

RS-232 Over Ethernet

User's Manual

STE-232



Table of Contents

Introduction	1
Features	1
Specifications.....	1
Installing VCOM setup programmer	2
Connecting the RS-232 over Ethernet.....	7
Assigning a static IP	7
Creating a COM port with VCOM	10
Configuring the parameters	13
Function Introduction	14
1.Administrator Setting	14
2.Version info	15
3.IP Setting	15
4.Password Setting.....	16
5.Load default setting.....	16
6.Reset the device to take effect.....	16
7.TCP Control	17
8.UDP	17
9.UART	18
10.Search Device	19
Regulatory Compliance	20

Introduction

The unit is an Ethernet to RS-232 Serial Bridge. It can be used to connect any standard serial communication devices such as a PC, an audio/video distribution system etc., to an Ethernet network. It allows bi-directional communication between the two ends. It operates as both a network server and a client that means it is able to both initiate and accept network connections. Once a network connection is made, the remote networked device or computer is virtually connected to the serial device on the other side of the Bridge. Both the network device and the serial device can send and receive messages to and from each other. Up to twelve network devices can be connected simultaneously. Data sent from any one of them is bridged to the serial port. Data received on the serial side is transmitted to all connected network devices. The bridge can send and receive both UDP and TCP packets.

Features

- Supports TCP / IP / UDP / DHCP and HTTP protocols
- Allows up to twelve (12) simultaneous TCP / IP network connections
- Data transfer rate up to 230k bps
- Supports software handshaking (XON / XOFF) and hardware handshaking (RTS / CTS)
- Multiple Bridges can be used on the same network
- Integrated 802.3 compliant 10 / 100 Mbps network interface
- RS232, DB-9 male 9pin serial port connection
- Supports Windows 98SE / 2000 / XP / Vista / 7 / 8 / 8.1 / 10 / 11; Windows server 2003 / 2008 / 2008R2 / 2012 / 2012R2 or higher

Specifications

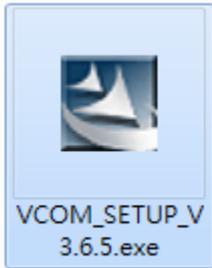
Model No.		STE-232	DB-9M Pin Assignment	
			Pin No.	Definition
Baud Rate		230 kbps	1	DCD
Connector	Ethernet	RJ-45 Female	2	RXD
	RS-232	DB-9 Male	3	TXD
Ethernet		10 / 100 Mbps, Auto-select 10BaseT or 100BaseTX	4	DTR
Configuration		SLAN Utility, Serial Console	5	GND
Flow Control (RTS/CTS)		Hardware / Software*	6	DSR
Power Supply		5VDC 1A	7	RTS
Housing		Plastic	8	CTS
Dimension (L x W x H)		66 x 39 x 20mm	9	RI

Remarks:

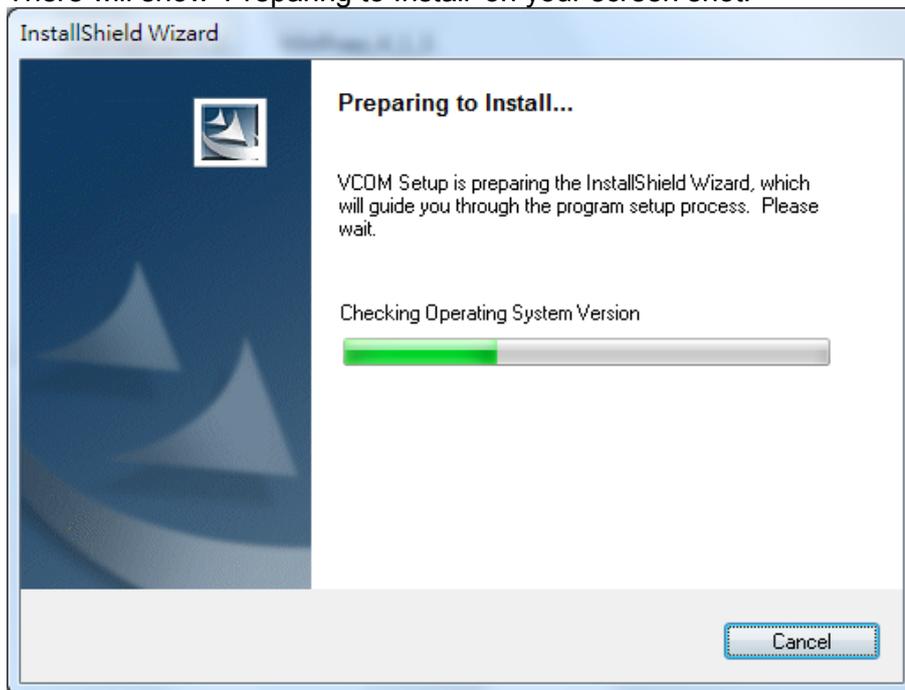
For the software flow control, you may select “none” on the part of Hardware Flow Control of UART setting. (see page 19)

Installing VCOM setup programmer

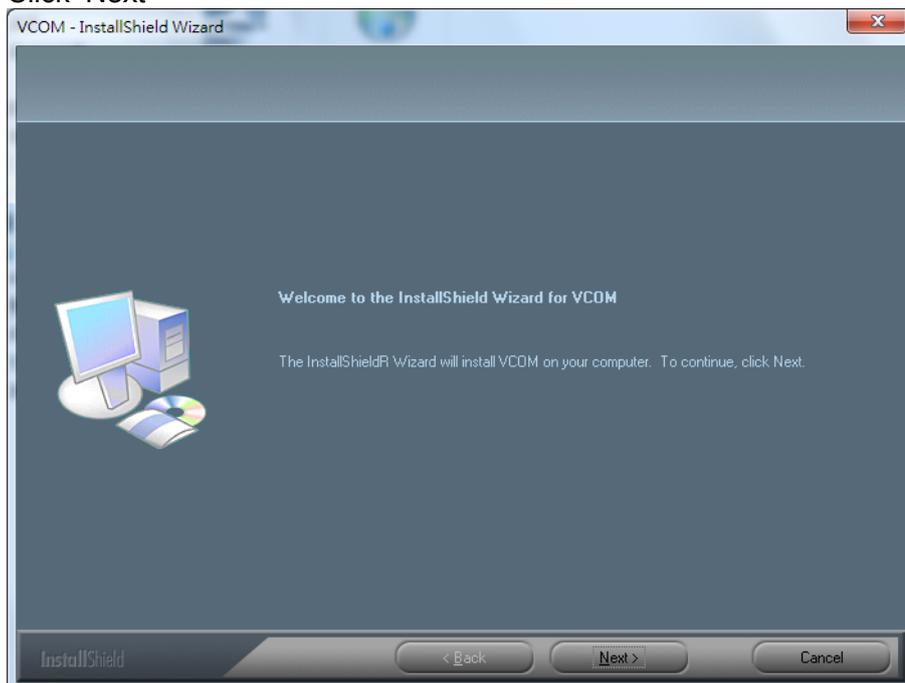
Click 'VCOM_SETUP_V3.6.5.exe' from enclosed CD.



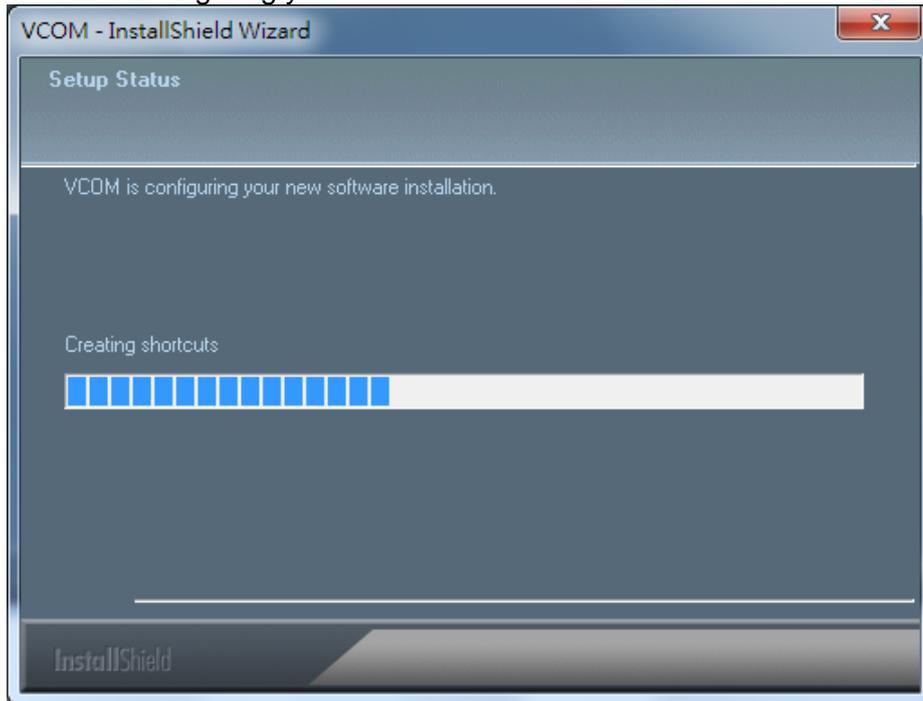
There will show 'Preparing to Install' on your screen shot.



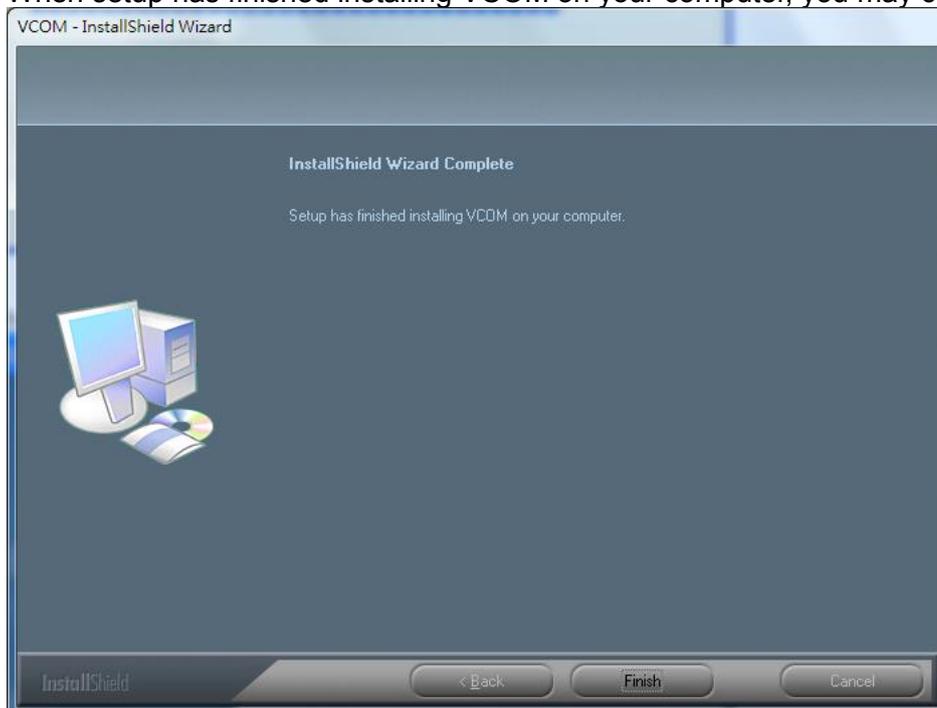
Click 'Next'



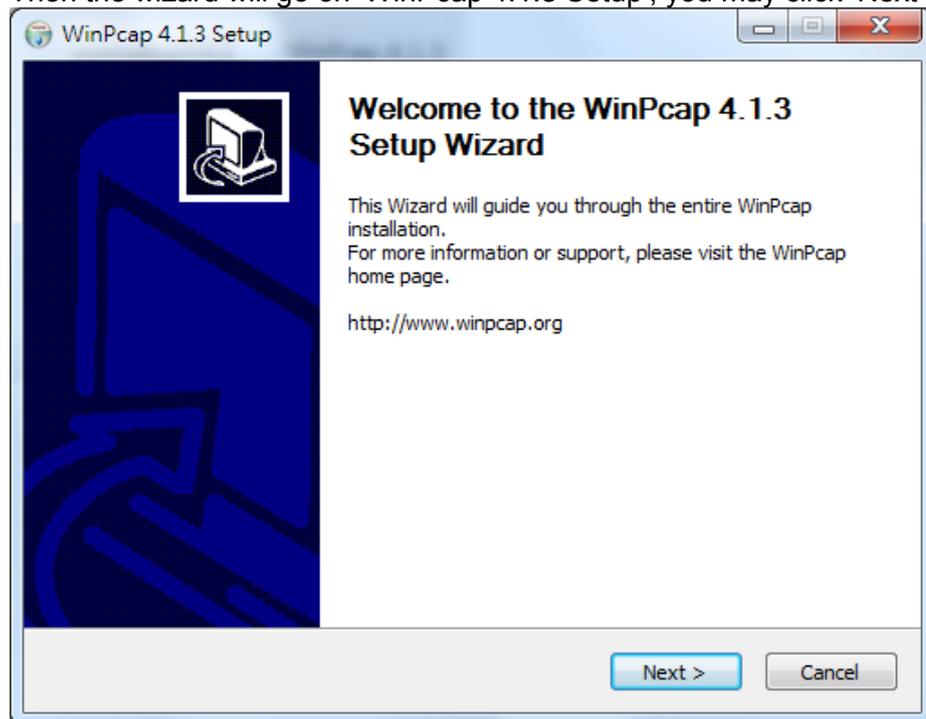
VCOM is configuring your new software installation.



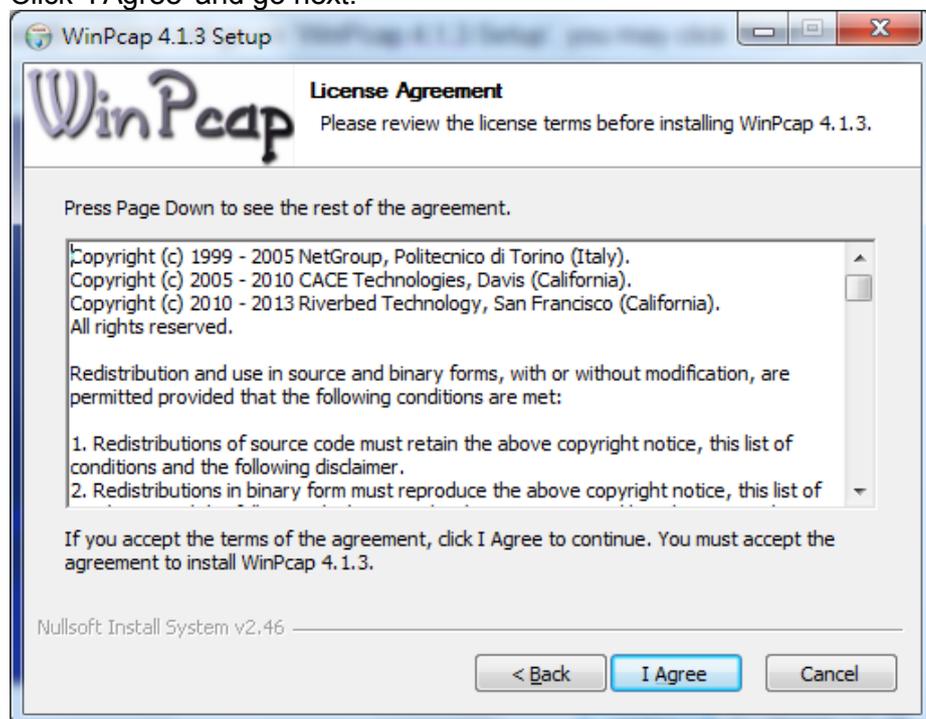
When setup has finished installing VCOM on your computer, you may click 'Finish'.



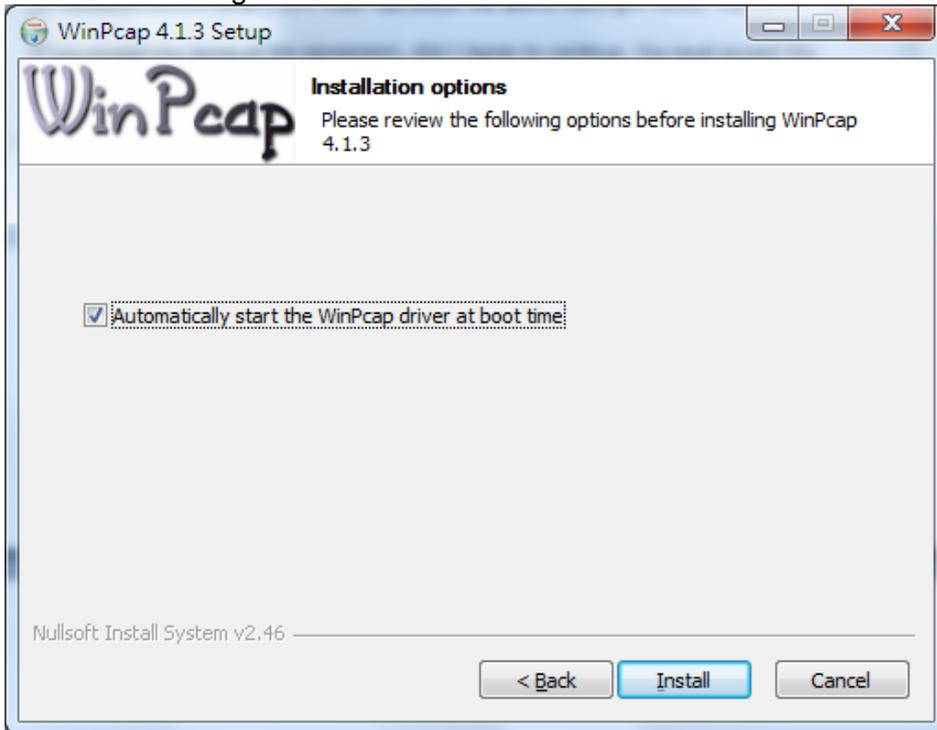
Then the wizard will go on 'WinPcap 4.1.3 Setup', you may click 'Next'.



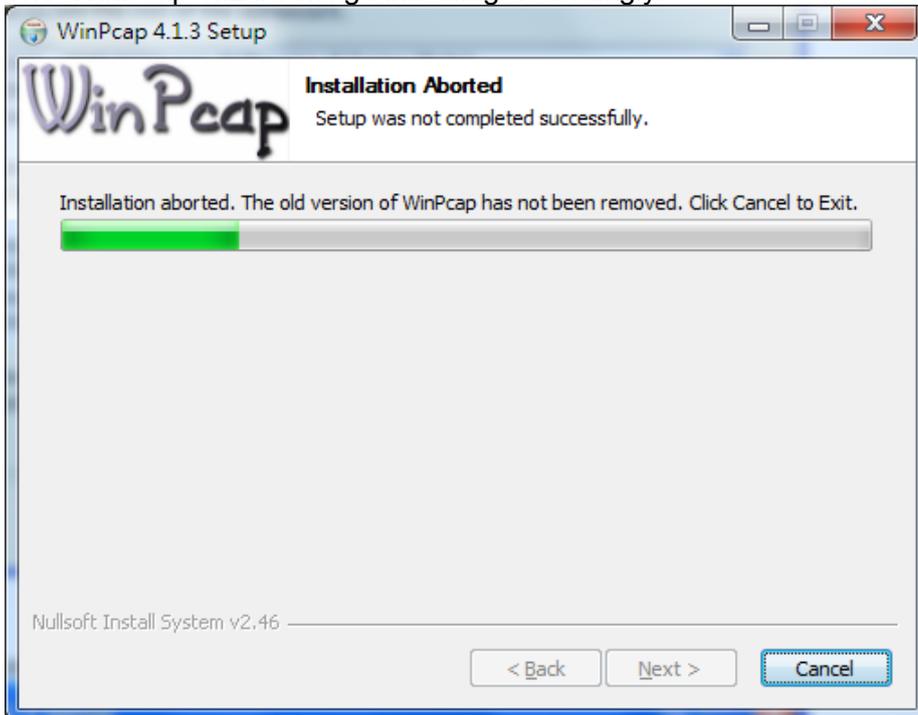
Click 'I Agree' and go next.



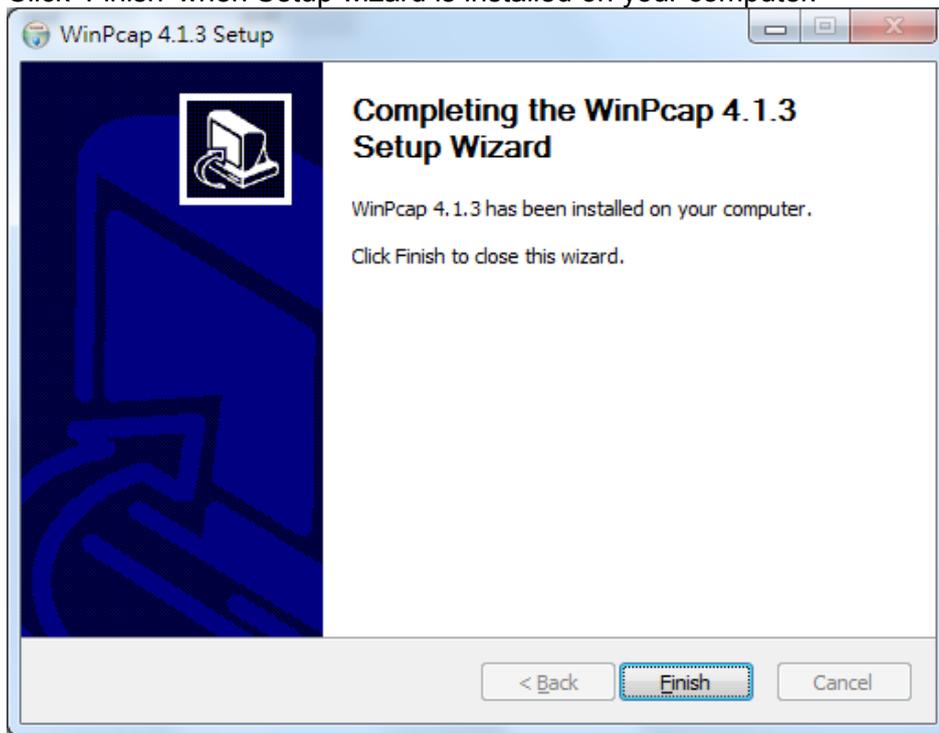
Click 'Install' and go next.



The 'WinPcap' wizard will go installing accordingly.



Click 'Finish' when Setup wizard is installed on your computer.



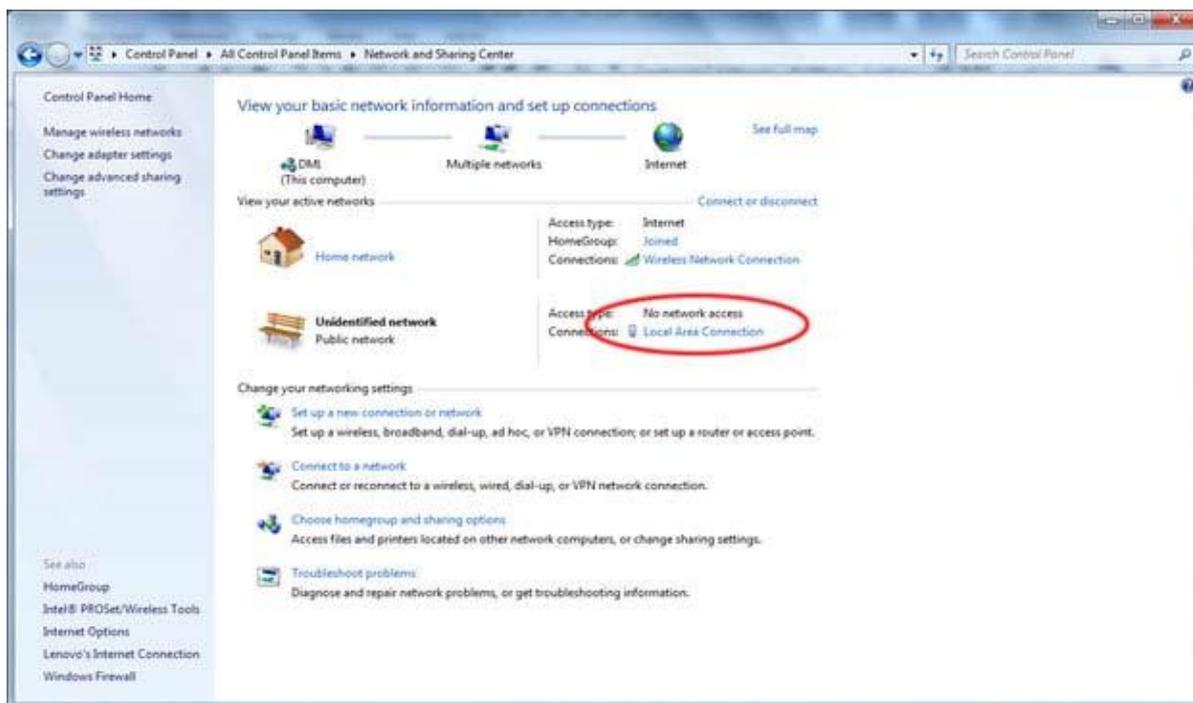
Connecting the RS-232 over Ethernet

- Connect the RS-232 over Ethernet to your computer using a standard cross over cable (EIA/TIA T568B) LAN cable.
- Connect the RS-232 over Ethernet to the power supply and turn on the power.

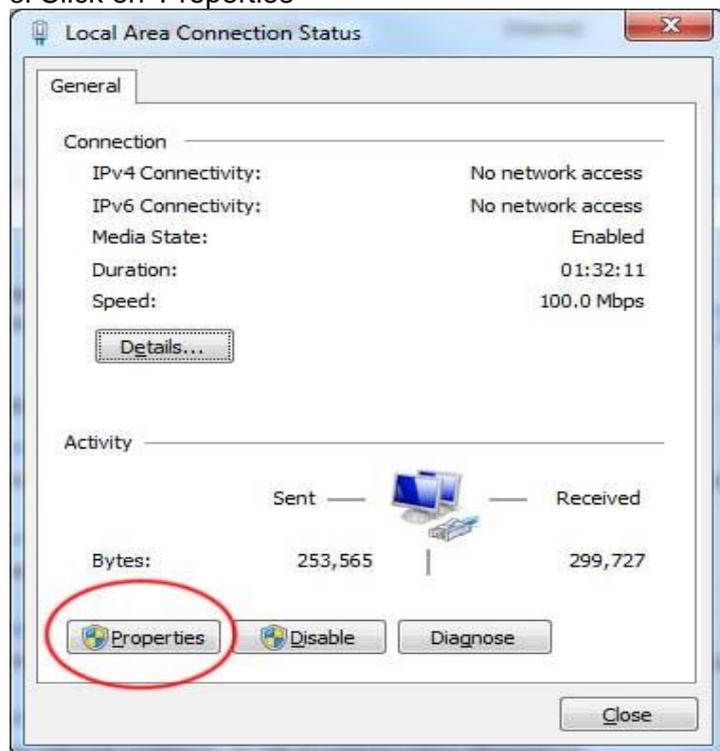
Assigning a static IP

The default IP address of the RS-232 over Ethernet is 192.168.2.1. For your computer to be able to find the RS-232 over Ethernet, you need to assign a static IP address between 192.168.2.2 and 192.168.2.254 that is in same range to the network connection with the RS-232 over Ethernet.

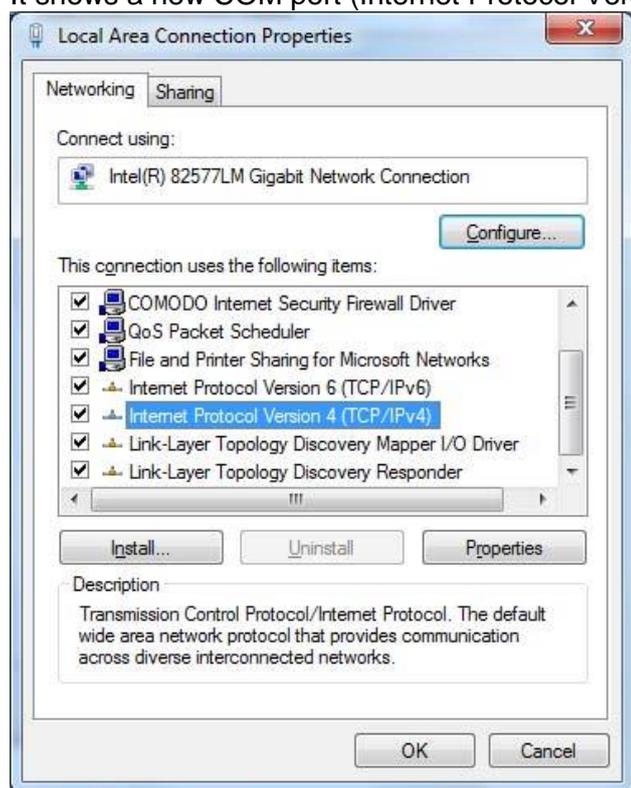
1. Click Start and go to 'Control Panel\All Control Panel Items\Network' and Sharing Center.
2. Click on 'Local Area Connection' (this is the connection where the RS-232 over Ethernet is connected). If you have not connected the RS-232 over Ethernet to your computer; or if the cable is incorrectly connected, you might not be able to see this 'Local Area Connection', so make sure the RS-232 over Ethernet is properly connected to your computer.



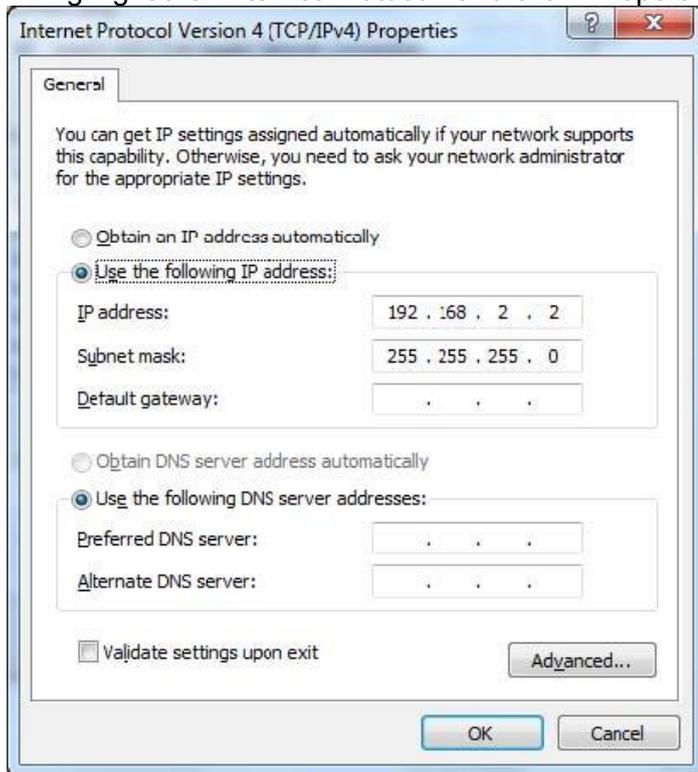
3. Click on 'Properties'



It shows a new COM port (Internet Protocol Version 4(TCP/IPv4)) has been established.



4. Highlight the "Internet Protocol" and click "Properties"



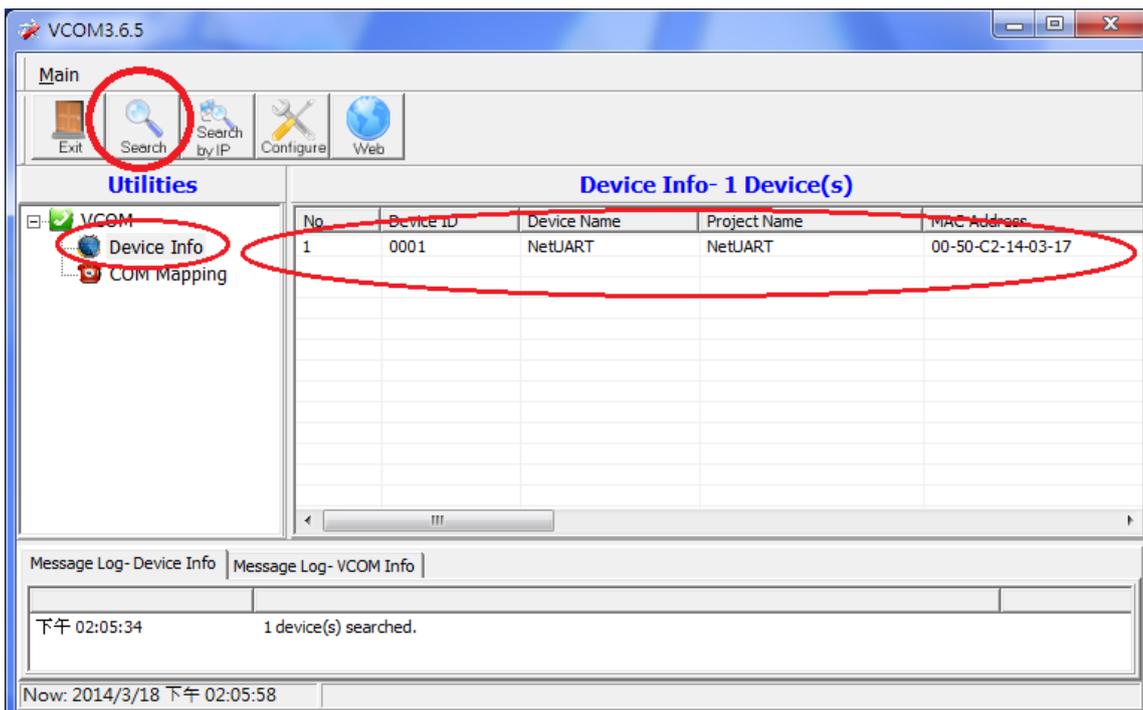
5. Enter a static IP address between 192.168.2.2 and 192.168.2.254, and the Subnet mask 255.255.255.0, and click OK. Click OK at the 'Local Area Connection Properties' and close to finish. You have now assigned a static IP address to the network connection with the RS-232 over Ethernet.

Creating a COM port with VCOM

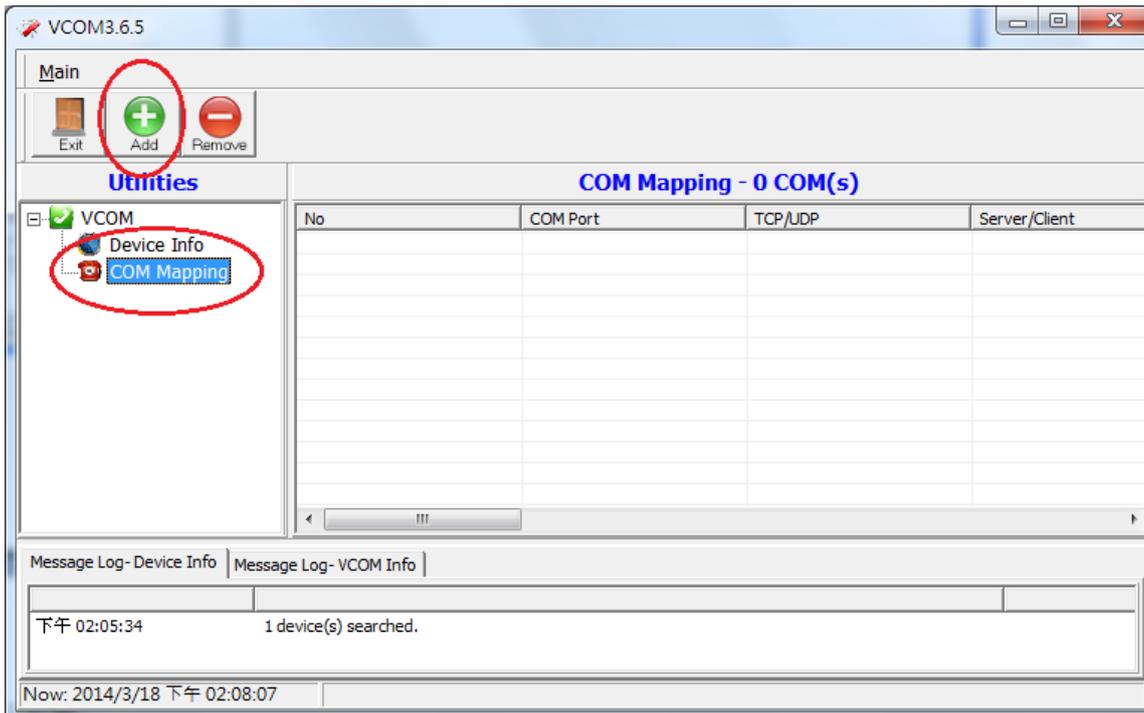
1. Double-click the VCOM shortcut to launch the application. (You may receive a firewall notification at this point of the install, please allow access to this application)



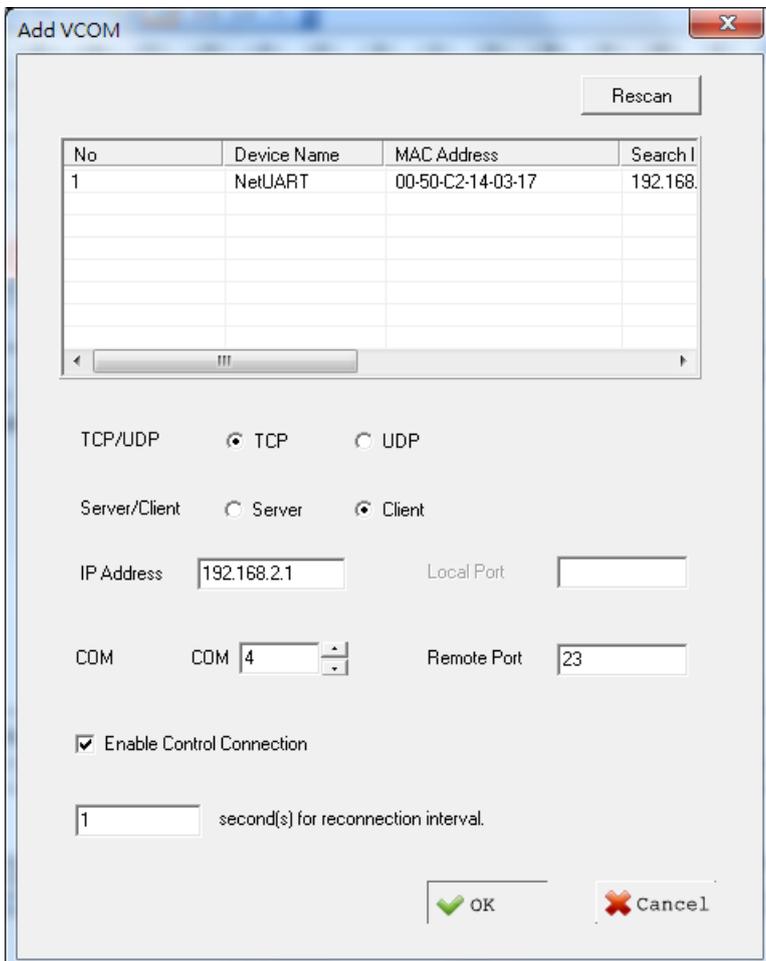
2. The RS-232 over Ethernet successfully connected to your computer with a static IP address between 192.168.2.2 and 192.168.2.254 and makes sure plug the power supply; click the 'Search' button.
 - Click the Search button in the VCOM software window to locate the device. Once VCOM found the connected RS-232 over Ethernet, it will show on line one in the Device Info window.



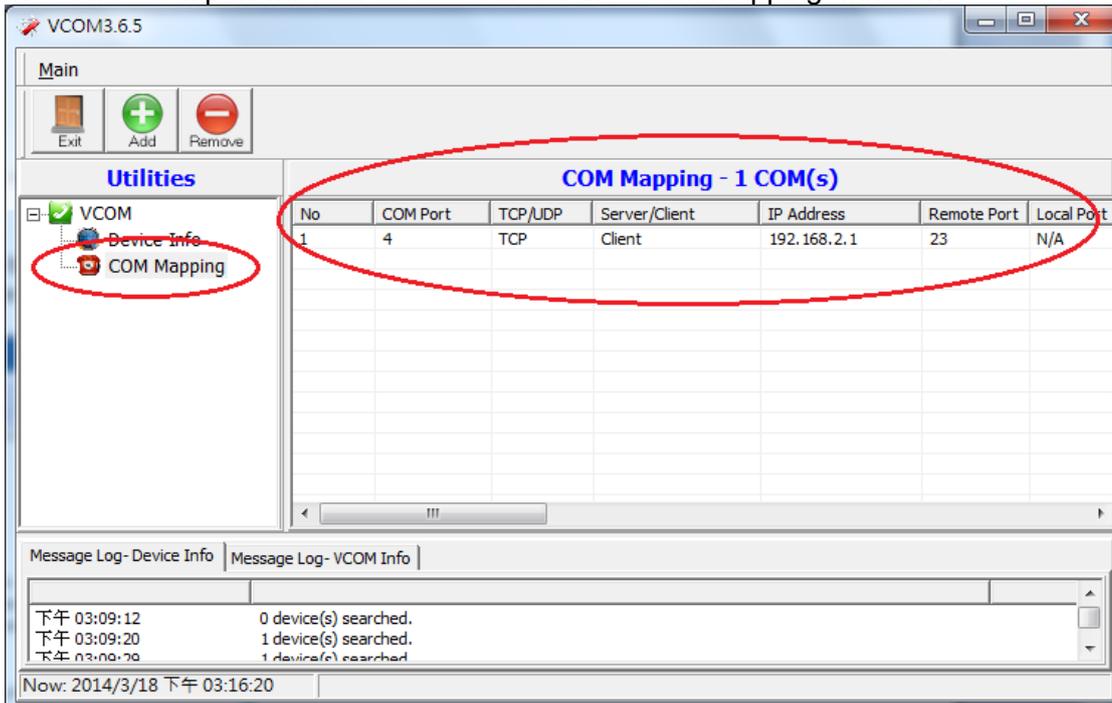
To create a COM port click 'COM Mapping' under the 'Utilities' panel and click the 'Add' button.



3. A new window opens which lists the connected RS-232 over Ethernet(s). Click on the server listed, this will bring up the information of the server in the text fields, and click 'OK'.



4. The COM port will now be listed under the 'COM Mapping' window.



5. To further check if the COM port was successfully installed go to Windows Device Manager where the COM port should be listed under 'Ports (COM & LPT)'.



- You have now successfully created a serial RS232 COM port!

Configuring the parameters

1. To configure the parameters of the RS-232 over Ethernet you can click on the 'Configure' button. A prompt pop-up will open. You may enter the Device account and Password information. Default Device account is 'admin' and password is 'system'.

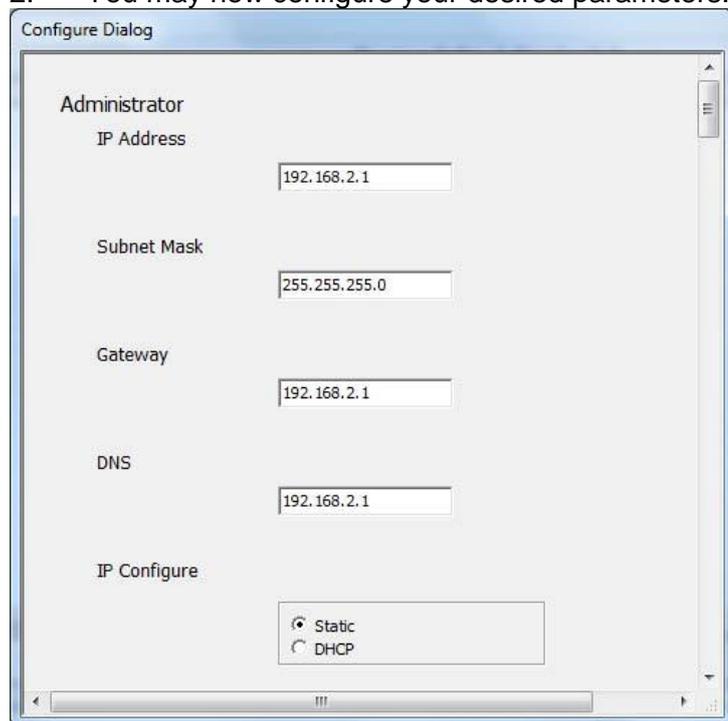
- Click OK



The 'Input Attributes' dialog box is shown with the following fields and buttons:

- Label: Please Give Account:
- Text input field: admin
- Label: Please Give Password:
- Text input field: xxxxxx
- Buttons: OK, Cancel

2. You may now configure your desired parameters.

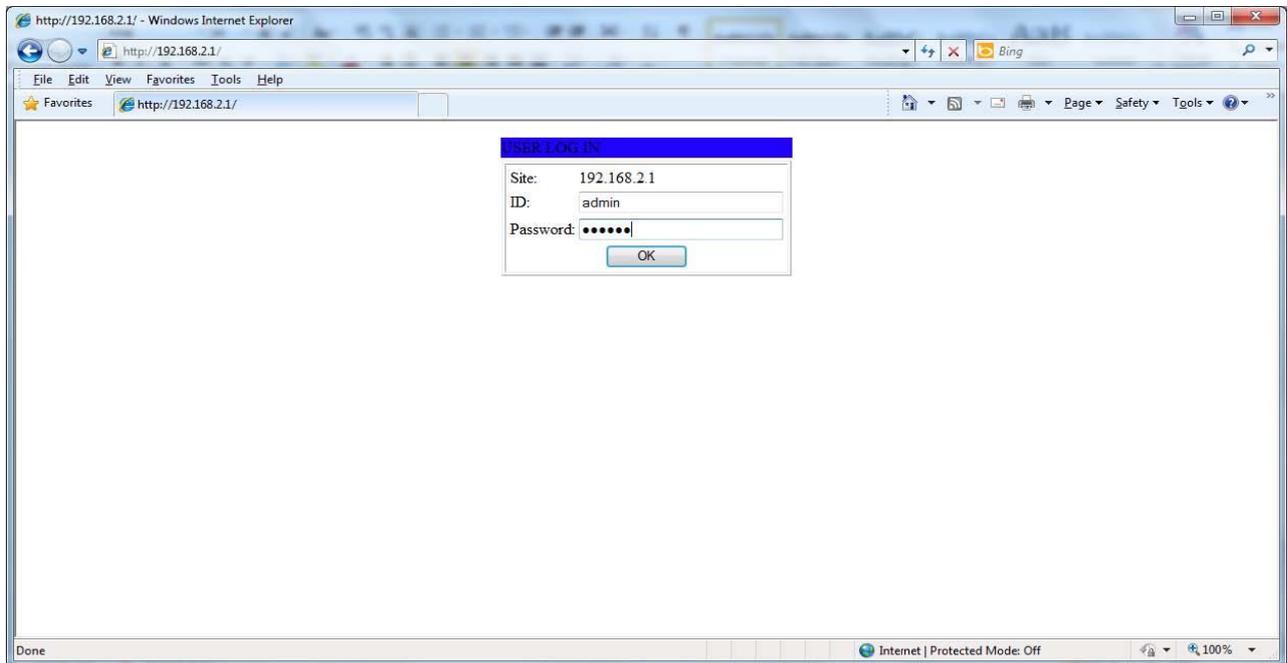


The 'Configure Dialog' box is shown with the following fields and options:

- Section: Administrator
- IP Address: 192.168.2.1
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.2.1
- DNS: 192.168.2.1
- Section: IP Configure
- Options: Static, DHCP

3. Enter the IP address you have set for the RS-232 over Ethernet device into your web browser address bar (default IP: 192.168.2.1) and you will prompt to login with your user ID and password.

- Default ID : admin
- Default Password: system



After a successful login, you will see Administrator, TCP Mode, UDP Mode, UART, and Reset Device selections in left frame of the web console – the following sections will describe their function.

- Note: Press F5 to reload

Error
Invalid Challenge Value or Challenge's Time Expire

OK

Function Introduction

1. Administrator Setting

Under the 'Administrator' heading, you will be able to set/change the device password, configure the networking parameters, display the current firmware version, load the factory defaults, and perform any future firmware upgrades.

Kernel Version	V1.43 2010/01/21
MAC Address	00:11:22:33:44:00
Nickname	NetUART
IP Setting	
IP Address	192 . 168 . 2 . 1
Subnet Mask	255 . 255 . 255 . 0
Gateway	192 . 168 . 2 . 1
IP Configure	<input checked="" type="radio"/> Static <input type="radio"/> DHCP
Password Setting	
Username	admin max:15
Password max:15
Confirm
<input type="button" value="Update"/>	
Load Default Setting to EEPROM	<input type="button" value="Load"/>

In this page, you can change login ID and Password. The RS-232 over Ethernet device supports a maximum of 15 characters for password, only alphanumeric characters are allowed ("0-9", "a-z", "A-Z").

- Press "Update" to store the data. Reset the device to take effect.

2. Version info

- Kernel Version: The installed version of the kernel.
- MAC Address: At present the device MAC Address
- Nickname: the product model name, changeable, max 15 characters

3. IP Setting

To set IP protocol info; IP Configure means using Static IP or gotten by DHCP, reset the product to take effect

Note: Reset to take new setting effect is to reload the device from the computer, not to press the "Reset" button at the device

**System Setting Saved!!
RESET to take effect**

OK

4. Password Setting

Max 15 alphabet or number characters reset the product to take effect.

Note: Reset to take new setting effect is to reload the device from the computer, not to press the “Reset” button at the device

System Setting Saved!!
RESET to take effect

OK

5. Load default setting

On this page, you can load and store the factory default settings into EEPROM. Network settings and MAC address will not be changed. Press “Load” to load default settings. Reset the device to take effect.

Load Default Setting to EEPROM

Load

6. Reset the device to take effect.

Reset to take new setting effect is to reload the device from the computer, not to press the “Reset” button at the device

System Setting Saved!!
RESET to take effect

OK

7. TCP Control

■ Telnet Setting

- 7.1. Telnet Server/Client: Currently used to determine the device is to the Telnet Server or Client.
- 7.2. Port Number: This assigns the TCP server port number that the server will listen on for connecting clients. (Only for TCP Server Mode)
When the device is Server to telnet, it is the port waiting connecting; when the device is Client, it is the port connecting externally.
- 7.3. Remote Server IP Address: when being Client, it is the IP address connecting server of the other side.
- 7.4. Client mode inactive timeout: the timeout setting for Server when TCP is operating Client mode
- 7.5. Sever mode protect timeout: the timeout setting for Client when TCP is operating Sever mode.

TCP Control

Item	Value
Telnet Server/Client	<input checked="" type="radio"/> Server <input type="radio"/> Client <input type="radio"/> Disable
Port Number	<input type="text" value="23"/>
Remote Server IP Address	<input type="text" value="210"/> <input type="text" value="200"/> <input type="text" value="181"/> <input type="text" value="102"/>
Client mode inactive timeout	<input type="text" value="20"/> minute (1~99,0=Disable)
Server mode protect timeout	<input type="text" value="60"/> minute (1~98,0=Disable,99=Can't replace)
<input type="button" value="Update"/>	

Note: When TCP Control is set to Server or Client mode, the UDP mode will be disabled automatically. When UDP mode is enabled, the TCP mode will be disabled automatically. Once you have completed making changes, press "Update" to store the data. Reset the device to take effect.

8. UDP

Status:

On TCP mode, UDP mode will be disabled automatically; On UDP mode, TCP mode will be disabled automatically.

Local Port:

In UDP mode, the Local Port will be assigned to this device. You can list the remote connection IP and Port for up to 10 remote devices. Once you have completed making changes, press "Update" to store the data. Reset the device to take effect.

Remote Address:

The remote address table allows users to set several remote site IP addresses and ports. When sending data, the device will send UDP data to the IP addresses in the table.

UDP

Item	Value																				
Status	<input type="radio"/> Enable <input checked="" type="radio"/> Disable																				
Local Port	<input type="text" value="21"/>																				
Remote Address	<table border="1"><thead><tr><th>IP</th><th>Port</th></tr></thead><tbody><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr><tr><td><input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/></td><td><input type="text" value="0"/></td></tr></tbody></table>	IP	Port	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>
	IP	Port																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																			
<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/>																				
<input type="button" value="Update"/>																					

9. UART

UART or Universal Asynchronous Receiver Transmitter refers to the 'RS-232 serial port' of the RS-232 over Ethernet device. All of the port settings are modified from this page. Once you have completed making changes, press "Update" to store the data. Reset the device to take effect.

Baud Rate:

Set the baud rate of UART interface. The RS-232 over Ethernet supports 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 and 230400bps baud rates.

Character 1 & 2

User can choose Character 1 or 2 to be delimiter. Once delimiter is on, the device will monitor all the data that UART has received which will be saved on the internal buffer of the device, and then if delimiter function is detected, the data will be sent directly to Ethernet; if not being detected, the data will be saved on the buffer of the device and overwritten when the space of the buffer is run out.

Drop Character:

To choose activating delimiter or not, if it is activated, then the delimiter received from UART will not be sent to Ethernet. Drops the delimiter character of the serial port when sending to TCP, (the receiver doesn't display the character).

Silent time:

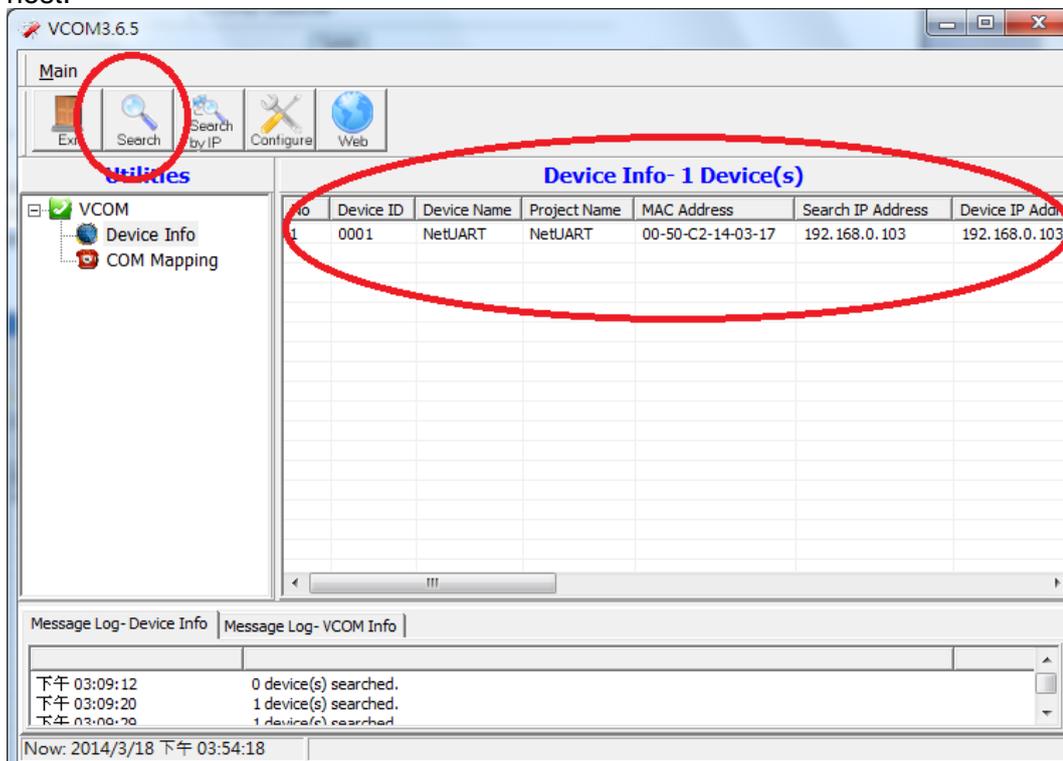
By setting Silent time, the device will not send any data to Ethernet until the set Silent time is up

UART Control

Item	Setting
Mode	RS232
Baudrate	57600
Character Bits	8
Parity Type	none
Stop Bit	1
Hardware Flow Control	hardware
Delimiter	<input type="checkbox"/> Character 1: 00, <input type="checkbox"/> Character 2: FF <input type="checkbox"/> Silent time: 5 (1~255)*200ms <input type="checkbox"/> Drop Character
<input type="button" value="Update"/>	

10. Search Device

By using VCOM, you may find the RS-232 over Ethernet device from LAN to know the IP Address and MAC Address. Since the Search function goes by MAC address but not IP address, all RS-232 over Ethernet units connected to the LAN will be located, regardless of whether or not they are part of the same subnet as the host.



NOTE:

Beware that it is not allowable to use the RS-232 over Ethernet by two computers at a time/simultaneously in same range (ex.192.168.x.1) to the network connection.

And it is compulsory to use a static IP address with the RS-232 over Ethernet instead of crossing over different ranges in network connection. (ex. 192.168.2.1 is configured as static IP address; you may not communicate data thru 192.168.3.1)

Regulatory Compliance

Disclaimer

Information in this document is subject to change without notice. The manufacturer does not make any representations or warranties (implied or otherwise) regarding the accuracy and completeness of this document and shall in no event be liable for any loss of profit or any other commercial damage, including but not limited to special, incidental, consequential, or other damages.

No part of this document may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopying, recording or information recording and retrieval systems without the express written permission of the manufacturer.

All brand names and product names used in this document are trademarks, or registered trademarks of their respective holders.

CE Certification

This equipment complies with the requirements relating to electromagnetic compatibility. It has been manufactured under the scope of RoHS compliance.

FCC Compliance Statement

This equipment generates and uses radio frequency and may cause interference to radio and television reception if not installed and used properly. This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

You are cautioned that changes or modification not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation



WEEE (Waste of Electrical and Electronic Equipment), Recycling of Electronic Products

In 2006 the European Union introduced regulations (WEEE) for the collection and recycling of all waste electrical and electronic equipment. It is no longer allowable to simply throw away electrical and electronic equipment. Instead, these products must enter the recycling process.

Each individual EU member state has implemented the WEEE regulations into national law in slightly different ways. Please follow your national law when you want to dispose of any electrical or electronic products. More details can be obtained from your national WEEE recycling agency.