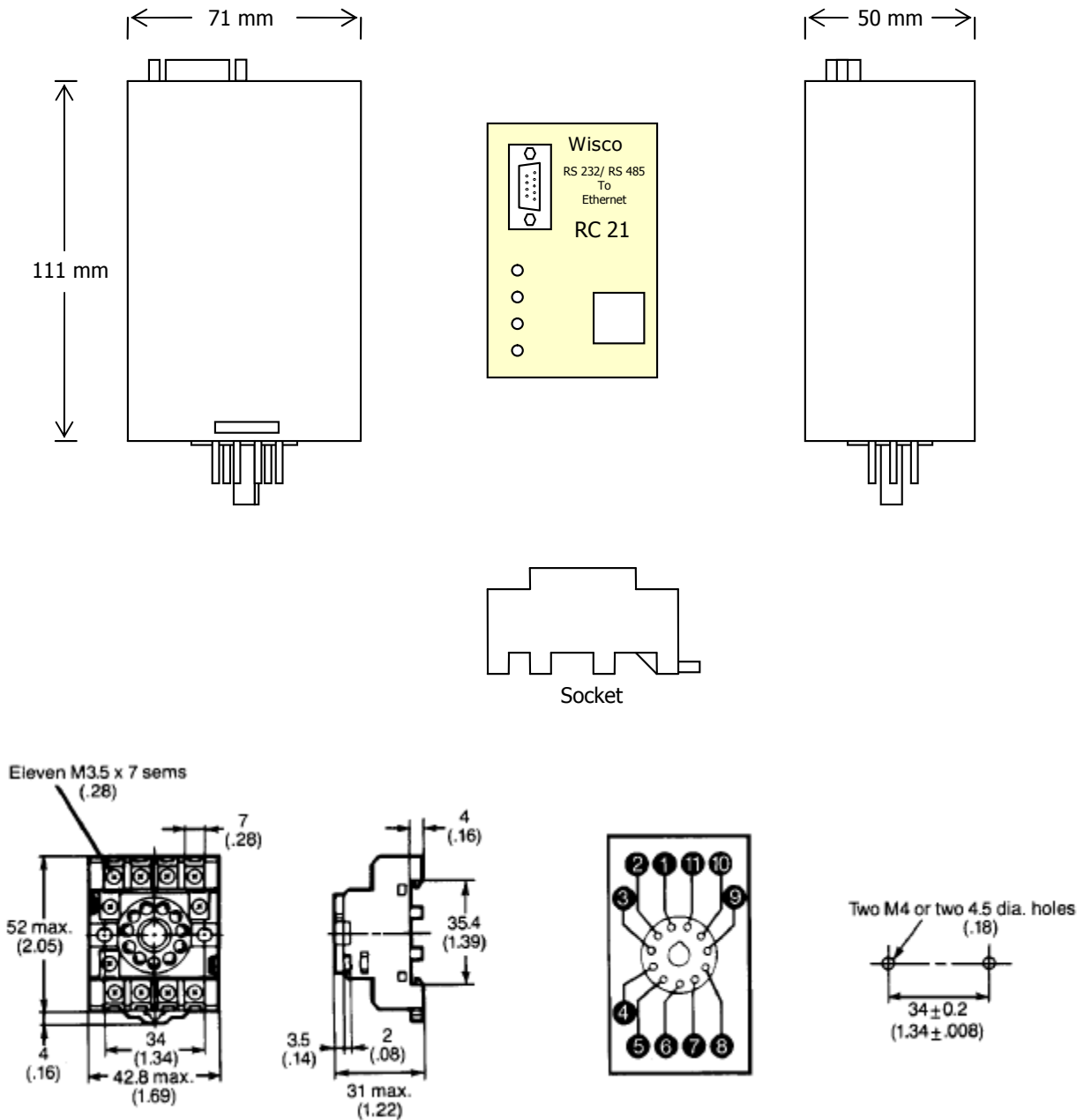
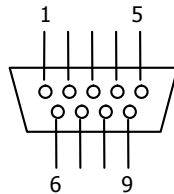


Figure 8. RC21 Module and OMRON PF113A-E Socket

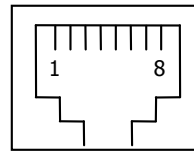
Pin Assignment

**RS-232
DB Male**



PIN	Signal
2	RxD
3	TxD
5	GND
1,4,6	Short
7	RTS
8	CTS

**Ethernet
RJ-45**



PIN	Signal
1	TX+
2	TX-
3	RX+
6	RX-

LED Indicators

Name	Function
Power	ON : Power is applied. OFF : No power applied.
Serial	OFF : Serial port is idle. Blink: Serial port is receiving and transmitting data.
LAN	ON : Ethernet port is idle. Blink: Ethernet port is receiving and transmitting data.
Link	OFF : Not Connect to Ethernet. ON : Connected to Ethernet.

Hardware Connection



Figure 9. Hardware Interfacing

- Step 1 :** Apply power to the **RC21 Module**. The 'Power' LED will turn ON.
- Step 2 :** Connect the module to Network uses network cable.
- Step 3 :** Connect the module to the serial device.

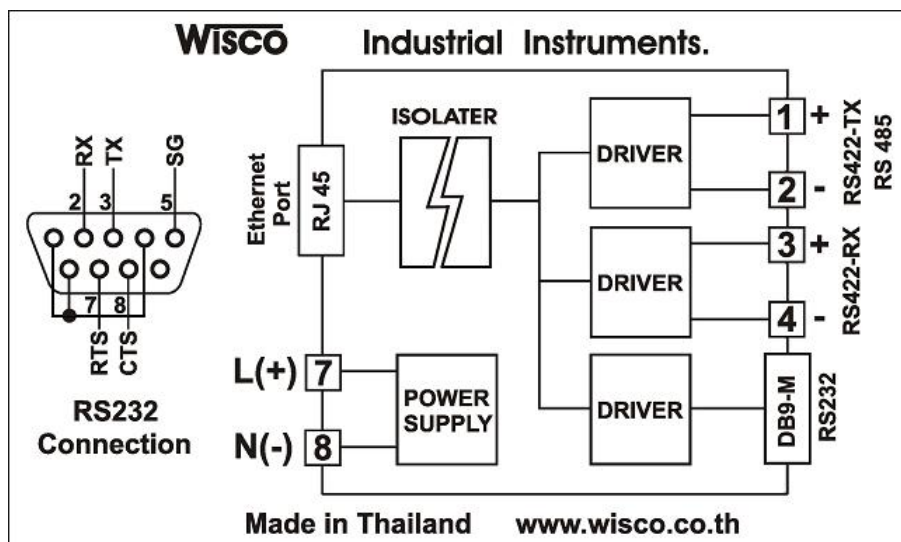


Figure 10. Socket Interfacing (see Module)

Chapter 3 : INSTALLING SOFTWARE

The **RC21-Manager** software use for RC21 Module management include with Virtual COM Port Installer that fast and easy to configuration and using.

Software Installation

- Step 0 :** If an older version of **RC21-Manager** is already installed, please remove it before start new setup.
- Step 1 :** Insert **Wisco CD** into the CD-ROM.
- Step 2 :** Click 'SOFTWARE' label then click '**RC21-Manager**' label. Then click 'Software Setup' link at the below of program.



Figure 11. Installer in **Wisco CD**

- Step 3 :** When Setup Window show up, click 'Next' button until finished.



Figure 12. **RC21-Manager** Setup Window

The installed program has location in program files group by default as

[Windows Drive] > Program Files > Wisco > Wisco Virtual Port > RC21Manager 2

And have shortcut which you can access in programs group by default as

Start > Programs > Wisco > Wisco Virtual Port > RC21Manager 2.2

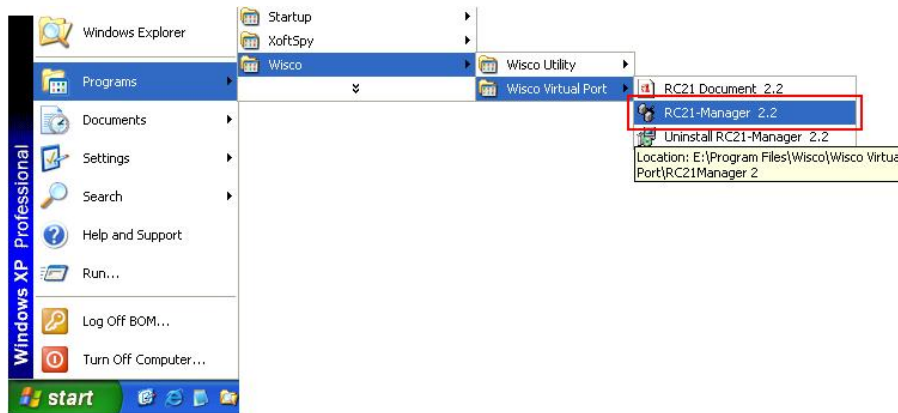


Figure 13. Location of default program and shortcut

Program Removal

Use shortcut in programs group to uninstall RC21Manager from computer. After uninstall program, RC21 folder may be exist. You can delete folder to remove all file that may not use anymore later

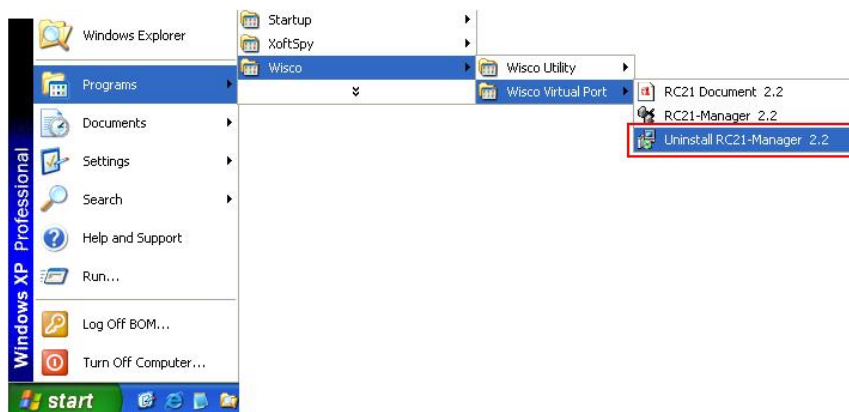


Figure 14. Uninstall program using shortcut

Chapter 4 : USING RC21-MANAGER

The **RC21-Manager** software allows:

- Searching for modules connected to the network
- Displaying and changing the configuration of those modules
- Installing virtual COM ports on a computer
- Refreshing Port status
- Uninstalling virtual COM ports on a computer

Hardware Setup

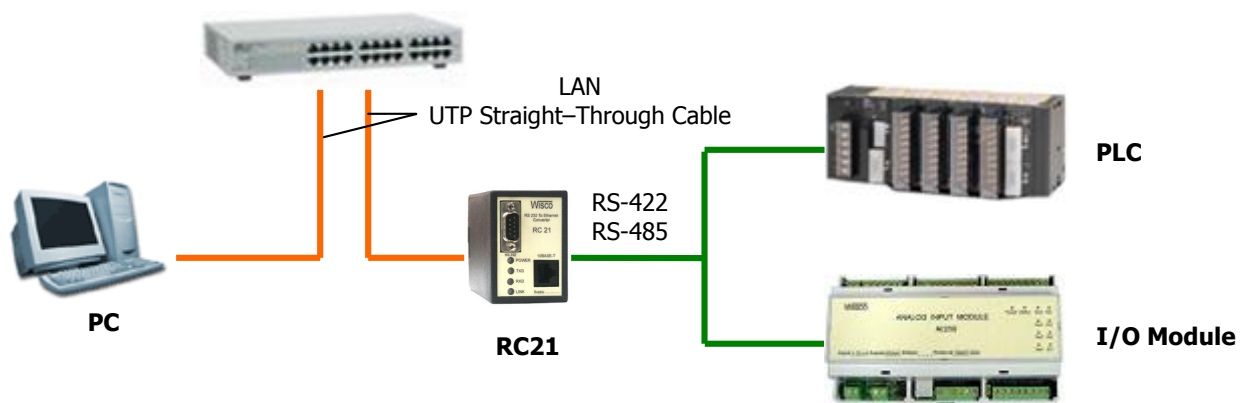


Figure 15. Typical Hardware Setup

Step 1 : Apply power to the **RC21 Module**. The 'Power' LED will turn on.

Step 2 : Connect the module to Network uses network cable.

Step 3 : Connect the module to the serial device.

Software Overview

To run the **RC21-Manager** using shortcut, from the **Windows Desktop** click:

[Windows Drive] > Program Files > Wisco > Wisco Virtual Port > RC21Manager 2

Default that when **RC21-Manager** opens it will initial searching for **RC21 Module** and add all found module in the list.

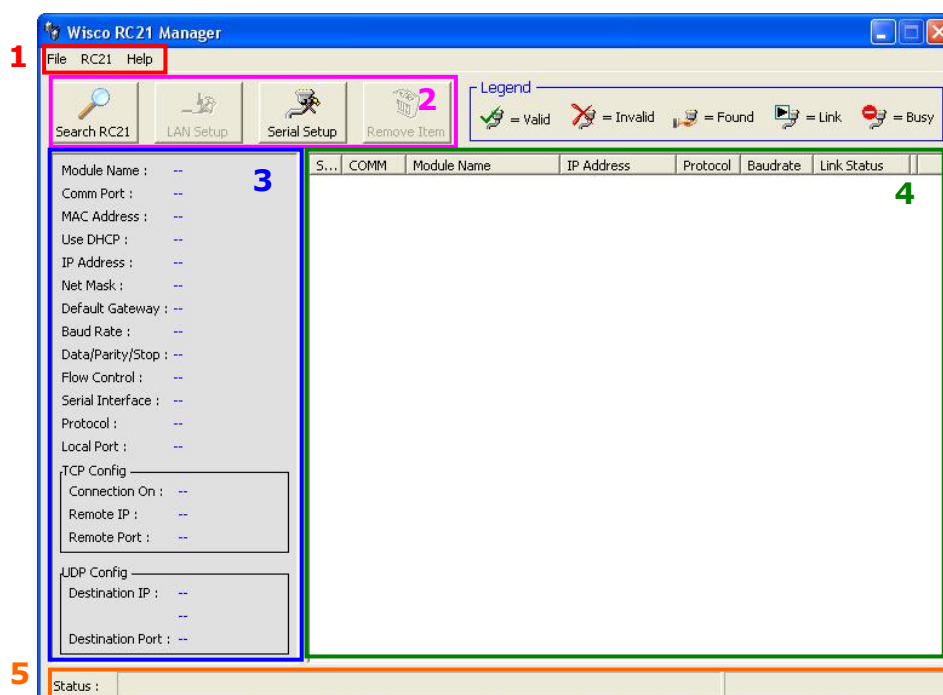


Figure 16. The **RC21-Manager** Window

The **RC21-Manager** window provides the following information:

- 1. Menus**
- 2. RC21 Button**
- 3. RC21 Module Properties**
- 4. RC21 Module / Virtual COM Lists**
- 5. RC21 Connection Status**

Menus

File



Figure 17. Menu 'File'

- **Open File** – Open initial file 'RC21.wni' that contain **Virtual COM Port Configuration** that have saved.
- **Startup With Windows Starts** – **RC21-Manager** will run automatically after Windows startup.
- **Start Main Window Minimized** – **RC21-Manager** will start **Main Window** in minimized state (Taskbar) when program startup.
- **Open 'RC21.wni' File When Start** – **RC21-Manager** will open initial file 'RC21.wni' when program startup.
- **Search RC21 when open 'RC21.wni' File** – **RC21-Manager** will scan for **RC21** after open initial file.
- **Save 'RC21.wni' File When Exit** – **RC21-Manager** will save initial file 'RC21.wni' when exit program.
- **Save 'RC21.wni' File** – Save **Virtual COM Port Configuration** to initial file 'RC21.wni'.
- **Hide / Show** – Swap between hide **Main Window** in minimized state (Taskbar) or show it with fixed area window state.
- **Exit** – Remove all **Virtual COM Port** that installed and close program **RC21-Manager**.

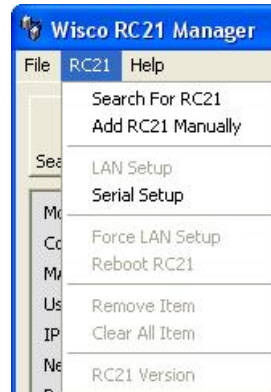
RC21

Figure 18. Menu 'RC21'

- **Search For RC21** – Search for **RC21 Module** on the network.
- **Add RC21 Manually** – Manually check **RC21 Module** using IP address, if exist then automatic add on **Virtual COM List**.
- **LAN Setup** – View and change **RC21 Module Properties** (include mapping for **Virtual COM Port**) via LAN network.
- **Serial Setup** – View and change **RC21 Module Properties** via RS-232 serial port.
- **Force LAN Setup** – View and force to change **RC21 Module Properties** (include mapping for **Virtual COM Port**) via LAN network (**RC21 Module** will force to disconnect from any connection and use new properties immediately).
- **Reboot RC21** – Disconnect **RC21 Module** from any connection and reboot itself via LAN network.
- **Remove Item** – Remove item from RC21 Module / Virtual COM Lists.
- **Clear All Item** – Disconnect connection with Virtual COM Port and remove all item from RC21 Module / Virtual COM Lists.
- **RC21 Version** – Read RC21 Module version via LAN network.

Help



Figure 19. Menu 'Help'

- **RC21-Manager Document** – View RC21/RC21Manager Manual.
- **About RC21-Manager 2.1** – View Dialog Box that show software description.

Taskbar



Figure 20. RC21-Manager's Icon on Taskbar

Program **RC21-Manager** always have icon at the Taskbar (which stay at bottom-right of screen). To use the menu of this icon, just right-click at the icon and menu will popup as following picture.

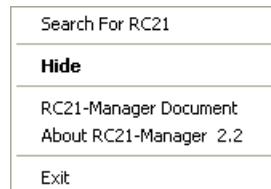


Figure 21. Popup Menu when right-click to icon on Taskbar

- **Search For RC21** – Searched for **RC21 Module** on the network.
- **Hide / Show** – Swap Main Window between minimized state (Taskbar) or show it with fixed area window state, Double-click on the icon mean select this menu.
- **RC21-Manager Document** – View RC21/RC21-Manager Manual.
- **About RC21-Manager** – View Dialog Box display software detail.
- **Exit** – Remove all **Virtual COM Port** that installed and close program **RC21-Manager**.

RC21 Button

Program provide the faster way to use **Search RC21, LAN Setup, Serial Setup, Remove Item** as Button that located in the top pane of window instead of using menus.

RC21 Module Properties

The list show **RC21 Module Properties** in the left pane with description as follow:

- **Module Name** – Displays the name that has been assigned to module.
- **COM Port** – Indicates the number of the **Virtual COM Port** that mapping to the computer as designed.
- **MAC Address** – The **MAC Address** is assigned in the factory with unique number.
- **Use DHCP** – Indicates that module receive IP Address and Net Mask from **DHCP Server** or not.
- **IP Address** – Displays IP Address number that assign to module.
- **Net Mask** – Displays Net Mask number that assign to module.
- **Default Gateway** – Displays Default Gateway number that assign to module.
- **Baud Rate** – Displays Baud Rate that use for serial communication on the module.
- **Data/Parity/Stop** – Display the data format that required while connecting to serial device when **Virtual COM Mode** is not being used.
- **Flow Control** – Display the setting that device require for data flow.
- **Serial Interface** – Display current setting that **RC21** allow serial connection with.
- **Protocol** – Indicates that module use protocol TCP (with Server/Client Mode) or UDP.
- **Local Port** – Displays the port number for connection on module.
- **TCP Connection On** – Displays the TCP Connection Mode (Power ON / Data) that use with protocol TCP Client Mode.

- **TCP Remote IP** – Display the Remote IP address that use in communication with TCP protocol.
- **TCP Remote Port** – Display the Remote Port that use in communication with TCP protocol.
- **UDP Destination IP Range** – Display the Destination IP address that use in communication with UDP protocol.
- **UDP Destination Port** – Display the Destination Port that use in communication with UDP protocol.

RC21 Module / Virtual COM Lists

The list shows RC21 Module Properties. To make management of lists of RC21 Module easier, lists can be sorted by clicking on any tab heading.

- **COM Status** – Show icon that indicate for **Virtual COM Port** status (Valid, Invalid, Busy, etc).
- **COMM** – Show that this **RC21 Module** is mapping to the computer as **Virtual COM Port** or not.
- **Module Name** – Display the name of this **RC21 Module**.
- **IP Address** – Show IP Address of this **RC21 Module**.
- **Protocol** – Show Protocol that this **RC21 Module** using.
- **Baud Rate** – Show Baud Rate of this **RC21 Module**.
- **Link Status** – Show Activity of this **RC21 Module** on network.

Search for Modules

Upon opening the **RC21-Manager** software it will automatically execute Searching for all reachable **RC21 Modules**.

To manually initiate a search for modules, click '**Search For RC21**' button (that located in the top pane of window). The searching window will appear.

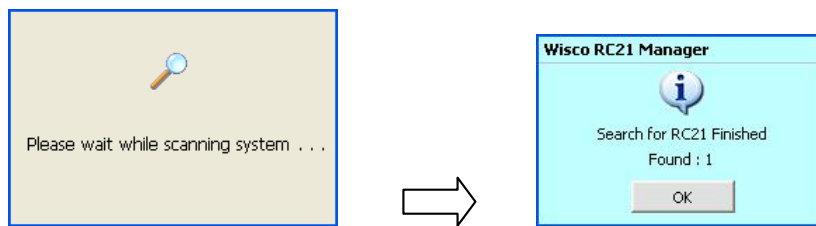


Figure 22. The Search Window

The searching window is shown until all active **RC21 Module** on the LAN are listed in the main window.

Configure Module Properties

The **LAN Setup** window displays the current configuration properties with description for the currently selected module and COM Port setting. Which details for setting properties are described in the next chapter.

To open the **LAN Setup** window, highlight the module in the **RC21 Module / Virtual COM Lists**, then double-click item or click at 'LAN Setup' button.

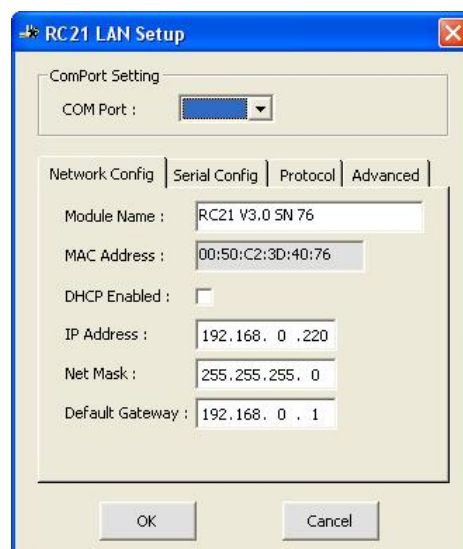


Figure 23. Sample of RC21 LAN Setup Window

The **Serial Setup** window displays the current configuration properties with description for the currently selected module via serial **RS-232** connection. Which details for setting properties are described in the next chapter.

To open the **Serial Setup** window, just click at 'Serial Setup' button to open.

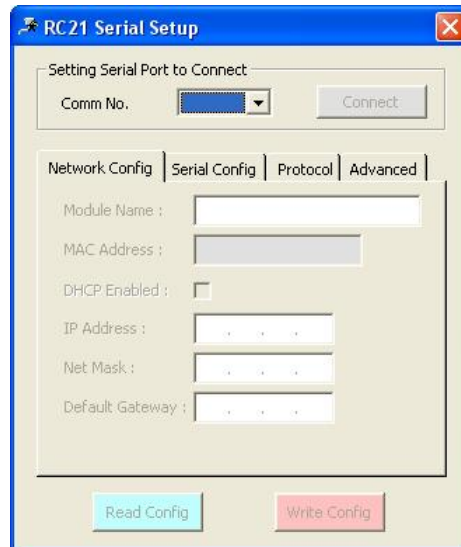


Figure 24. Sample of RC21 Serial Setup Window

When **Serial Setup** window has open, choose Commport Number then click 'Connect' Button. Program will require to switching **RC21 Module** to 'Serial Config Mode' with progress as follow:

- 1) Turn **RC21 Module**'s power off and Connect module to Serial Port.
- 2) Click 'OK' Button in message box then turn module's power on.
- 3) Program will try to switch module's mode every 5 seconds until it ready.

After module's setup has completed, click 'Disconnect' Button to switch **RC21 Module** back to 'LAN Mode'.

Note : Please make sure that **RC21 Module** has switched back to 'LAN Mode' in order to use on network.

Chapter 5 : CONFIGURING THE RC21 MODULE PROPERTIES

The **RC21 Module** can be configured using the **RC21-Manager** software by LAN or Serial Setup.

Description of the Module Properties

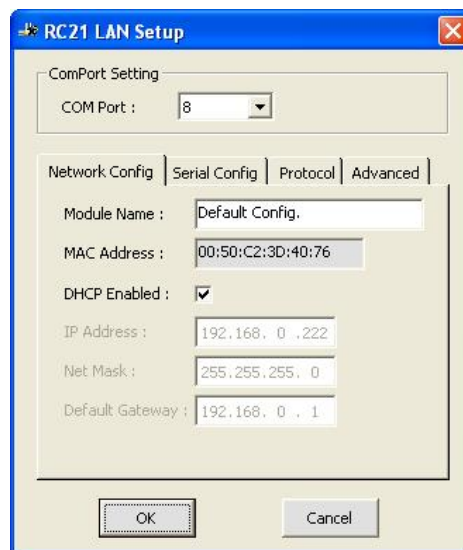


Figure 25. Sample of Network Config Category

LAN Setup Window provide with 5 Category of setup, while **Serial Setup** Window provide with 4 Category of setup. In following order:

- **CommPort Setting** (Only available on LAN Setup Window).
- **Network Config** – Provide network's configuration.
- **Serial Config** – Provide serial's connection configuration.
- **Protocol** – Provide protocol's configuration.
- **Advanced** – Provide data packaging's configuration.

CommPort Setting Category

Comm Port

This field indicates the number of the **Virtual COM Port** that mapping to the computer as designed. Can be map from COM1 to COM255 (that not repeat with **Real COM Port**).

Network Config Category

Module Name

This field displays the name that has been assigned to the **RC21 Module**, can be entering up to 20 characters. If more than one module is connected one then LAN network, it is recommended to assign a different name for each module.

MAC Address

The **MAC Address** is fixed and cannot be changed. It is assigned in the factory. Every Ethernet device manufactured has its own unique number.

Use DHCP

DHCP server is part of numerous LAN management systems. The **DHCP** field has two selections, 'Enable' or 'Disable'.

IP Address

A static **IP Address** can also be assigned in this section of the menu. Software requests a connection to the specific **IP address** of the serial server. If the **DHCP** reassigns a different **IP address** or the **DHCP** Server not presented (which result as IP address = 0.0.0.0) the software will not be able to communicate with the hardware. It is recommended to use a static **IP address**.

A static **IP address** is permanent and will not change unless changed in the setup. In most cases the network administrator establishes the static address to be used.

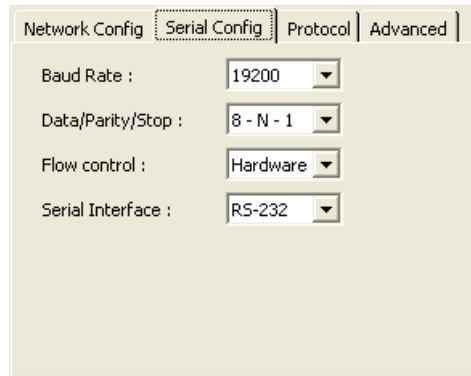
Net Mask

The default LAN net mask is configured for a Class-C address (255.255.255.0). This may be reconfigured by the user.

Default Gateway

The Gateway IP Address allows users to access the RC21 Module from outside the LAN network.

Serial Setting Category



Setting	Value
Baud Rate :	19200
Data/Parity/Stop :	8 - N - 1
Flow control :	Hardware
Serial Interface :	RS-232

Figure 26. Sample of Serial Config Category

Baud Rate

The serial port baud rate on the **RC21 Module** must match the serial baud rate of the connected device.

Data/Parity/Stop

Set this to match the data format used by the serial device connected when **Virtual COM Mode** is not being used.

Flow Control (Use with Module V3.0+)

The **Flow Control** setting must match the requirements of the serial device connected.

Serial Interface Mode (Use with Module V3.0+)

Serial Interface allows configuration following modes of operation:

- **RS-232** – When this mode is selected, **RC21 Module** will use an RS-232 serial port for communication.
- **RS-422** – When this mode is selected, **RC21 Module** will use an RS-422 serial port for communication. (will use in the new module)
- **RS-485** – When this mode is selected, **RC21 Module** will use an RS-485 serial port for communication.

Protocol Setting Category

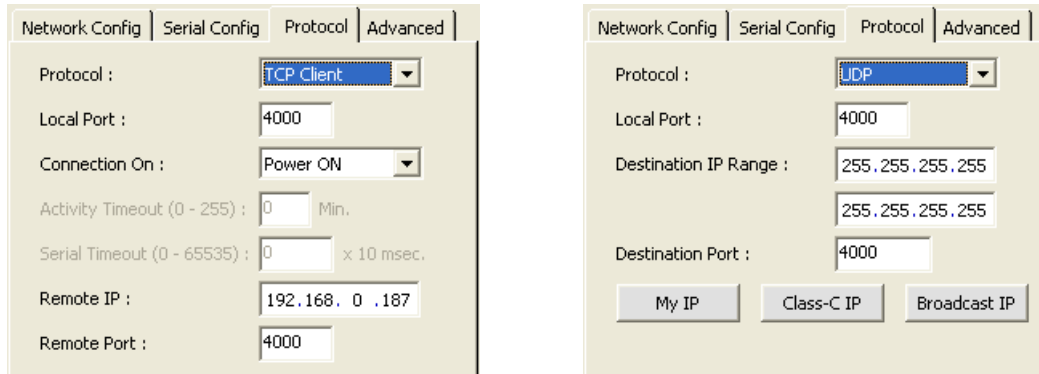


Figure 27. Sample of Protocol Category (TCP-Client / UDP)

Protocol

Provide with **TCP Server**, **TCP Client** or **UDP** protocol. TCP (Transmission Control Protocol) guarantees reliable communication with error checking whereas UDP (User Datagram Protocol) provides faster transmission.

If the application does not require a UDP connection, select TCP.

Each of protocol present different of properties for different purpose

- **TCP Server** – Have Activity Timeout, Serial Timeout.
- **TCP Client** – Have Connection Mode, Activity Timeout, Serial Timeout, Remote IP Address, Remote Port.
- **UDP** – Have Destination IP Address Range, Destination Port.

Local Port

This sets the port number for connection. The range of port number for the **RC21 Module** is 269 to 49150.

In all modes of operation, **Direct IP** or **Virtual COM**, the port number set in the Module Properties menu must match the Virtual COM or socket software port settings.

TCP Connection On

When the **Protocol** field is set to **TCP Client**, this field becomes active, allowing the **RC21 Module** to connect to the server either on **Power On** or on **Data Arrival** (first character arriving).

TCP Activity Timeout

The **Serial Server** monitors TCP activity. If TCP activity stops for the length of time specified in this field the connection will be closed. This field can be set to any value between 0 and 255 minutes. If zero, the server will not disconnect. The **RC21 Module** that uses Connection On 'Power On' can't use this feature.

TCP Serial Timeout

Default for the **Timeout** property is 0, or no timeout. Setting **Timeout** to any value between 1 and 65535 milliseconds activates it. If **Timeout** is set to 5 milliseconds and the **RC21 Module** makes a connection with other Server or Client starts. If communications are ideal for 5 milliseconds the **RC21 Module** will close connection and make itself available for another connection. The **RC21 Module** that uses Connection On 'Power On' can't use this feature.

TCP Remote IP

This is a security feature activated by entering the IP address of the desired client. The **RC21 Module** will only communicate with the listed IP address and all other requests for connection will be filtered out. The **RC21 Module** must be set up as a **TCP Client** to use this feature.

If **Paired Mode** is not being used, do not change this setting until the application has been tested and is communicating properly. Then activate the address filtering feature.

TCP Remote Port

As same as **TCP Remote IP** but this refer to security feature activated by entering the Port of the desired client.

UDP Destination IP Range

As same as **TCP Remote IP**, addition with selectable range of Destination of desired client. Only **RC21 Module** that use protocol **UDP** can use this feature.

UDP Destination Port

As same as **TCP Remote Port**. Only **RC21 Module** that use protocol **UDP** can use this feature.

Advanced Setting Category

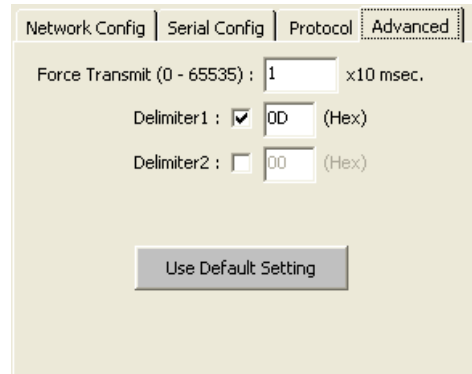


Figure 28. Sample of Advanced Category

Force Transmit

This field allows the user to set a maximum time limit between transmissions of data. The value set in this field multiplied by 10 milliseconds determines the Force Transmit time. When the elapsed time reaches the time configured in this field, the TCP/IP protocol will pack the data currently in the serial buffer into a packet and send it out the Ethernet Port.

Delimiter

These fields allow the user to enter two ASCII characters (in hex format) that delimit the beginning and end of a message. When a message with both these delimiters is received at the serial port, the data contained in the serial buffer is placed in an Ethernet packet and sent out the Ethernet port.

If only Delimiter 1 is set (Delimiter 2 is zero or blank), upon receiving Delimiter 1 the **RC21 Module** will put all the data in the serial buffer in an Ethernet packet and send it out the Ethernet port. If serial data wait longer than value that set in Force Transmit, it will automatically be placed in an Ethernet packet and sent out the Ethernet port.

Use Default Setting

Click this button will reverse all setting except **Comm Port** to Default Setting (see page 2).

Chapter 6 : ACTIVITY WITH VIRTUAL COM PORTS

The **RC21 Module** can be configured mapping as Serial Commport (COM#) to the computer. And show themselves in **Device Manager**. The COM number can be selected of available numbers, but not repeat with Real Commport. Almost computer have Real Commport as much as 4 ports, so COM5 and above is recommended to be choose.

Virtual COM Port Installation

In previous chapter with **LAN Setup** Window provide a selectable **Virtual COM Port** to mapping with computer, choose desired number in the combo box as picture below and then click 'OK' button to confirm.

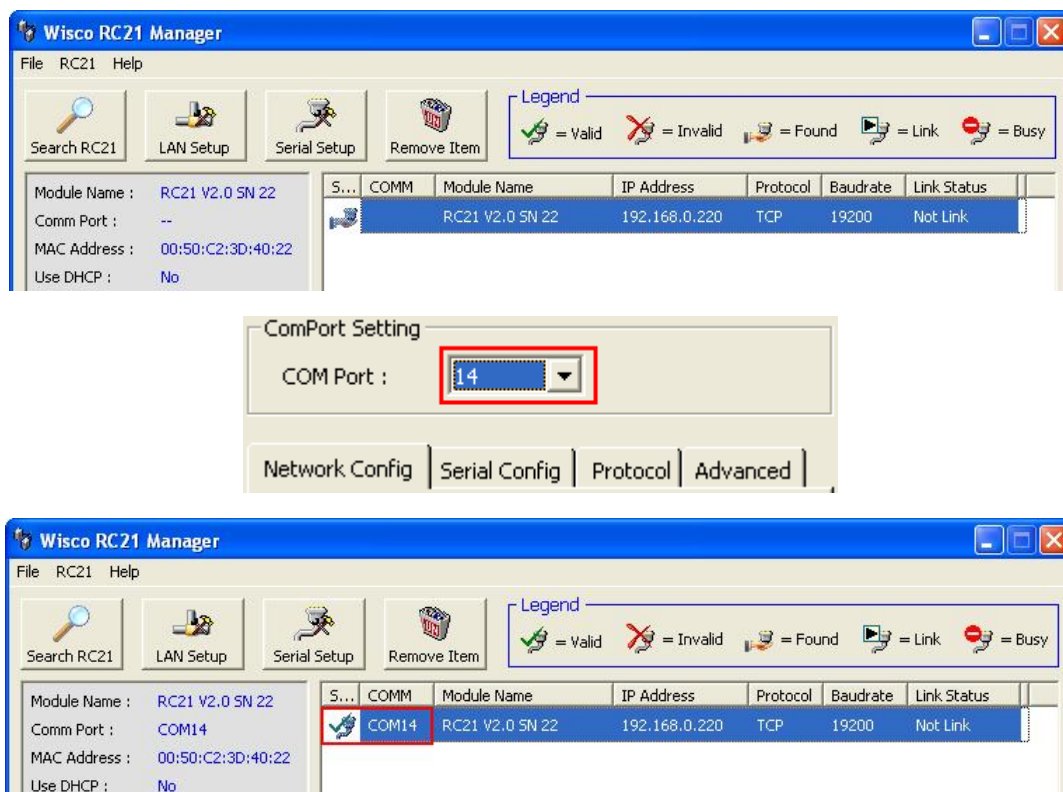


Figure 29. Commport Selection in LAN Setup Window

To make sure that Commport has installed, from the **Windows Desktop** click:

Start > Settings > Control Panel > System > Hardware > Device Manager

The installed Virtual COM Port will display as picture below

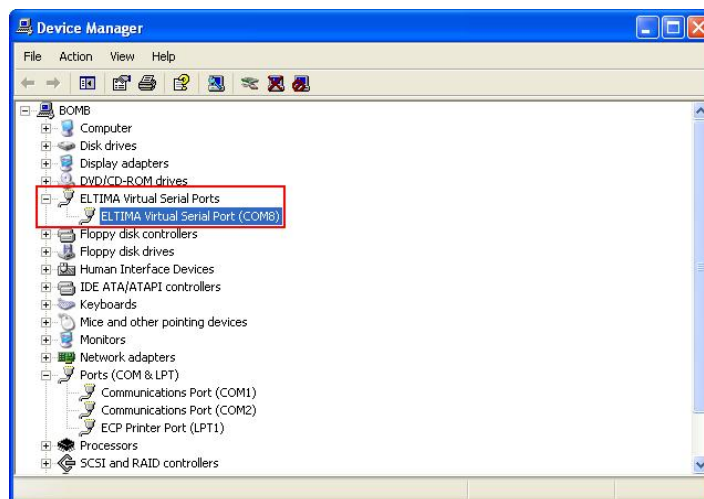
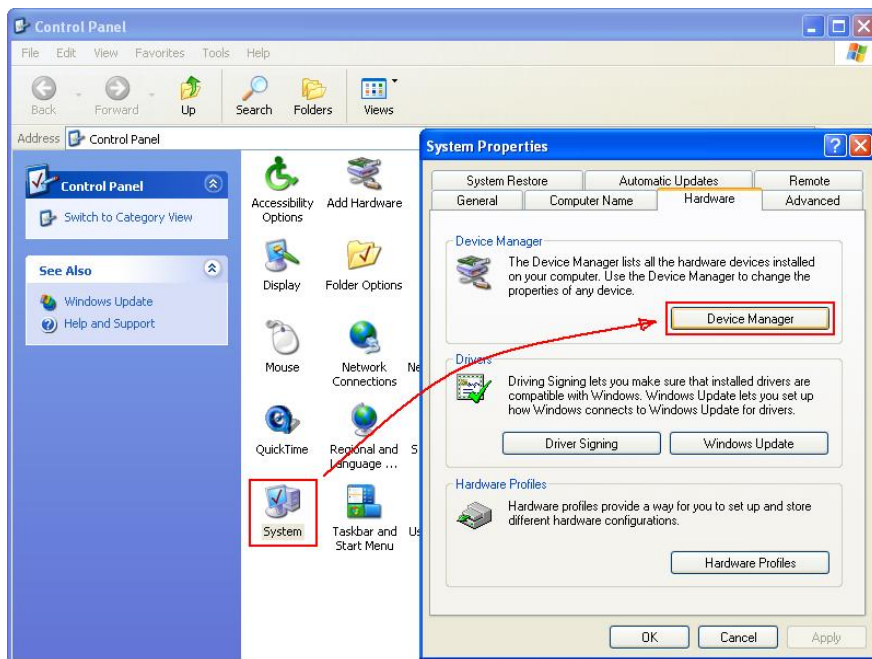


Figure 30. Location of default program and shortcut

Note : *Edit or remove **Virtual COM Port** in **Device Manager** is prohibited.*

Virtual COM Port Removal

To uninstall **Virtual COM Port**, user must close Commport on Client Program before continue or else Commport Control will be invalid.

Uninstallation can be done by remove item from the list through 2 commands, 'Remove Item' (remove selected item) and 'Clear All Item' (clear all item in the list). Close program **RC21-Manager** also temporary remove **Virtual COM Port** from system too.

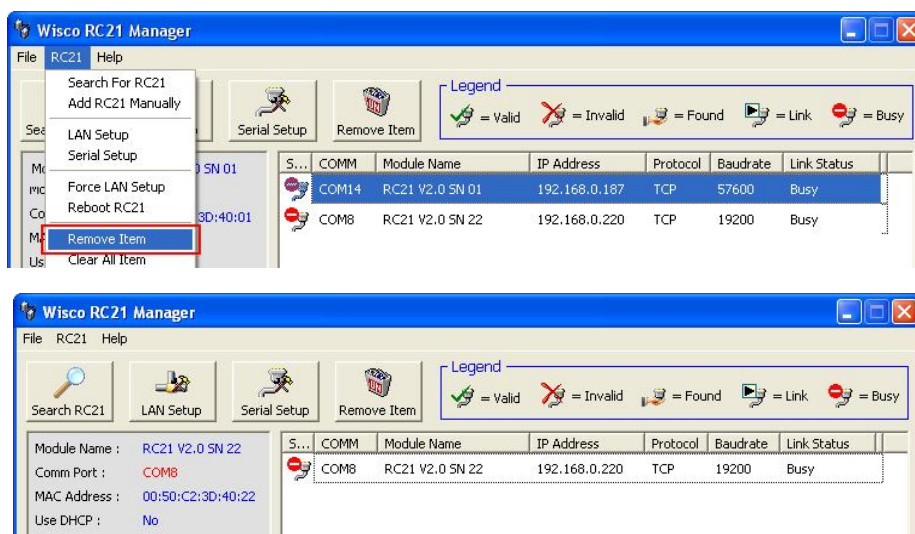


Figure 31. Uninstall Virtual COM Port using 'Remove Item' command

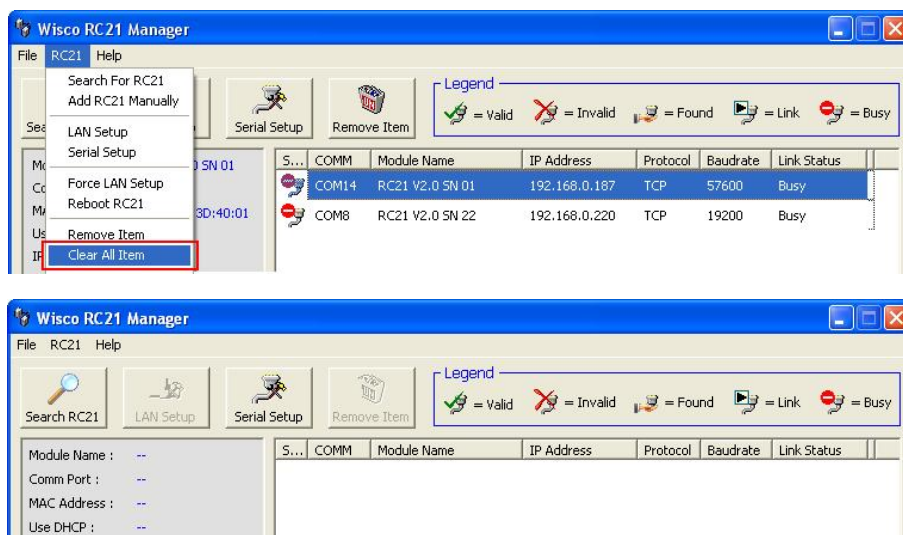


Figure 32. Uninstall Virtual COM Port using 'Clear All Item' command

Edited on 2008-02-25