

NCOM SERIAL DEVICE SERVER 1XX-M SERIES USER'S MANUAL

2018 May Edition



Titan Electronics Inc.
Web: www.titan.tw

Contents

1. INTRODUCTION	4
1.1 Key Features.....	5
1.2 Specifications	6
2. PANEL LAYOUT OF NCOM-113-M	9
3. CONNECTING THE HARDWARE	10
Step 1 – Connecting to the Network	10
Step 2 – Connecting the Power	10
Step 3 – Connecting to a Serial Device	10
3.2 Hardware Reset Button	12
3.3 Changing Serial Port Operation Mode in NCOM-113-M/NCOM-112-M	13
3.4 LED Indicators	15
3.5 RS-422/485 Termination Resistors Option for NCOM-113-M/NCOM-112-M...	16
4. CONFIGURING NCOM-113-M FOR THE FIRST TIME.....	17
4.1 Configuring Static IP Address	17
4.2 Opening the Web Console Interface of NCOM-113-M.....	18
4.3 Setting NCOM-113-M to Work in DHCP Networks.....	19
5. SETTING THE PROPER OPERATION MODE	20
5.1 Driver Mode	21
5.2 RFC2217 Server Mode	22
5.3 RFC2217 Client Mode	23
5.4 Pair Connection Mode	24
5.5 TCP Raw Server Mode.....	25
5.6 TCP Raw Client Mode.....	26
5.7 UDP Mode	27
6. WEB CONSOLE CONFIGURATION INTERFACE	29
6.1 Port 1 Settings.....	30
6.2 System Settings.....	32
6.3 Firmware Update	34
6.4 Change Password	35
6.5 Accessible IP Settings	37
6.6 Reboot.....	39
7. NCOM VIRTUAL SERIAL PORT MANAGER AND DRIVER INSTALLATION	40
7.1 NCOM Virtual Serial Port Manager and Virtual Serial Port Driver	40
7.2 Installing NCOM Virtual Serial Port Manager	41

8. RUNNING NCOM VIRTUAL SERIAL PORT MANAGER	44
8.1 NCOM Virtual Serial Port Manager Functions	45
8.2 Manually Add Virtual Serial Port for NCOM Devices	46
8.3 Manually Edit Existing Virtual Serial COM ports for NCOM Devices	48
8.4 Manually Remove Existing Virtual Serial COM Ports for NCOM Devices	49
8.5 Refreshing Virtual Serial Port Information	50
8.6 Automatically Search for NCOM Devices.....	51
8.6.1 Selecting an NCOM Device to Read Parameters	53
8.6.2 Installing Virtual Serial Port Driver for NCOM Devices.....	54
8.6.3 Manually Search for NCOM Devices.....	56
8.6.4 Opening the Web Console Interface	57
8.6.5 Rebooting NCOM Devices.....	58
8.6.6 Restoring to Factory Defaults	59
8.6.7 Firmware Update Tool	60
8.7 Configuring NCOM Devices.....	63
8.7.1 Selecting an NCOM Device to Configure Parameters.....	65
8.7.2 Device Status.....	66
8.7.3 COM Port Status	69
8.7.4 Device Control.....	74
8.7.5 Importing/Exporting Configuration Settings	83
9. NCOM VIRTUAL SERIAL PORT MANAGER AND DRIVER UNINSTALLATION	87
Uninstalling NCOM Virtual Serial Port Manager and Virtual COM Port Driver	87

The computer programs provided with the hardware are supplied under a license. The software provided should be used only with the NCOM series hardware designed and manufactured by TITAN Electronics Inc.

Trademarks

TITAN, NCOM and the logos are registered trademarks of TITAN Electronics Inc. in Taiwan. Microsoft, Windows, Windows XP, Windows Vista, Windows Server, Windows 7, Windows 8, Windows 10 are trademarks of Microsoft Corporation. All other trademarks and brands are property of their respective owners.

Copyright

Copyright © TITAN Electronics Inc. 2016. All rights are reserved. Reproduction of the manual and software without permission is prohibited.

Disclaimer

TITAN Electronics Inc. provides this document and computer programs “as is” without warranty of any kind, either expressed or implied, including, but not limited to, its particular purpose. TITAN Electronics Inc. reserves the right to make improvements and changes to this user manual, or to the products, or the computer programs described in this manual, at any time.

Information provided in this manual is intended to be accurate and reliable. However, TITAN Electronics Inc. assumes no responsibility for its use, or for any infringements on the rights of third parties that may result from its use.

This product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

1. INTRODUCTION

References to NCOM-113-M in this document represent NCOM-113-M, NCOM-112-M and NCOM-111-M, unless stated otherwise.

NCOM-113-M is a network-based serial device server. It is designed to control your serial devices located virtually anywhere through a TCP/IP or UDP/IP network connection. The serial device server can map TCP/IP connections and UDP broadcasts to a virtual serial port. Applications include accessing a faraway device for functions such as remote control and data transmission. NCOM-113-M serves as a transparent virtual serial port without limitations on operating systems and distances. The virtual serial port redirection uses the protocol known as RFC2217.

NCOM-113-M supports several operation modes, including Driver mode, RFC2217 Server/Client mode, Pair Connection mode, TCP Server/Client mode and UDP mode. It also supports Windows virtual serial port driver, allowing you to add a virtual serial port in your Windows system to work over a TCP/IP network. The virtual serial port functions as a native Windows COM port and is compatible with Windows serial communication applications. It is installed in the Device Manager of the operating system. This in turn will allow communications with the connected serial device in the same manner as a device physically connected to the COM port on a PC. The serial port supports high serial speeds up to 921.6Kbps in RS-232 for NCOM-111-M, RS-422/485 for NCOM-112-M, and RS-232/422/485 for NCOM-113-M only.

NCOM-113-M serial device server supports automatic IP configuration protocol (DHCP) and fixed static IP configuration via the handy web browser console. NCOM-113-M provides a utility software for Windows, called NCOM Virtual Serial Port Manager. This program can detect, manage and configure NCOM serial device server in your network.

This manual covers three different models of one-port serial device server:

NCOM-111-M	RS-232
NCOM-112-M	RS-422/485
NCOM-113-M	RS-232/422/485

In general, the software installation and operation is the same on all models, except for the different software settings for the configuration of serial operation modes on NCOM-111-M and NCOM-112-M.

1.1 Key Features

The NCOM-113-M has the following features:

- Adds a virtual serial COM port via network connection
- NCOM-113-M fully supports the “COM Port Control” protocol known as RFC2217
- Supports network protocols such as TCP and UDP client/server
- Serial port operation mode can be easily changed via our Windows utility software or the web console interface
- Firmware upgradable for future firmware revisions
- Supports virtual serial port driver for Windows OS (Windows XP up to Windows 10)
- Supports pair connection mode for connecting two serial device servers over a network without a PC
- Easy-to-use Windows utility software for easy configuration and installation
- 10/100Mbps Ethernet with auto-detection
- Configuration via web console interface or utility software
- Windows utility software automatically finds NCOM devices on the network
- Supports “reset” button for system reset and restoring to default settings
- Data rates: 300bps to 921.6Kbps
- Auto transmit buffer control for 2-wire RS-485 half-duplex operation (NCOM-113-M and NCOM-112-M only)
- Termination resistors installed on-board (NCOM-113-M and NCOM-112-M only)
- Supported RS-232 signals: DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS (NCOM-113-M and NCOM-111-M only)
- Supported RS-422, RS-485 4-wire signals: TxD-, TxD+, RxD+, RxD- (NCOM-113-M and NCOM-112-M only)
- Supported RS-485 2-wire signals: data-, data+ (NCOM-113-M and NCOM-112-M only)
- LEDs indicating Ethernet port’s link and speed statuses
- LEDs indicating serial port’s TxD and RxD statuses
- LEDs indicating serial port’s operation mode
- Virtual serial port drivers for Windows 10, 8.1, 8, 7, Vista, 2003, XP
- Built-in 15kV ESD protection for all serial signals

1.2 Specifications

The tables below show the specifications of the one-port serial device server:

LAN	
Ethernet	10/100Mbps
Connector	RJ-45 connector
Protection	Built-in 1.5kV magnetic isolation

NCOM-113-M Serial Interface	
Interface	RS-232/422/485
No. of Ports	One
Connector	DB9 male connector
Max. Speed	921.6kbps for serial data transmission & reception
RS-232 Signals	DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS
RS-422 Signals	TxD-, TxD+, RxD+, RxD-, GND
RS-485 Signals	4-wire TxD-, TxD+, RxD+, RxD-, GND 2-wire Data-, Data+, GND
Protection	15kV ESD for all signals
RS-485 Data Direction	Automatic RS-485 direction control

NCOM-112-M Serial Interface	
Interface	RS-422/485
No. of Ports	One
Connector	DB-9 male connector
Max. Speed	921.6kbps for serial data transmission & reception
RS-422 Signals	TxD-, TxD+, RxD+, RxD-, GND
RS-485 Signals	4-wire TxD-, TxD+, RxD+, RxD-, GND 2-wire Data-, Data+, GND
Protection	15kV ESD for all signals
RS-485 Data Direction	Automatic RS-485 direction control

NCOM-111-M Serial Interface	
Interface	RS-232
No. of Ports	One
Connector	DB-9 male connector
Max. Speed	921.6kbps for serial data transmission & reception
RS-232 Signals	DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS
Protection	15kV ESD for all signals

Serial Communication Parameters	
Data Bits	5, 6, 7, 8
Parity	None, Odd, Even, Mark, Space
Stop Bit	1, 1.5, 2
Flow Control	Hardware (RTS, CTS)

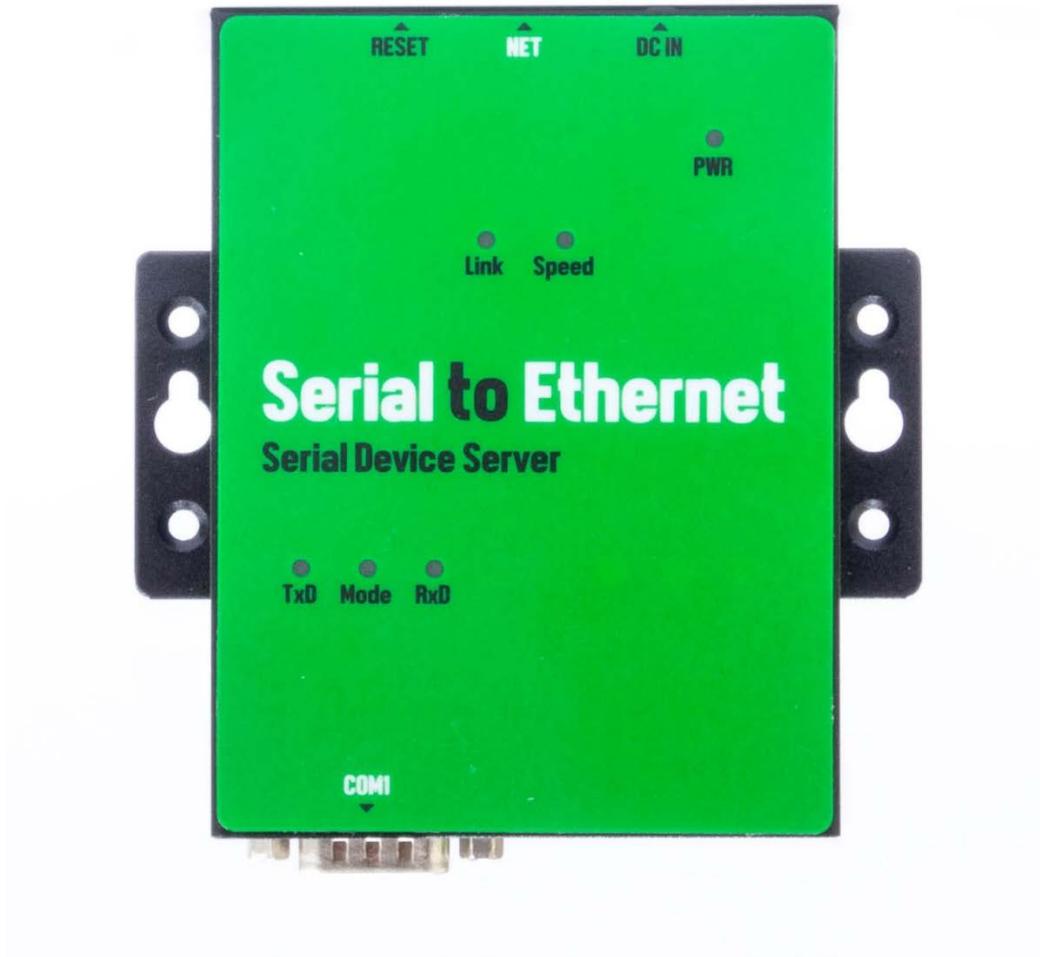
Software Features	
Protocols	UPnP, ICMP, IP, TCP, UDP, DHCP, HTTP
Utility	NCOM management tool for Windows OS
OS Driver Support	Virtual serial port driver for Windows OS
Configuration	Web console, Windows utility

Power Requirement	
Power Input	9VDC to 48VDC
Power Consumption	NCOM-113-M: 120mA@12VDC, 48mA@48VDC NCOM-112-M: 115mA@12VDC, 42mA@48VDC NCOM-111-M: 100mA@12VDC, 38mA@48VDC

Environment	
Operating Temperature	0°C to 55°C (32°F to 131°F)
Storage Temperature	-20°C to 75°C (-4°F to 167°F)
Humidity	5% to 95% RH
Safety Approvals	CE, FCC

Mechanical	
Casing	Metal
Dimensions	95 × 71 × 22 mm (L × W × H) 100 × 91 × 22 mm with DB-9 connector and ears (L × W × H)
Weight	205g

2. PANEL LAYOUT OF NCOM-113-M



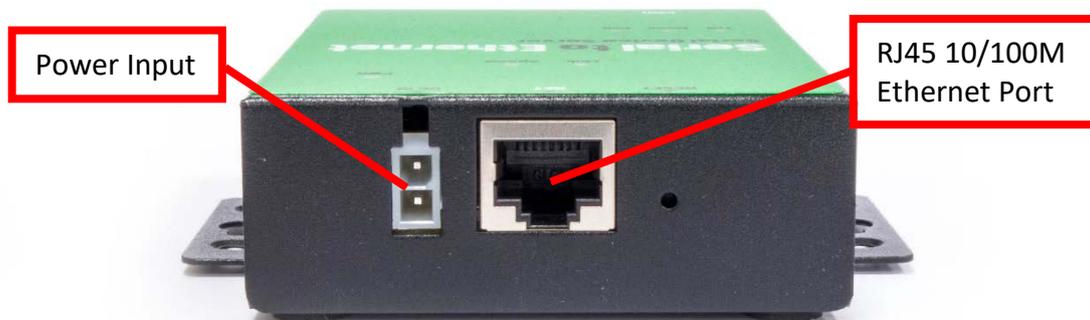
Note: The layouts of NCOM-113-M are the same as the ones for NCOM-112-M and NCOM-111-M

3. CONNECTING THE HARDWARE

Before connecting the NCOM serial device server for the first time, you may want to follow these instructions for testing purposes. We will describe how to connect to the network, power, your serial devices, and also state the functions of the LED indicators.

Step 1 – Connecting to the Network

First, connect an Ethernet cable to NCOM’s Ethernet port. Once the Ethernet cable is connected, connect the other end of the cable to your network. This can be a free Ethernet port on your DSL router, Ethernet hub/switch, or 802.11n router/base station. If you do not have a network, you can connect NCOM directly to the Ethernet port on your computer.

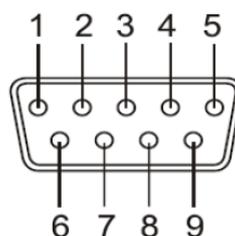


Step 2 – Connecting the Power

Connect the included power supply to NCOM’s power input connector. Once the NCOM is powered, the “PWR” LED turns ON. After a few seconds, the “PWR” LED will flash two times to indicate that the NCOM serial device server is ready.

Step 3 – Connecting to a Serial Device

Connect the serial data cable between NCOM and the serial device. The NCOM-111-M’s serial port provides RS-232, the NCOM-112-M provides RS-422/485 and the NCOM-113-M provides RS-232/422/485 interface for data transmission. The port uses a standard male DB9 pin assignment.



DB9 Male connector pin numbers

3.1 Serial Port Pin-Out Information of DB9 Connector

Pin Number	Pin Type	Description
1	Input	DCD Data Carrier Detect
2	Input	RxD Receive Data
3	Output	TxD Transmit Data
4	Output	DTR Data Terminal Ready
5	Ground	GND Signal Ground
6	Input	DSR Data Set Ready
7	Output	RTS Request To Send
8	Input	CTS Clear To Send

RS-232 pin-out for DB9 connector

Pin Number	Pin Type	Description
1	Output	TxD- Transmit Data, negative polarity
2	Output	TxD+ Transmit Data, positive polarity
3	Input	RxD+ Receive Data, positive polarity
4	Input	RxD- Receive Data, negative polarity
5	Ground	GND Signal Ground

RS-422/485 full duplex pin-out for DB9 connector

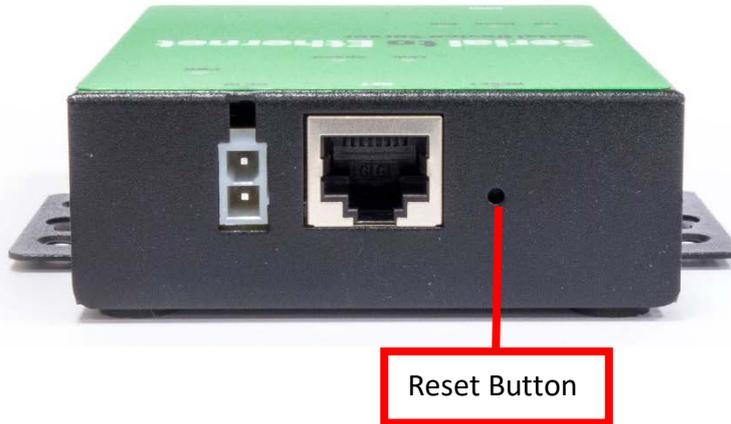
Pin Number	Pin Type	Description
1	Output/Input	Data- Transmit/Receive Data, negative polarity
2	Output/Input	Data+ Transmit/Receive Data, positive polarity
5	Ground	GND Signal Ground

RS-485 half duplex pin-out for DB9 connector

3.2 Hardware Reset Button

NCOM-113-M has a hardware reset button for resetting the device. When the hardware reset button is pressed for a short duration, NCOM's power will be reset.

The hardware reset button can be used to restore all options to factory default states by pressing it until the "PWR" LED flashes.



3.3 Changing Serial Port Operation Mode in NCOM-113-M/NCOM-112-M

Serial port operation mode of NCOM-113-M/NCOM-112-M can be easily changed via software. This can be done using our Windows utility software or the web console interface.

The web console interface is used to configure the serial device server. Open any web browser and enter the device's IP address in the address bar to access the firmware's "HOME" page.

Under the firmware's "HOME" page, select "SERIAL SETTINGS" under "Port 1 Settings". Under "Mode", select the proper serial port operation mode, check the "Make these the default settings" box and click "Submit" to set your device into the proper serial port operation mode.

The screenshot shows the NCOM web console interface. The top header features the TITAN logo and the NCOM logo. The left navigation menu includes: HOME, PORT 1 SETTINGS (with SERIAL SETTINGS highlighted), NETWORK SETTINGS, SYSTEM SETTINGS, FIRMWARE UPDATE, CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The main content area is titled 'Status' and displays the following information:

Server Name:	NCOM_410789456
Product Name:	NCOM-113-M
Serial Number:	410789456
Firmware Revision:	1.0
IP Address:	192.168.1.125
MAC Address:	00-04-D9-80-78-87
Uptime:	0 days 00:09:48

Below the status section is the 'Port 1 Serial Settings' section. It includes a warning: 'The current settings for port 2 may be changed using the form below. To make the new settings apply each time the NCOM is reset, ensure that "Make these the default settings" is checked before pressing the "Apply Changes" button. If this control is not checked, the changes are applied to the port but the existing defaults are used whenever the module is next reset.'

The settings form includes the following fields:

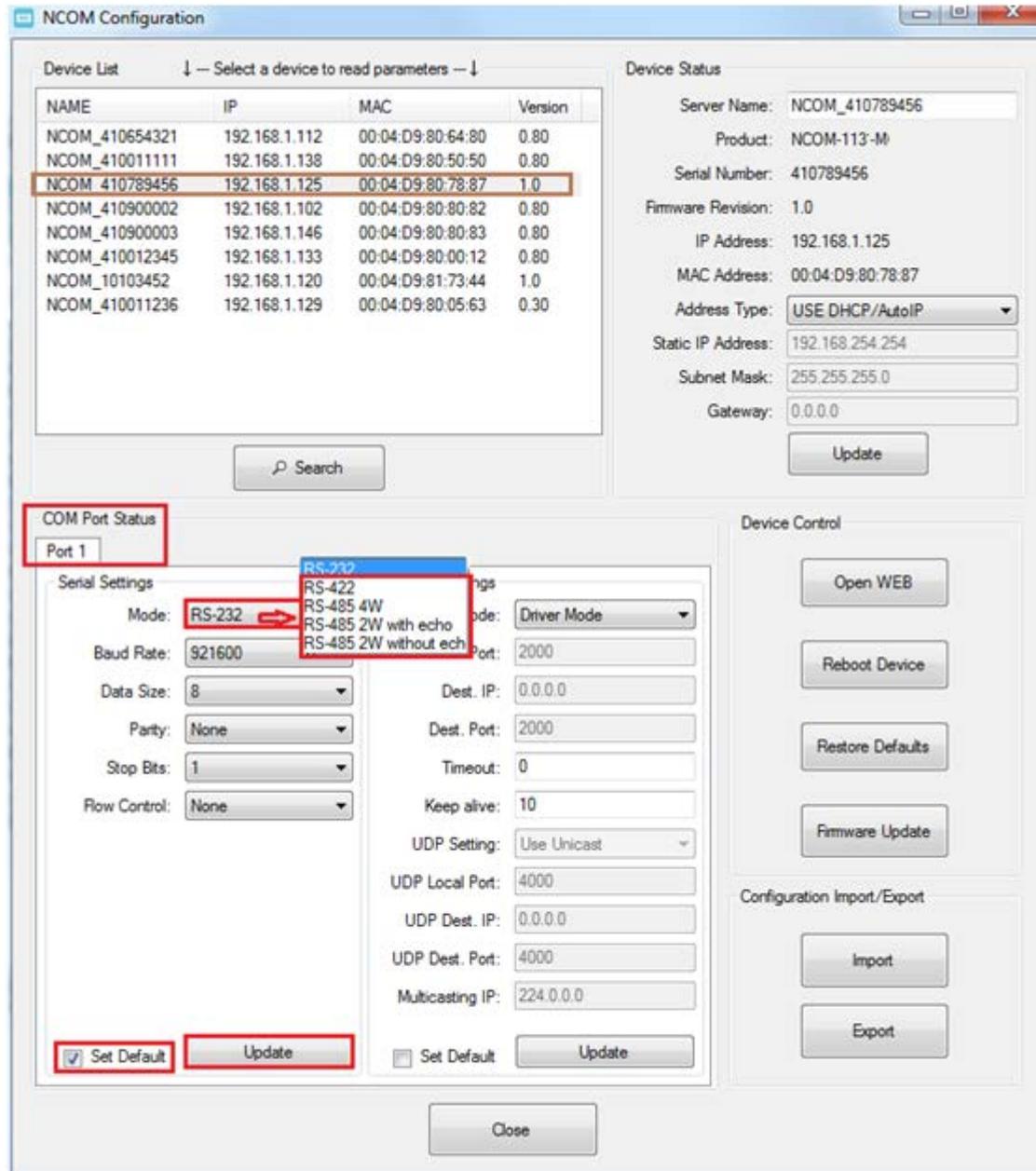
Mode:	Current: RS422	Updated: RS232
Baud Rate:	921600 bits/second	921600 bits/S
Data Size:	8 bits/character	8 bits/character
Parity:	None	None
Stop Bits:	1 bit(s)	1 bit(s)
Flow Control:	None	None

At the bottom of the form, there is a 'Submit' button and a checked checkbox labeled 'Make these the default settings'.

Copyright © 2015-2016 TITAN Electronics Inc. All Rights Reserved.

The serial port operation mode can also be configured with our Windows utility software, NCOM Virtual Serial Port Manager.

After running NCOM Virtual Serial Port Manager, click on “Configuration” to enter the control menu page. Select an attached device to configure the virtual serial port parameters. You will find “Device Status”, “COM Port Status”, “Device Control” and “Configuration Import/Export” on the main window of NCOM Configuration.



Under the “COM Port Status” window, select “Port 1”. Under “Mode”, select the proper serial port operation mode, then check “Set Default” and click “Update” to set your NCOM-113-M/NCOM-112-M in the proper serial port operation mode.

3.4 LED Indicators

The NCOM-113-M has 6 LED indicators, as described in the following table:

LED Name	LED Color	LED Function
PWR	Red	Steady on: Power is on and functioning normally. Steady off: Power is off. Flashes two times to indicate the device is ready.
Link	Yellow	Steady on: The Ethernet link has established. Steady off: Ethernet cable is disconnected. Blinking: Ethernet data transmission is occurring.
Speed	Green	Steady on: The device is connected to a 100M Ethernet connection. Steady off: The device is connected to a 10M Ethernet connection.
Tx	Green	Blinking: The serial port is transmitting data.
Rx	Yellow	Blinking: The serial port is receiving data.
Mode	Green Red	Steady off: The port is working in RS-232 mode. Green LED steady on: The port is working in RS-422 or RS-485 full duplex (4-wire) mode. Red LED Steady on: The port is working in RS-485 half duplex (2-wire) mode.

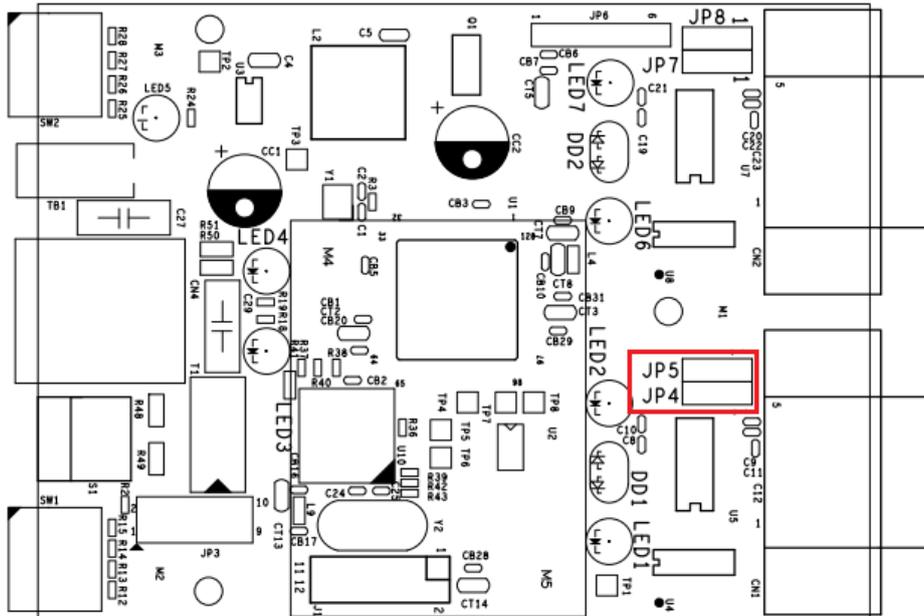
3.5 RS-422/485 Termination Resistors Option for NCOM-113-M/NCOM-112-M

In some critical environments, when transmitted RS-422/485 signals arrive at the end of a cable, they are reflected. This causes the signals to travel on the cable more than once, which is called ringing. This can cause false reading of transmitted data. For long cables, termination resistors are required. These increase the damping in order to reduce reflections. The value of the termination resistor must match the impedance of the cable, which is typically 120Ω. Generally, this must be done in the cabling, since this depends on the installation of connections. Before applying the option, check your cable specification for proper impedance matching.

Inside NCOM-113-M/NCOM-112-M, there are two 3-pin header blocks (JP4, JP5) for jumper caps to enable TxD+/-, RxD+/- 120Ω termination resistors. You will need to open up the case and set the jumper settings for RS-422 mode or RS-485 mode, as per the requirements of your application.

Settings are listed as follows:

Jumper			Function
JP4	1-2	Enable	Enable TxD+/- 120Ω termination resistor.
	2-3	Disable	Disable TxD+/- 120Ω termination resistor.
JP5	1-2	Enable	Enable RxD+/- 120Ω termination resistor.
	2-3	Disable	Disable RxD+/- 120Ω termination resistor.



The NCOM serial device server hardware installation is now complete. Please proceed to the next step to start the first time configuration of NCOM-113-M.

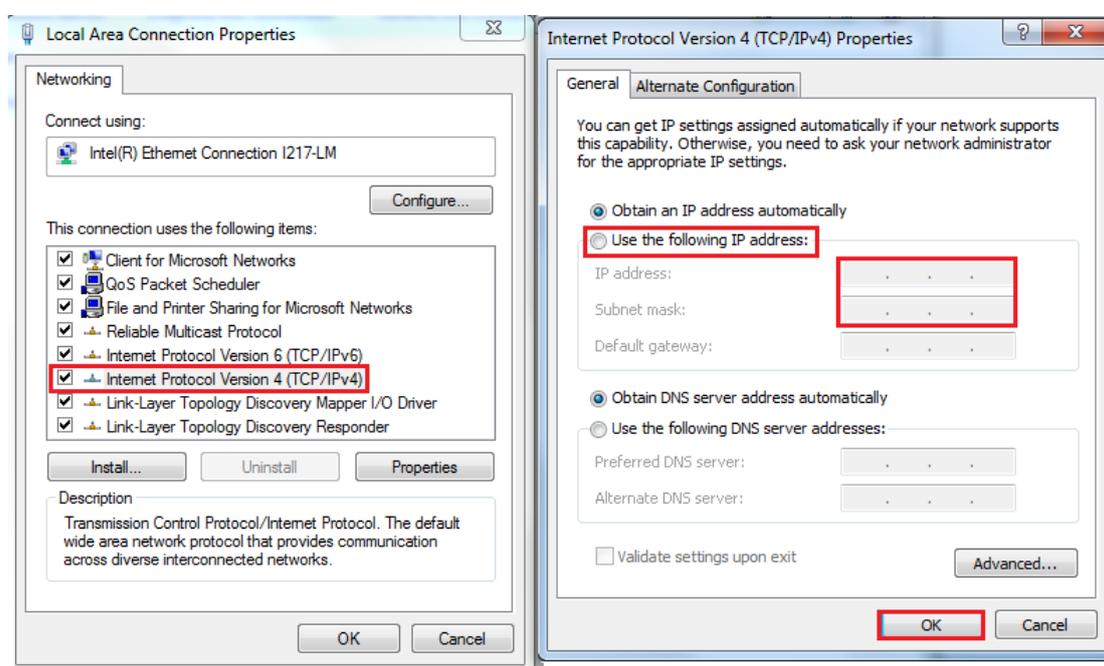
4. CONFIGURING NCOM-113-M FOR THE FIRST TIME

4.1 Configuring Static IP Address

When setting up your NCOM-113-M for the first time, it is important to configure the IP address in order to operate in your network. The NCOM-113-M products are configured with the following default private IP address:

Default private IP address: 192.168.254.254

You need to set up your client computer to static IP address manually. Please go to “Internet Protocol Version 4 (TCP/IPv4)” under “Local Area Connection Properties” to change the IP address to a static IP address. (This can be found from Start → Settings → Control Panel → Network and Internet → Network and Sharing Center → Change Adapter Settings → Local Area Connection → Properties).

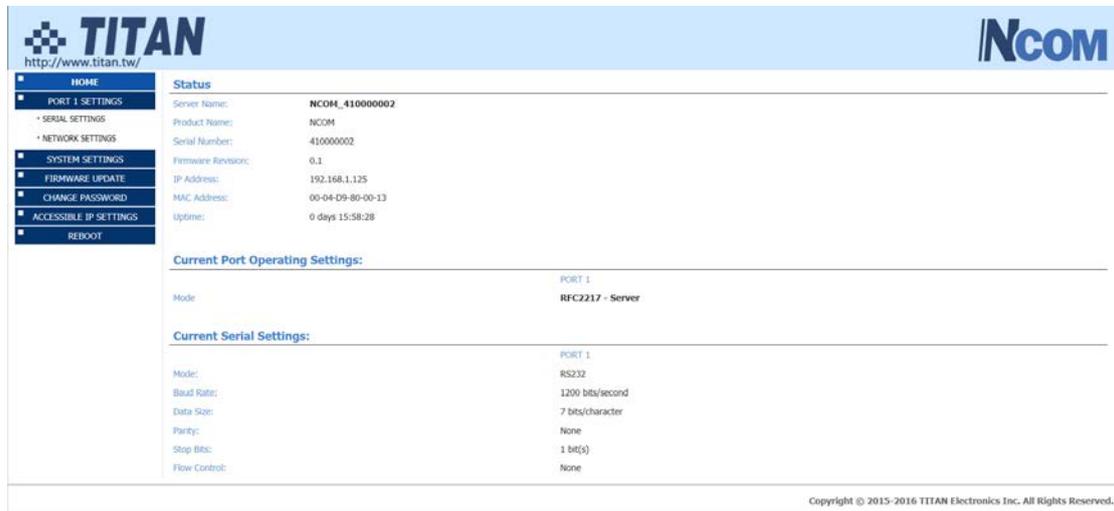


Under “Internet Protocol Version 4 (TCP/IPv4)”, select “Use the following IP address:” and enter the static IP address 192.168.254.XXX (such as 192.168.254.253) and Subnet mask (such as 255.255.255.0) then click “OK” to set your client computer to static IP address.

After setting your client computer to a static IP address and connecting to NCOM-113-M, you can configure NCOM-113-M via its web console interface.

4.2 Opening the Web Console Interface of NCOM-113-M

NCOM-113-M offers a web console interface to configure the serial device server. Open any web browser and enter “192.168.254.254” in the address bar to access the “HOME” page of NCOM-113-M’s firmware.



The screenshot displays the web console interface for the NCOM-113-M device. The header includes the TITAN logo and the URL <http://www.titan.tw/> on the left, and the NCOM logo on the right. A navigation menu on the left lists options: HOME, PORT 1 SETTINGS, SERIAL SETTINGS, NETWORK SETTINGS, SYSTEM SETTINGS, FIRMWARE UPDATE, CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The main content area is titled "Status" and lists the following information:

Server Name:	NCOM_410000002
Product Name:	NCOM
Serial Number:	410000002
Firmware Revision:	0.1
IP Address:	192.168.1.125
MAC Address:	00-04-09-80-00-13
Uptime:	0 days 15:58:28

Below the status information, there are two sections for settings:

Current Port Operating Settings:

Mode:	PORT 1 RFC2217 - Server
-------	----------------------------

Current Serial Settings:

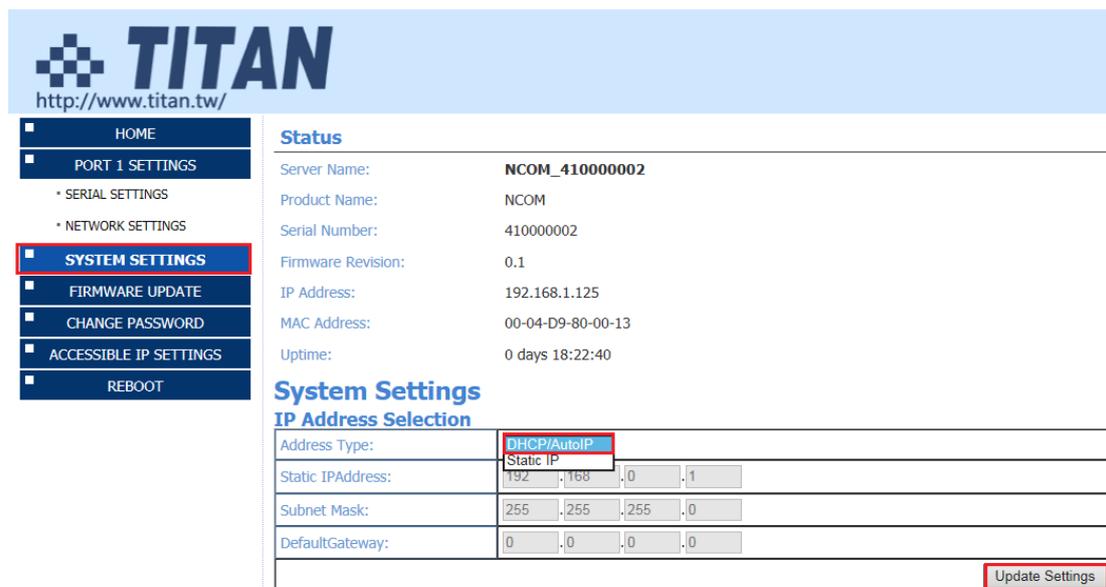
Mode:	PORT 1 RS232
Baud Rate:	1200 bits/second
Data Size:	7 bits/character
Parity:	None
Stop Bits:	1 bit(s)
Flow Control:	None

At the bottom right of the page, there is a copyright notice: "Copyright © 2015-2016 TITAN Electronics Inc. All Rights Reserved."

4.3 Setting NCOM-113-M to Work in DHCP Networks

Many networks are DHCP networks, which assign IP addresses for client computers and NCOM-113-M automatically, in which case you would need to set the NCOM-113-M's IP address to DHCP/AutoIP mode.

Under the "HOME" page of NCOM-113-M's firmware, select "SYSTEM SETTINGS". Under "Address Type:", select "DHCP/AutoIP" and click "Update Settings". After clicking "OK", NCOM-113-M will be set to DHCP mode.



The screenshot displays the NCOM-113-M firmware web interface. The top header features the TITAN logo and the URL <http://www.titan.tw/>. A left-hand navigation menu includes options: HOME, PORT 1 SETTINGS, SERIAL SETTINGS, NETWORK SETTINGS, SYSTEM SETTINGS (highlighted with a red box), FIRMWARE UPDATE, CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The main content area is titled "Status" and lists the following information:

Server Name:	NCOM_41000002
Product Name:	NCOM
Serial Number:	41000002
Firmware Revision:	0.1
IP Address:	192.168.1.125
MAC Address:	00-04-D9-80-00-13
Uptime:	0 days 18:22:40

Below the status information is the "System Settings" section, specifically "IP Address Selection". It contains a table with the following fields:

Address Type:	<input checked="" type="radio"/> DHCP/AutoIP
	<input type="radio"/> Static IP
Static IP Address:	192 .168 .0 .1
Subnet Mask:	255 .255 .255 .0
Default Gateway:	0 .0 .0 .0

An "Update Settings" button is located at the bottom right of the IP Address Selection section, also highlighted with a red box.

5. SETTING THE PROPER OPERATION MODE

The NCOM-113-M provides various operation modes, including Driver Mode, RFC2217 Server Mode, RFC2217 Client Mode, Pair Connection Master Mode, Pair Connection Slave Mode, TCP Raw Server Mode, TCP Raw Client Mode and UDP Mode. You need to choose the proper operation mode to control your serial devices located virtually anywhere through a network connection.

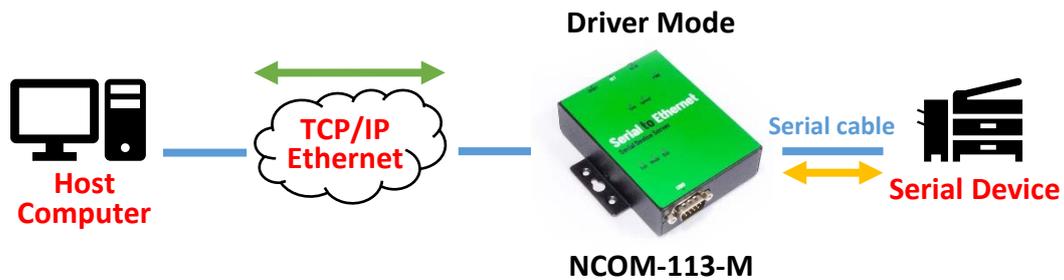
Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select the proper operation mode, check the “Make these the default settings” box and click “Apply Changes” to set your NCOM-113-M in the proper operation mode.

The screenshot displays the NCOM-113-M firmware web interface. The top navigation bar includes the TITAN logo and the URL <http://www.titan.tw/>, along with the NCOM logo. The left sidebar contains a menu with options: HOME, PORT 1 MODE SETTINGS, SERIAL SETTINGS, NETWORK SETTINGS (highlighted), SYSTEM SETTINGS, FIRMWARE UPDATE, CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The main content area is titled "Status" and shows device information: Server Name: NCOM_41000002, Product Name: NCOM, Serial Number: 41000002, Firmware Revision: 0.1, IP Address: 192.168.1.125, MAC Address: 00-04-09-80-00-13, and Uptime: 0 days 19:17:46. Below this is the "Port 1 Mode Settings" section, which includes a "Settings:" heading and a note: "The current settings for port 1 may be changed using the form below. To make changes are applied to the port but the existing defaults are used whenever the...". The "Mode" dropdown menu is open, showing a list of options: Driver Mode, RFC2217 - Server, RFC2217 - Client, Pair Connection - Master, Pair Connection - Slave, TCP Raw - Server, TCP Raw - Client, and UDP. The "Driver Mode" option is highlighted with a red box. Below the mode list, there is a "Timeout:" field set to "10 min" and a "Keep alive time" field. At the bottom right, there is an "Updated:" section with input fields for "seconds" (set to 0) and "min" (set to 10), and a checked checkbox for "Make these the default settings." and an "Apply Changes" button.

Copyright © 2015-2016 TITAN Electronics Inc. All Rights Reserved.

5.1 Driver Mode

Driver mode uses a virtual serial redirection driver installed on Windows systems. The virtual serial redirection driver establishes a transparent connection between host computers and serial devices. This allows users to communicate using serial hardware and serial communication software, with the virtual serial port acting as a native Windows COM port compatible with Windows serial communication applications.

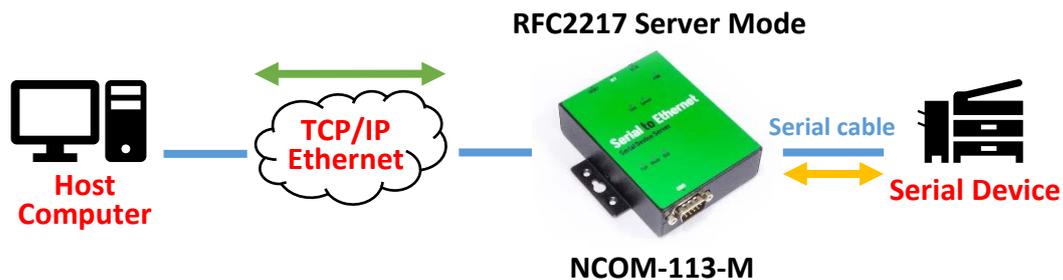


Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select “Driver Mode” and check the “Make these the default settings” box and click “Apply Changes” to set your NCOM-113-M into Driver Mode.

Mode	<input type="text" value="Driver Mode"/>		
		Current	Updated
Timeout:		0 seconds	<input type="text" value="0"/> seconds (< 256, 0 for no timeout)
Keep alive time		10 min	<input type="text" value="10"/> min (0 ~ 99)
		<input type="button" value="Apply Changes"/>	<input checked="" type="checkbox"/> Make these the default settings.

5.2 RFC2217 Server Mode

RFC2217 Server Mode is similar to Driver Mode, which also uses a virtual serial redirection driver to establish a transparent connection between host computers and serial devices. The RFC2217 Mode defines general COM port control options based on the standard Telnet protocol, which allows users to use anything that supports RFC2217 protocol's virtual serial redirection driver (such as com0com + com2tcp for Windows OS and microcom for Linux OS). The virtual serial port functions as a native COM port.

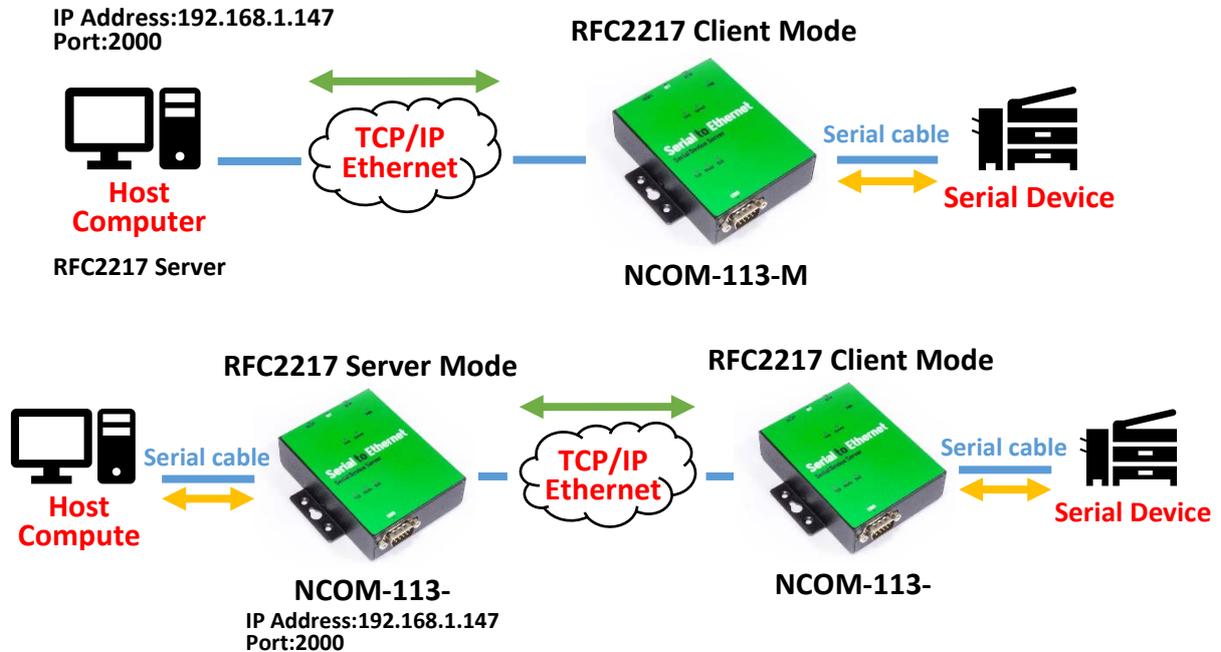


Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select “RFC2217-Server” and check the “Make these the default settings” box and click “Apply Changes” to set your NCOM-113-M into RFC2217 Server Mode.

Mode	<input type="text" value="RFC2217 - Server"/>	Current	Updated
Timeout:		0 seconds	<input type="text" value="0"/> seconds (< 256, 0 for no timeout)
Keep alive time		10 min	<input type="text" value="10"/> min (0 ~ 99)
		<input type="button" value="Apply Changes"/>	<input checked="" type="checkbox"/> Make these the default settings.

5.3 RFC2217 Client Mode

In RFC2217 Client Mode, NCOM-113-M can establish a TCP connection with a pre-determined host computer or a serial device server working in RFC2217 Server Mode. You need to define the IP address (telnet server's IP) to establish a TCP connection with a pre-determined host computer or a serial device server.

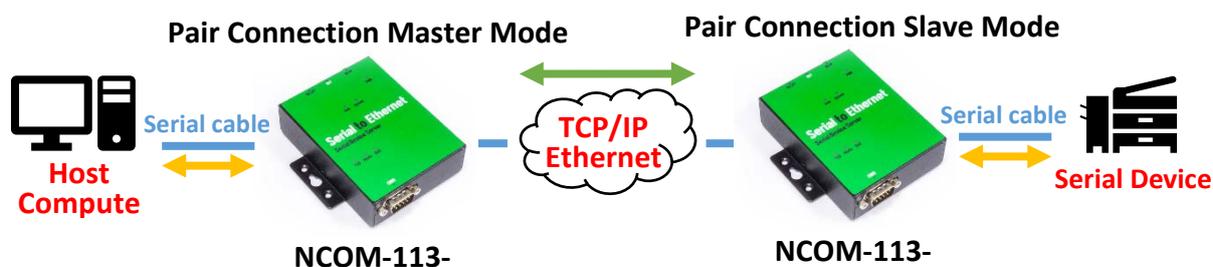


Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select “RFC2217-Client” and type “Telnet Server’s IP” and “Port” respectively (e.g. 192.168.1.147 Port: 2000) to establish a TCP connection with a pre-determined host computer or a serial device server. Check the “Make these the default settings” box and click “Apply Changes” to set your NCOM-113-M into RFC2217 Client Mode.

Mode	<input type="text" value="RFC2217 - Client"/>	Current	Updated
Local Telnet Port Number:		2000	<input type="text" value="2000"/>
Telnet Server IP:		N/A Port:N/A	<input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="147"/>
Keep alive time		10 min	Port: <input type="text" value="2000"/> <input type="text" value="10"/> min (0 ~ 99)
		<input type="button" value="Apply Changes"/>	<input checked="" type="checkbox"/> Make these the default settings.

5.4 Pair Connection Mode

Pair Connection Mode uses two NCOM devices in tandem, with one NCOM device in Pair Connection Master Mode and the other in Pair Connection Slave Mode. Two NCOM serial device servers are then connected to each other through Ethernet. Both may either be connected to the same LAN or over a WAN (i.e. through one or more routers). Pair Connection Mode transparently transfers both serial data and modem control signal without distance limitation.



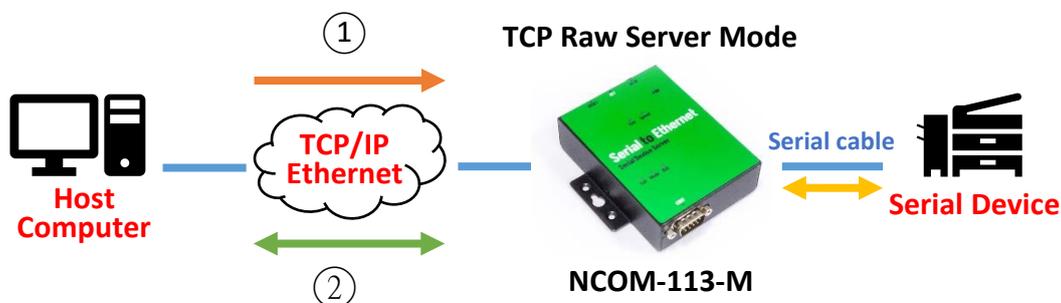
When setting two NCOM-113-M devices in Pair Connection Mode, you need to set the “Destination IP Address” of the master serial device server as the IP address of the slave serial device server.

Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select “Pair Connection - Master” and type “Destination IP address” and “Port” of the slave serial device server respectively (e.g. 192.168.254.250 Port: 2000) to connect to a serial device server in Pair Connection Slave Mode. Check the “Make these the default settings” box and click “Apply Changes” to set two NCOM-113-M devices in Pair Connection Mode.

Mode	<input type="text" value="Pair Connection - Master"/>		
		Current	Updated
Local Port Number:		2000	<input type="text" value="2000"/>
Destination IP Address:		N/A Port:N/A	<input type="text" value="192"/> <input type="text" value="."/> <input type="text" value="168"/> <input type="text" value="."/> <input type="text" value="254"/> <input type="text" value="."/> <input type="text" value="250"/>
Keep alive time		10 min	Port: <input type="text" value="2000"/> <input type="text" value="10"/> min (0 ~ 99)
		<input type="button" value="Apply Changes"/>	<input type="checkbox"/> Make these the default settings.

5.5 TCP Raw Server Mode

In TCP Raw Server Mode, NCOM-113-M is configured with a unique IP & Port combination on a TCP/IP network. It waits passively to be contacted by a host computer. After a host computer establishes a transparent connection, it then proceeds with data transmission.



In the figure, the data transmission proceeds as follows:

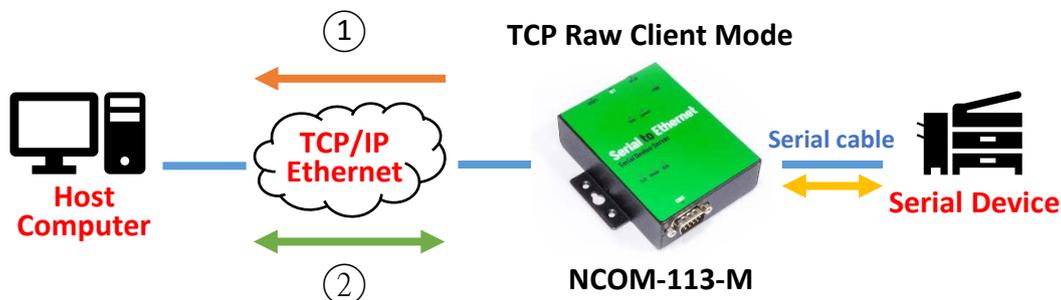
1. The host computer requests a connection from NCOM-113-M configured for TCP Raw Server Mode.
2. Once the connection is established, data can be transmitted in both directions – from the host computer to NCOM-113-M and from NCOM-113-M to the host computer.

Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select “TCP Raw - Server” and check the “Make these the default settings” box and click “Apply Changes” to set your NCOM-113-M into TCP Raw - Server Mode.

Mode	TCP Raw - Server	
	Current	Updated
Local Telnet Port Number:	2000	<input type="text" value="2000"/>
Telnet Timeout:	0 seconds	<input type="text" value="0"/> seconds (< 256, 0 for no timeout)
Keep alive time	10 min	<input type="text" value="10"/> min (0 ~ 99)
	<input type="button" value="Apply Changes"/>	<input checked="" type="checkbox"/> Make these the default settings.

5.6 TCP Raw Client Mode

In TCP Raw Client Mode, NCOM-113-M can establish a TCP connection with pre-determined host computers when serial data arrives.



In the figure, the data transmission proceeds as follows:

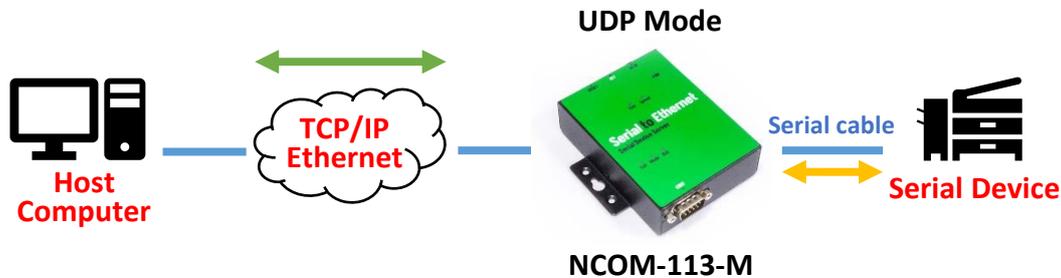
1. NCOM-113-M configured for TCP Raw Client Mode requests a connection from the host computer.
2. Once the connection is established, data can be transmitted in both directions – from the host computer to NCOM-113-M and from NCOM-113-M to the host computer.

Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select “TCP Raw - Client” and type “Telnet Server’s IP” and “Port” respectively (e.g. 192.168.1.147 Port: 2000) to establish a TCP connection with a pre-determined host computer or a serial device server in TCP Raw Server Mode. Check the “Make these the default settings” box and click “Apply Changes” to set your NCOM-113-M into TCP Raw Client Mode.

Mode	<input type="text" value="TCP Raw - Client"/>		
		Current	Updated
Local Telnet Port Number:		2000	<input type="text" value="2000"/>
Telnet Server IP:		N/A Port: N/A	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="1"/> <input type="text" value="147"/> Port: <input type="text" value="2000"/>
Keep alive time		10 min	<input type="text" value="10"/> min (0 ~ 99)
		<input type="button" value="Apply Changes"/>	<input checked="" type="checkbox"/> Make these the default settings.

5.7 UDP Mode

The UDP mode is a faster and more efficient mode. In UDP mode, you can unicast or multicast data from the serial device to one or multiple host computers, or receive data from one or multiple host computers. The UDP mode is ideal for applications such as message display.



In the figure, UDP mode directly proceeds with data transmission with no connection required.

Under the “HOME” page of NCOM-113-M’s firmware, select “NETWORK SETTINGS” to find the “Port 1 Mode Settings” window. Under “Mode”, select “UDP” and choose “Use Unicast” or “Use Multicast” under “Multicast Setting”. When selecting “Use Unicast”, you need to type a “Destination IP Address” (such as 192.168.1.147) to establish a UDP connection with a pre-determined host computer or serial device in UDP unicasting mode. When selecting “Use Multicast”, you need to type “Multicasting IP Address” (such as 224.0.0.0) for UDP multicasting group. Check the “Make these the default settings” box and click “Apply Changes” to set your NCOM-113-M into UDP Mode.

Port 1 Mode Settings
Settings:

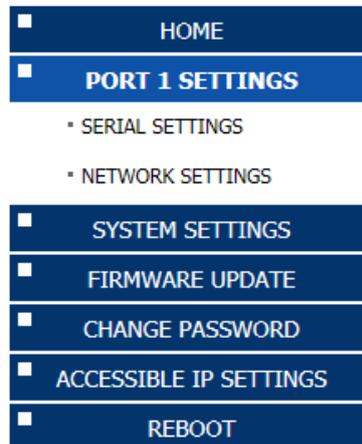
The current settings for port 1 may be changed using the form below. To make the new settings apply each time the NCOM is reset, ensure that “Make these the default settings” is checked before pressing the “Apply Changes” button. If this control is not checked, the changes are applied to the port but the existing defaults are used whenever the module is next reset.

Mode	UDP	
Multicast Setting:	<input checked="" type="radio"/> Use Unicast	<input type="radio"/> Use Multicast
Local Listen Port Number:	4000	4000
Destination Port Number:	4000	4000
Destination IP Address:	0.0.0.0	192 . 168 . 1 . 147
Multicasting IP Address:	N/A	224 . 0 . 0 . 0
	<input type="button" value="Apply Changes"/>	<input checked="" type="checkbox"/> Make these the default settings

Mode UDP ▼	
<hr/>	
Multicast Setting:	Current <input type="radio"/> Use Unicast Updated <input checked="" type="radio"/> Use Multicast
Local Listen Port Number:	Current 4000 Updated 4000
Destination Port Number:	Current 4000 Updated 4000
Destination IP Address:	Current 0.0.0.0 Updated 192 . 168 . 1 . 147
Multicasting IP Address:	Current N/A Updated 224 . 0 . 0 . 0
Apply Changes <input checked="" type="checkbox"/> Make these the default settings.	

6. WEB CONSOLE CONFIGURATION INTERFACE

The web console interface allows configuration of NCOM-113-M. These settings include “PORT 1 SETTINGS” (“SERIAL SETTINGS” & “NETWORK SETTINGS”), “SYSTEM SETTINGS”, “FIRMWARE UPDATE”, “CHANGE PASSWORD”, “ACCESSIBLE IP SETTINGS” and “REBOOT”.



To access the web console interface to configure the device, open any web browser and enter NCOM-113-M’s IP address in the address bar to access the “HOME” page of NCOM-113-M’s firmware.

6.1 Port 1 Settings

The “PORT 1 SETTINGS” include “SERIAL SETTINGS” and “NETWORK SETTINGS”.

Click “SERIAL SETTINGS” to display the current serial port settings for NCOM-113-M. To modify the serial settings for a particular port, select appropriate options located on the right side of “Port 1 Serial Settings”.

The screenshot shows the 'Port 1 Serial Settings' interface. On the left, the 'Current' settings are listed: Mode: RS232, Baud Rate: 115200 bits/second, Data Size: 8 bits/character, Parity: None, Stop Bits: 1 bit(s), and Flow Control: None. On the right, the 'Updated' settings are shown with dropdown menus: Baud Rate: 115200 bits/S, Data Size: 8 bits/character, Parity: None, Stop Bits: 1 bit(s), and Flow Control: None. Below the updated settings, there is a 'Submit' button and a checked checkbox for 'Make these the default settings.'

You can modify the following serial parameters for your NCOM-113-M serial device server:

Serial Parameters	Setting	Default Values
Mode	RS-232, RS-422, RS-485 4W, RS-485 2W	RS-232
Baud Rate	300bps to 921600bps	115200bps
Data Size	5, 6, 7, 8 bits/character	8 bits/character
Parity Check	None, Odd, Even, Mark, Space	None
Stop Bits	1, 2, 1.5 bit(s)	1 bit
Flow Control	None or Hardware	None

Note: The default mode for NCOM-112-M is RS-422 mode.

After you modify the serial parameters for your NCOM-113-M, please check the “Make these the default settings” and click “Submit” to update the serial parameters for your device.

Click “NETWORK SETTINGS” to display the current network settings for NCOM-113-M. To modify the operation mode, refer to Chapter 5 for more detailed information. You can also modify the network parameters of NCOM-113-M. To modify the network parameter settings, select appropriate options located on the right side of “Port 1 Mode Settings”. Options include “Local Telnet Port Number”, “Telnet Timeout”, and “Keep alive time”.

Mode	RFC2217 - Server	
	Current	Updated
Local Telnet Port Number:	2000	<input type="text" value="2000"/>
Telnet Timeout:	0 seconds	<input type="text" value="0"/> seconds (< 256, 0 for no timeout)
Keep alive time	10 min	<input type="text" value="10"/> min (0 ~ 99)
	<input type="button" value="Apply Changes"/>	<input checked="" type="checkbox"/> Make these the default settings.

After you modify the network parameters for your NCOM-113-M, please check the “Make these the default settings” and click “Apply Changes” to update the network parameters for your device.

6.2 System Settings

The “SYSTEM SETTINGS” for NCOM-113-M includes “IP Address Selection”, “General Configuration Settings” and “Restore Factory Defaults”.

System Settings

IP Address Selection				
Address Type:	DHCP/AutoIP ▼			
Static IPAddress:	192	.168	.0	.1
Subnet Mask:	255	.255	.255	.0
DefaultGateway:	0	.0	.0	.0
Update Settings				

General Configuration Settings	
Server Name:	NCOM_410000002
UPnP port number:	6042
Update Settings	

Restore Factory Defaults	
Restore all options to their factory default states:	Restore Defaults

Click “Address Type”, located under “IP Address Selection”, to select IP address type (DHCP/AutoIP or Static IP) for NCOM-113-M. When you select “Static IP”, you need to enter the static IP address (such as 192.168.254.254) and Subnet Mask (such as 255.255.255.0) then click “Update Settings” to set your device to static IP address.

System Settings

IP Address Selection				
Address Type:	Static IP ▼			
Static IPAddress:	192	.168	.254	.254
Subnet Mask:	255	.255	.255	.0
DefaultGateway:	0	.0	.0	.0
Update Settings				

Note: The NCOM-113-M’s default IP address is 192.168.254.254

If you are working in a DHCP network, you need to select “DHCP/AutoIP” and click “Update Settings” to assign IP address for the NCOM-113-M automatically.

System Settings

IP Address Selection				
Address Type:	DHCP/AutoIP ▼			
Static IPAddress:	192	.168	.0	.1
Subnet Mask:	255	.255	.255	.0
DefaultGateway:	0	.0	.0	.0
Update Settings				

You can change NCOM serial device server's name by modifying the "Server Name" under "General Configuration Settings". You need to enter a new name (such as NCOM-113-M) and click "Update Settings" to set your serial device server to a new name.

General Configuration Settings

Server Name:

The NCOM-113-M's firmware provides a function to restore settings to factory defaults. You can do so by clicking "Restore Defaults" under "Restore Factory Defaults". After clicking "OK", NCOM-113-M will restore all options to factory default states.

Restore Factory Defaults

Restore all options to their factory default states:

Message from webpage

This will erase all existing configuration changes and restore factory default settings. Click OK if you are sure you want to do this or Cancel to retain existing settings.

Following are the values of default states:

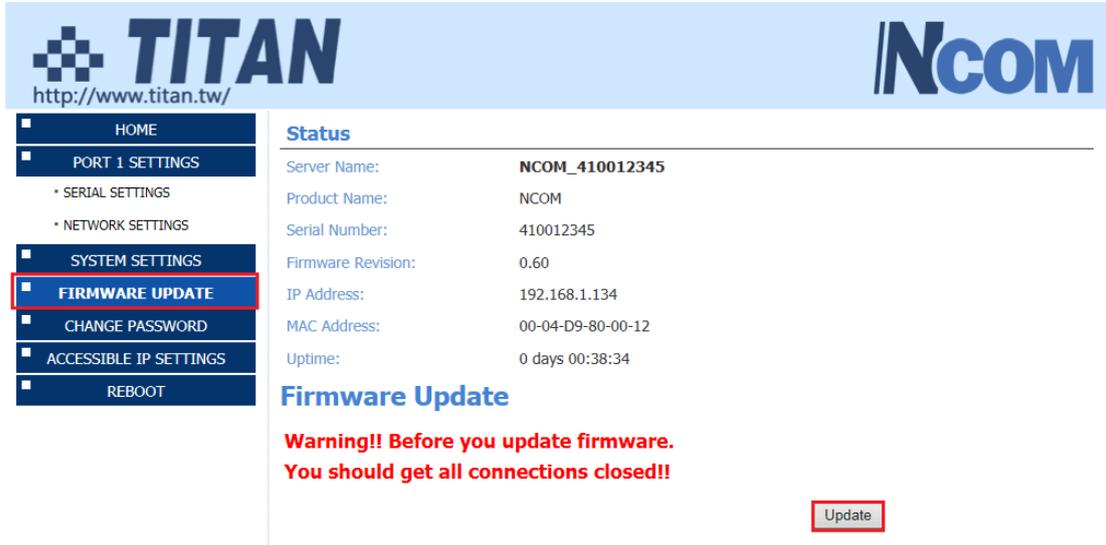
Network Parameters	Default Values
Mode	Driver Mode
Timeout	0 seconds
Keep alive time	10 minutes
Address Type	Static IP
Static IP address	192.168.254.254
Subnet Mask	255.255.255.0

Serial Port Parameters	Default Values
Mode	RS-232
Baud Rate	115200 bits/S
Data Size	8 bits/character
Parity Check	None
Stop Bits	1 bit
Flow Control	None

Note: The default mode for NCOM-112-M is RS-422.

6.3 Firmware Update

Under the web console interface, select “FIRMWARE UPDATE” and click “Update” to enable the firmware update interface to upgrade to a new firmware.



The screenshot shows the TITAN web console interface. The top header includes the TITAN logo and URL (http://www.titan.tw/) on the left, and the NCOM logo on the right. A navigation menu on the left lists: HOME, PORT 1 SETTINGS (with sub-items SERIAL SETTINGS and NETWORK SETTINGS), SYSTEM SETTINGS, FIRMWARE UPDATE (highlighted with a red box), CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The main content area is titled "Status" and displays the following information:

Server Name:	NCOM_410012345
Product Name:	NCOM
Serial Number:	410012345
Firmware Revision:	0.60
IP Address:	192.168.1.134
MAC Address:	00-04-D9-80-00-12
Uptime:	0 days 00:38:34

Below the status information, there is a section titled "Firmware Update" with a red warning message: "Warning!! Before you update firmware. You should get all connections closed!!". A red-bordered "Update" button is located at the bottom right of this section.

When you click “Update”, you will find the following message. The web console interface then waits for the firmware update tool program to launch in order to continue upgrading NCOM-113-M’s firmware.



The screenshot shows the TITAN web console interface during the firmware update process. The top header is identical to the previous screenshot. The main content area is titled "Firmware Update" and contains a table with the following information:

Name:	NCOM_410012345
Firmware Revision:	0.60
MAC Address:	00-04-D9-80-00-12

Below the table, there is a note: "Note: The configuration web server has now been disabled and will not respond until the firmware update completes or the module is reset."

After enabling firmware update from the web console, please refer to page 60~62, 80~82 for instructions on how to launch the firmware update tool program to upgrade NCOM-113-M’s firmware.

6.4 Change Password

Input the “Old Login Password”, “New Login Password” and “Confirm New Login Password” to change the login password. After clicking “Set New Password” the NCOM-113-M will have password protection.



TITAN
http://www.titan.tw/

- HOME
- PORT 1 SETTINGS
 - SERIAL SETTINGS
 - NETWORK SETTINGS
- SYSTEM SETTINGS
- FIRMWARE UPDATE
- CHANGE PASSWORD**
- ACCESSIBLE IP SETTINGS
- REBOOT

Change Password

Old Login Password:

New Login Password:

Confirm New Login Password:

When password protection is enabled, you need to input the “Password” then click “Login” to access NCOM-113-M’s firmware to configure the device.

Status

Server Name:	NCOM_410000007
Product Name:	NCOM
Serial Number:	410000007
Firmware Revision:	0.1
IP Address:	192.168.1.147
MAC Address:	00-04-D9-80-00-17
Uptime:	0 days 02:36:36

Login

Password:

If you **forget the password**, the ONLY way to configure NCOM-113-M is by using the reset button to restore factory defaults (press the hardware reset button until the “PWR” LED flashes). The factory default settings have password protection disabled, allowing you to log in without a password.

6.5 Accessible IP Settings

The NCOM-113-M's firmware provides accessible IP settings. It uses an IP address based filtering method to control accessible IP addresses.

Accessible IP settings allow you to pass or block remote host IP addresses to prevent unauthorized access. Access to NCOM-113-M is controlled by IP address. If a host's IP address is in the accessible IP table, then the host will be allowed to access the device. You can allow one of the following rules by setting the accessible IP table parameter.

1. Only one host with a specific IP address can access NCOM-113-M.

Check the "Enable" checkbox then enter IP address and "255.255.255.255" for Netmask.

IP Address List			
No	Enable	IPAddress	Netmask
1	<input checked="" type="checkbox"/>	192.168.1.122	255.255.255.255

In this example, only the host with an IP address of 192.168.1.122 can access the device.

2. Hosts on a specific subnet can access NCOM-113-M.

Check the "Enable" checkbox then enter IP address and "255.255.255.0" for Netmask.

IP Address List			
No	Enable	IPAddress	Netmask
1	<input checked="" type="checkbox"/>	192.168.1.0	255.255.255.0

In this example, only hosts with an IP address from 192.168.1.1 to 192.168.1.254 can access the device.

IP Address List			
No	Enable	IPAddress	Netmask
1	<input checked="" type="checkbox"/>	192.168.0.0	255.255.0.0

In this example, only hosts with an IP address from 192.168.0.1 to 192.168.255.254 can access the device.

3. Any host can access NCOM-113-M.

Disable this function by unchecking “Enable”.

IP Address List

No	Enable	IPAddress	Netmask
1	<input type="checkbox"/>	0.0.0.0	0.0.0.0
2	<input type="checkbox"/>	0.0.0.0	0.0.0.0
3	<input type="checkbox"/>	0.0.0.0	0.0.0.0
4	<input type="checkbox"/>	0.0.0.0	0.0.0.0
5	<input type="checkbox"/>	0.0.0.0	0.0.0.0
6	<input type="checkbox"/>	0.0.0.0	0.0.0.0

After you enter “IP address” and “Netmask” to set accessible IP for your NCOM-113-M serial device server, please check the “Make these the default settings” and click “Update Settings” to update the accessible IP settings table for NCOM-113-M.

TITAN
http://www.titan.tw/

- HOME
- PORT 1 SETTINGS
 - SERIAL SETTINGS
 - NETWORK SETTINGS
- SYSTEM SETTINGS
- FIRMWARE UPDATE
- CHANGE PASSWORD
- ACCESSIBLE IP SETTINGS**
- REBOOT

Accessible IP Settings

Make these the default settings.

IP Address List

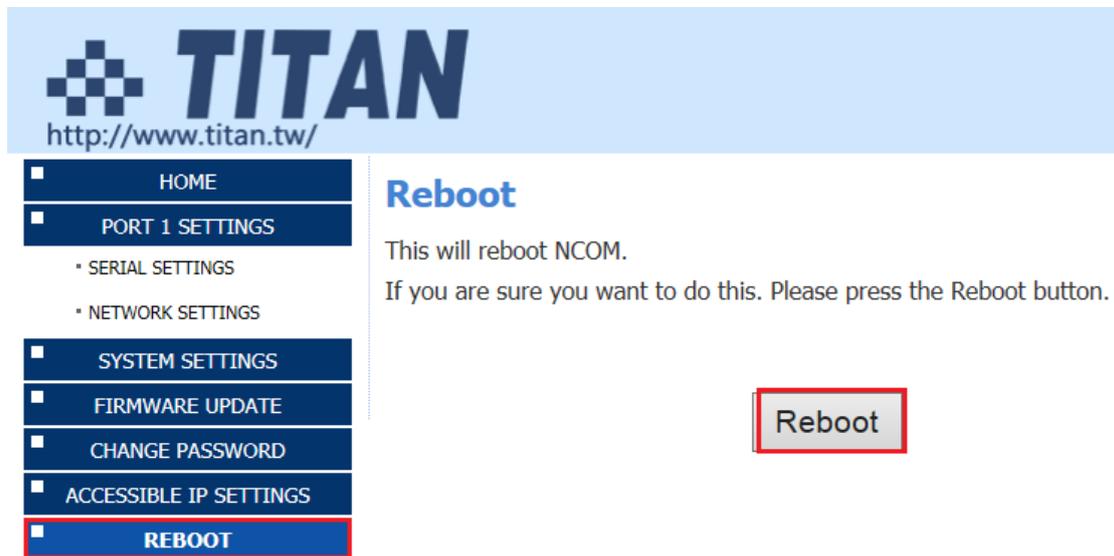
No	Enable	IPAddress	Netmask
1	<input checked="" type="checkbox"/>	192.168.1.0	255.255.255.0
2	<input type="checkbox"/>	0.0.0.0	0.0.0.0
3	<input type="checkbox"/>	0.0.0.0	0.0.0.0
4	<input type="checkbox"/>	0.0.0.0	0.0.0.0
5	<input type="checkbox"/>	0.0.0.0	0.0.0.0
6	<input type="checkbox"/>	0.0.0.0	0.0.0.0

Update Settings Reset

You can click “Reset” to allow any host to access NCOM-113-M. **The default accessible IP setting is to allow all hosts to access.**

6.6 Reboot

You can click “Reboot” to reboot/reset your NCOM-113-M serial device server.



The screenshot shows the TITAN web interface. At the top left is the TITAN logo with the URL <http://www.titan.tw/>. A navigation menu on the left contains the following items: HOME, PORT 1 SETTINGS (with sub-items SERIAL SETTINGS and NETWORK SETTINGS), SYSTEM SETTINGS, FIRMWARE UPDATE, CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The REBOOT item is highlighted with a red border. The main content area is titled "Reboot" and contains the text: "This will reboot NCOM. If you are sure you want to do this. Please press the Reboot button." A "Reboot" button is located to the right of this text, also highlighted with a red border.

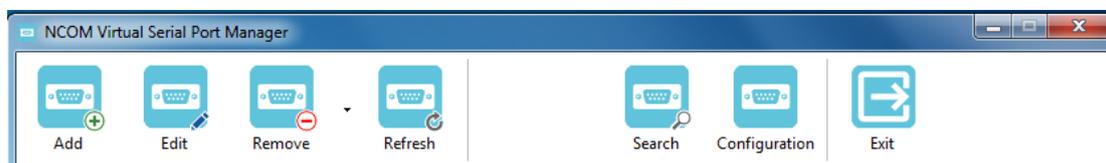
7. NCOM VIRTUAL SERIAL PORT MANAGER AND DRIVER INSTALLATION

7.1 NCOM Virtual Serial Port Manager and Virtual Serial Port Driver

Note: The virtual serial port driver is bundled with NCOM Virtual Serial Port Manager and is automatically installed when you install NCOM Virtual Serial Port Manager!

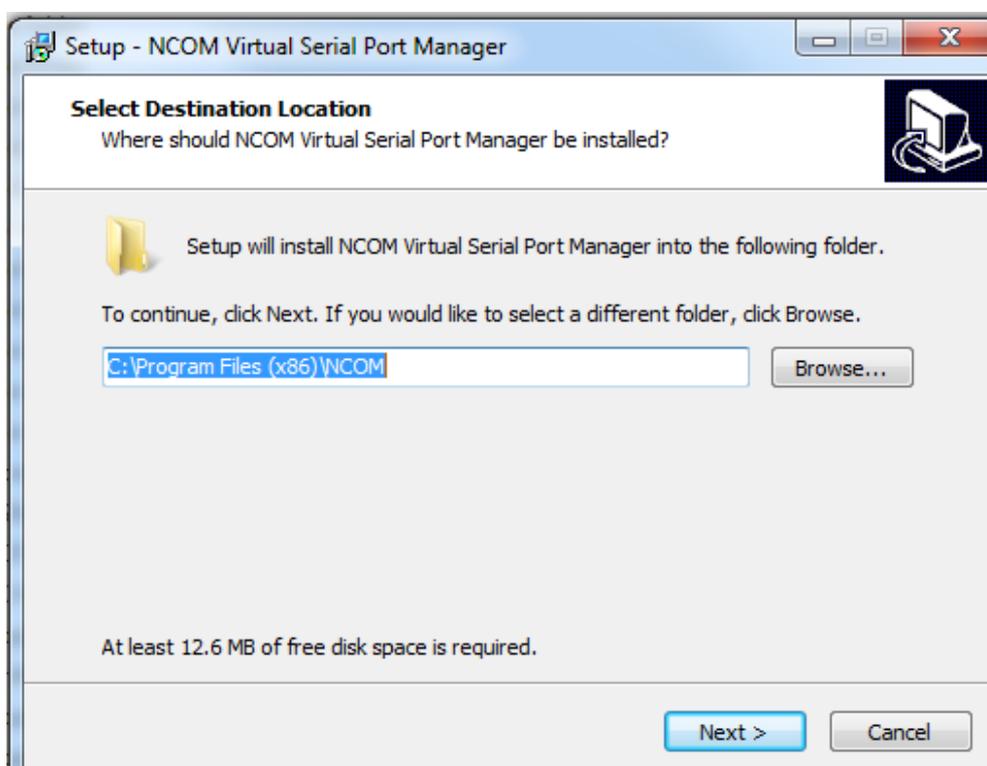
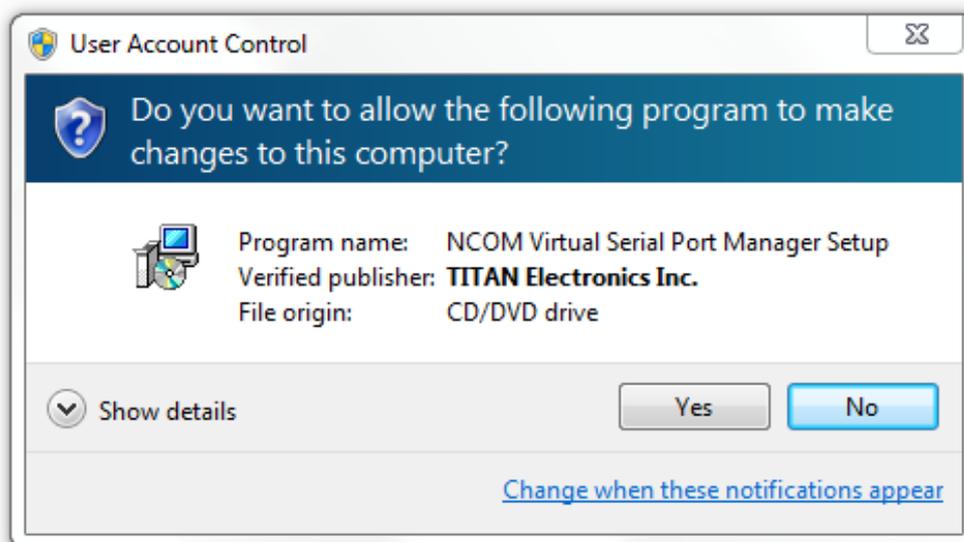
The NCOM Virtual Serial Port Manager is an advanced software-based solution that allows you to communicate with serial device servers over networks easily. Thus, any serial device connected to your NCOM serial device server could be accessed from anywhere in the world (via internet or LAN) as if it were attached directly to the remote PC.

When the attached serial port device sends communication data it is actually transmitted over TCP/IP network and back from the network to your serial device. NCOM Virtual Serial Port Manager has options to configure NCOM-113-M with the options “Add” (add virtual serial port), “Edit” (edit virtual serial port parameters), “Remove” (remove virtual serial port), “Refresh” (refresh virtual serial port), “Search” (search all attached NCOM devices), “Configuration” (configure virtual serial port parameters) and “Exit” (exit NCOM Virtual Serial Port Manager).

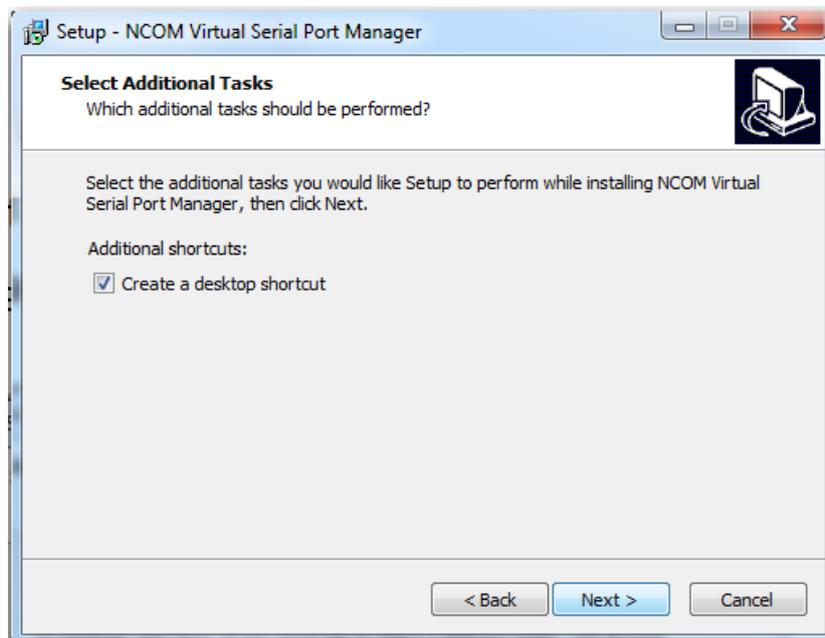
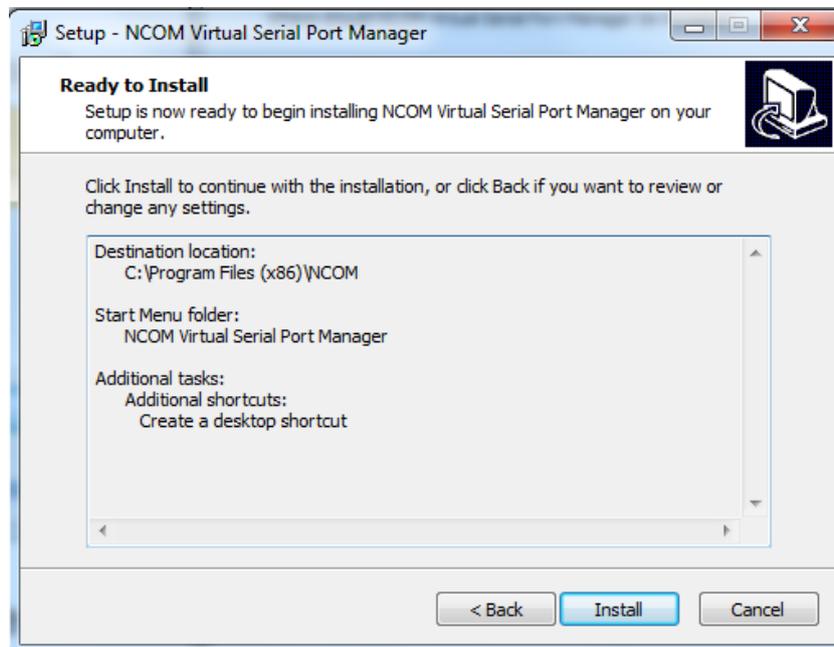


7.2 Installing NCOM Virtual Serial Port Manager

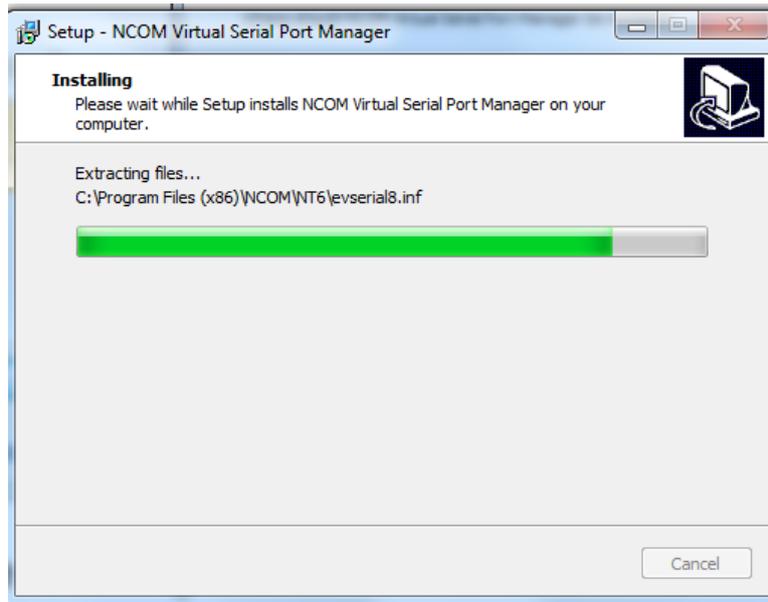
1. Insert the software CD into your CD-ROM or DVD-ROM drive.
2. Open files in the CD and double click "NCOM_setup" to install NCOM Virtual Serial Port Manager.
3. When the confirmation for "User Account Control" appears, click "Yes" and the "Setup - NCOM Virtual Serial Port Manager" message appears. Click "Next" to proceed with the installation of NCOM Virtual Serial Port Manager.



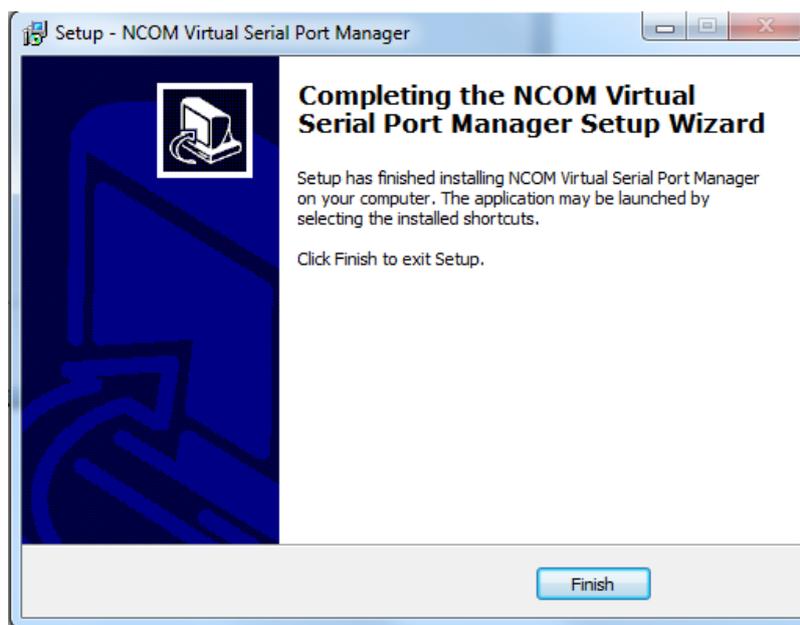
4. After you click “Next”, you will see following information. Click on “Next” and the “Ready to Install” message appears. Click “Install” to install NCOM Virtual Serial Port Manager.



5. After you click “Install” to install NCOM Virtual Serial Port Manager and virtual serial port driver for NCOM devices, you will see the following information.



6. When the message “Completing the NCOM Virtual Serial Port Manager Setup Wizard” appears, click “Finish” to finish the installation and exit setup program.



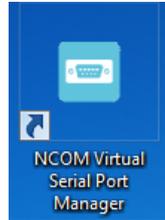
7. Double click the shortcut icon of “NCOM Virtual Serial Port Manager” on the desktop to launch NCOM Virtual Serial Port Manager.



8. You will see the main window of NCOM Virtual Serial Port Manager.

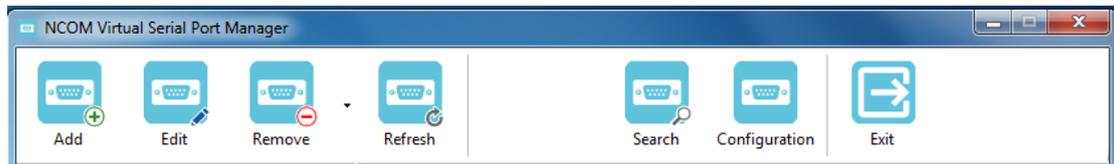
8. RUNNING NCOM VIRTUAL SERIAL PORT MANAGER

After installing NCOM-113-M hardware and NCOM Virtual Serial Port Manager, double click the shortcut icon of “NCOM Virtual Serial Port Manager” on the Desktop to start NCOM Virtual Serial Port Manager.



8.1 NCOM Virtual Serial Port Manager Functions

NCOM Virtual Serial Port Manager has options to configure NCOM-113-M with the options “Add” (add virtual serial port), “Edit” (edit virtual serial port parameters), “Remove” (remove virtual serial port), “Refresh” (refresh virtual serial port), “Search” (search all attached NCOM devices), “Configuration” (configure virtual serial port parameters) and “Exit” (exit NCOM Virtual Serial Port Manager).

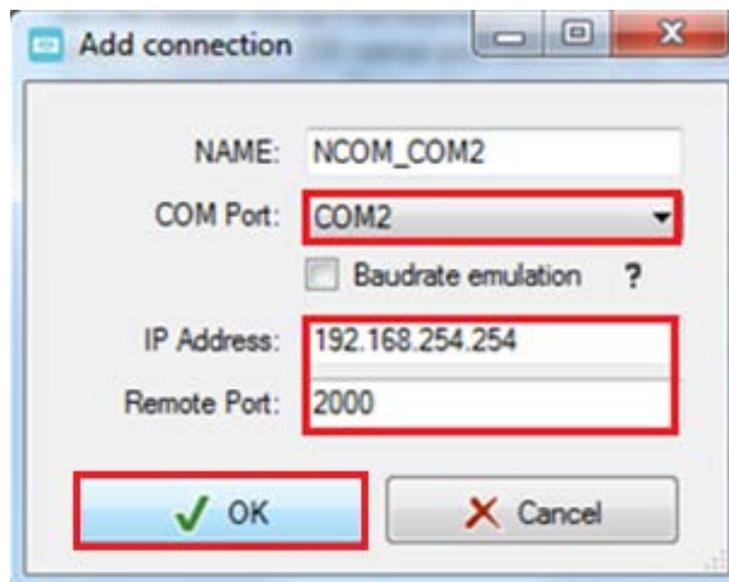


8.2 Manually Add Virtual Serial Port for NCOM Devices

After opening NCOM Virtual Serial Port Manager, click “Add” to open the “Add connection” window.



Under “Add connection”, select an available COM port (e.g. COM2. Note that NCOM Virtual Serial Port Manager will show your next available COM port) and type your NCOM device’s IP address and port in “IP Address” and “Remote Port” respectively (e.g. IP Address: 192.168.254.254 Port: 2000). After setting the COM port, IP address and remote port, click “OK” to add a new virtual serial port.



After adding a new virtual serial port for NCOM devices, you will find information about the virtual serial port in the main window of NCOM Virtual Serial Port Manager.

NCOM Virtual Serial Port Manager

Add
 Edit
 Remove
 Refresh
 Search
 Configuration
 Exit

NCOM_COM2

- COM2 Virtual Created
- Connected to 0 from 1
- Sent: 0.0 KB / Received: 0.0 KB

Information

COM port information

Port Name: **COM2** Port Type: **Virtual**

Port Status: **Created** Current Settings: -

Bytes Sent: **0.0 KB** Bytes Received: **0.0 KB**

Baudrate Emulation: **No**

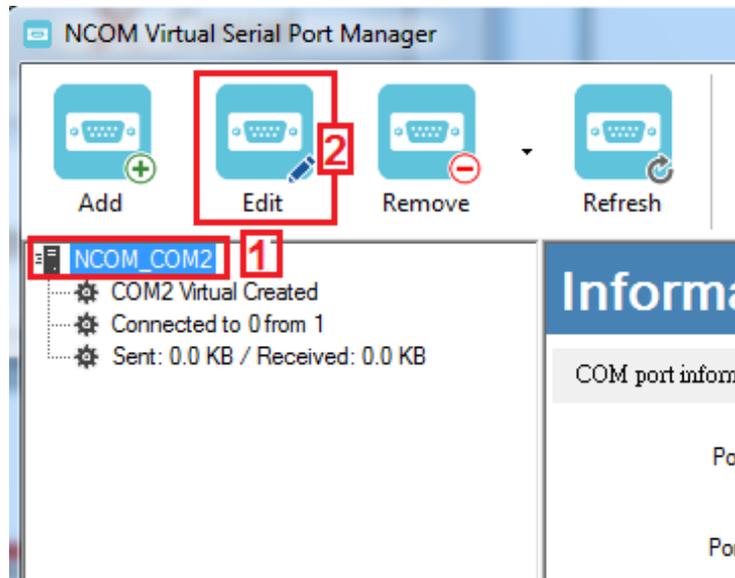
Network information

Protocol: **TELMET**

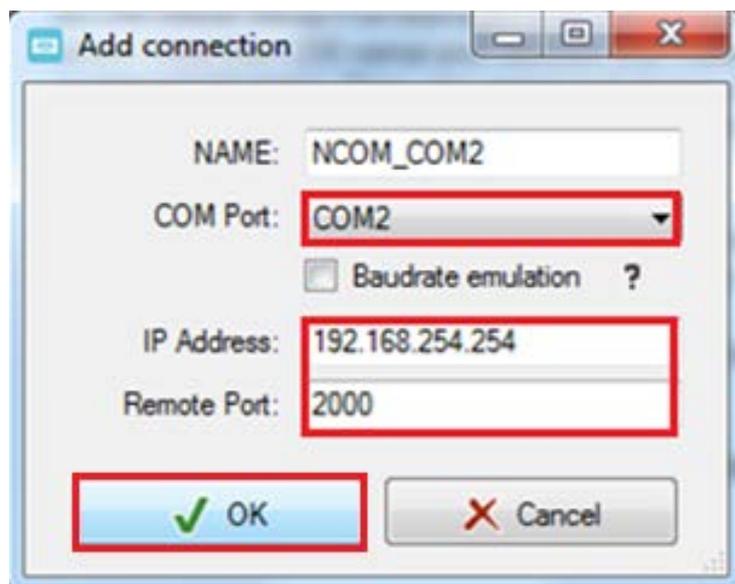
Remote host	Status	Sent	Received	Active
192.168.254.254:2000	Disconnected	0	0	00:00:00

8.3 Manually Edit Existing Virtual Serial COM ports for NCOM Devices

To edit existing virtual serial COM port for NCOM devices, select the existing virtual serial COM port and click “Edit” to open the “Add connection” window.

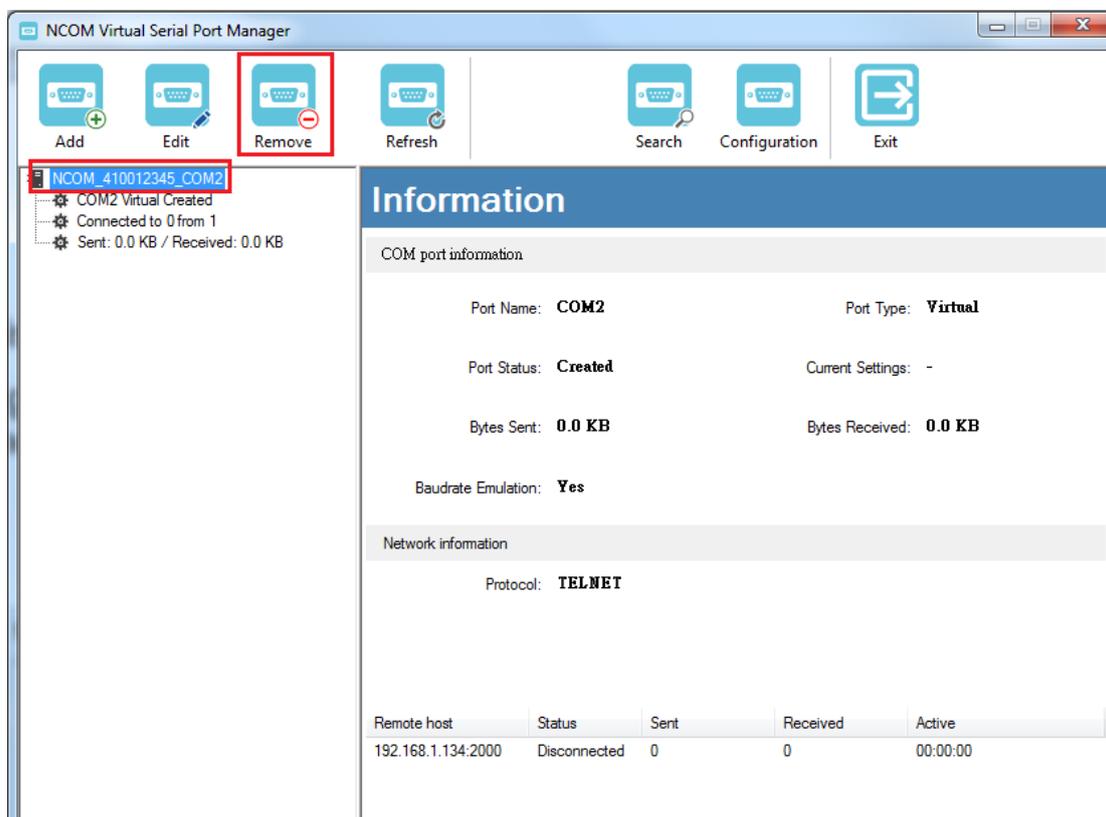


Under “Add connection”, you can change the COM port number with the “COM Port” option (e.g. changing from COM2 to COM3) or change the IP address and remote port with the “IP Address” and “Remote Port” options respectively. After you change the settings, click “OK” to confirm the changes of the virtual serial port for NCOM devices.

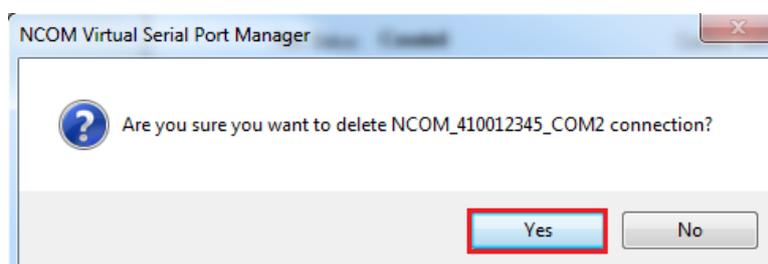


8.4 Manually Remove Existing Virtual Serial COM Ports for NCOM Devices

To remove an existing virtual serial port for NCOM devices, select an existing virtual serial port and click “Remove”.

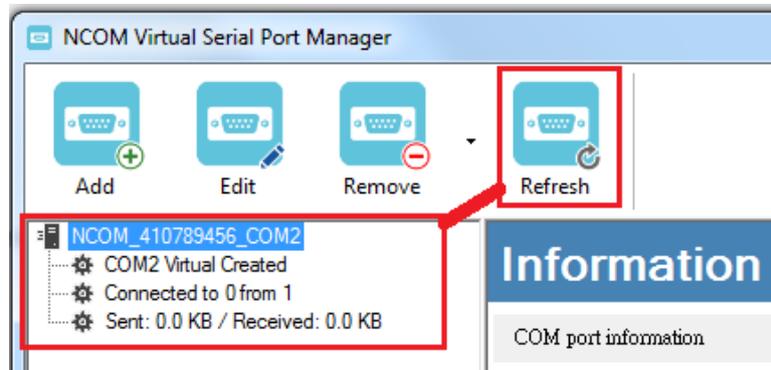


After clicking “Remove”, a confirmation message will appear asking “Are you sure you want to delete NCOM_XXXXXXXXX_COMX connection?”. Confirm by clicking on “Yes”.



8.5 Refreshing Virtual Serial Port Information

The virtual serial port information on the main window of NCOM Virtual Serial Port Manager may be incorrect or absent in some cases. In case this happens, you can click “Refresh” to recover the virtual serial port information.



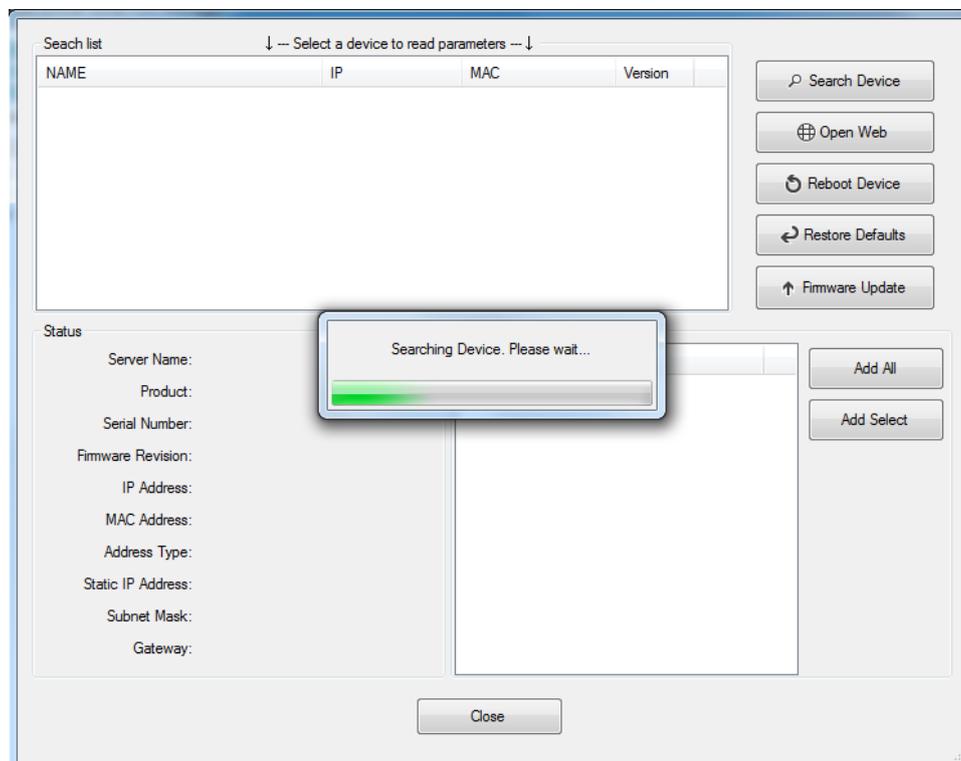
8.6 Automatically Search for NCOM Devices

NCOM Virtual Serial Port Manager provides a search function, which can search all attached NCOM devices and can also automatically install virtual serial port driver for NCOM devices. You may also open the web console interface to configure NCOM, reboot NCOM devices, restore factory defaults and execute firmware update from here.

“**Search**” (search all attached NCOM devices automatically).



Clicking on “Search ” takes you to the control menu page shown below:



After a few seconds the NCOM Virtual Serial Port Manager will search and display all attached NCOM devices automatically.

Search list ↓ -- Select a device to read parameters -- ↓

NAME	IP	MAC	Version
NCOM_410654321	192.168.1.117	00:04:D9:80:64:80	0.80
NCOM_410135790	192.168.1.146	00:04:D9:88:00:50	0.80
NCOM_410789456	192.168.1.125	00:04:D9:80:78:87	0.70
NCOM_410900002	192.168.1.105	00:04:D9:80:80:82	0.60
NCOM_410987654	192.168.1.148	00:04:D9:80:11:80	0.80
NCOM_410900004	192.168.1.147	00:04:D9:80:80:84	0.60
NCOM_410900001	192.168.1.112	00:04:D9:80:80:81	0.60
NCOM_410012345	192.168.1.134	00:04:D9:80:00:12	0.60
NCOM_410011111	192.168.1.140	00:04:D9:80:50:50	0.80
NCOM_410900003	192.168.1.149	00:04:D9:80:80:83	0.60

Status

Server Name:
 Product:
 Serial Number:
 Firmware Revision:
 IP Address:
 MAC Address:
 Address Type:
 Static IP Address:
 Subnet Mask:
 Gateway:

COM Port Information

#	Port	State

8.6.1 Selecting an NCOM Device to Read Parameters

After you select an attached NCOM device to configure the virtual serial port parameters, you will find the NCOM device information on the main window of NCOM Virtual Serial Port Manager. The information includes “Server Name”, “Product”, “Serial Number”, “Firmware Revision”, “IP Address”, “MAC Address”, “Address Type”, “Static IP Address”, “Subnet Mask” and “Gateway”.

The screenshot displays the NCOM Virtual Serial Port Manager interface. At the top, there is a search bar and a dropdown menu labeled "Select a device to read parameters". Below this is a table listing several NCOM devices. The device with the name "NCOM_410012345" is highlighted in blue. To the right of the table are several buttons: "Search Device", "Open Web", "Reboot Device", "Restore Defaults", and "Firmware Update". Below the table, there are two sections: "Status" and "COM Port Information". The "Status" section contains a red-bordered box with the following details: Server Name: **NCOM_410012345**, Product: NCOM 1 Port, Serial Number: 410012345, Firmware Revision: 0.60, IP Address: 192.168.1.134, MAC Address: 00:04:D9:80:00:12, Address Type: USE DHCP/AutoIP, Static IP Address: 192.168.0.1, Subnet Mask: 255.255.255.0, and Gateway: 0.0.0.0. The "COM Port Information" section shows a table with one entry: Port 1, RS-232 MODE. There are "Add All" and "Add Select" buttons next to this table. A "Close" button is located at the bottom center of the window.

NAME	IP	MAC	Version
NCOM_410654321	192.168.1.117	00:04:D9:80:64:80	0.80
NCOM_410135790	192.168.1.146	00:04:D9:88:00:50	0.80
NCOM_410789456	192.168.1.125	00:04:D9:80:78:87	0.70
NCOM_410900002	192.168.1.105	00:04:D9:80:80:82	0.60
NCOM_410987654	192.168.1.148	00:04:D9:80:11:80	0.80
NCOM_410900004	192.168.1.147	00:04:D9:80:80:84	0.60
NCOM_410900001	192.168.1.112	00:04:D9:80:80:81	0.60
NCOM_410012345	192.168.1.134	00:04:D9:80:00:12	0.60
NCOM_410011111	192.168.1.140	00:04:D9:80:50:50	0.80
NCOM_410900003	192.168.1.149	00:04:D9:80:80:83	0.60

Status

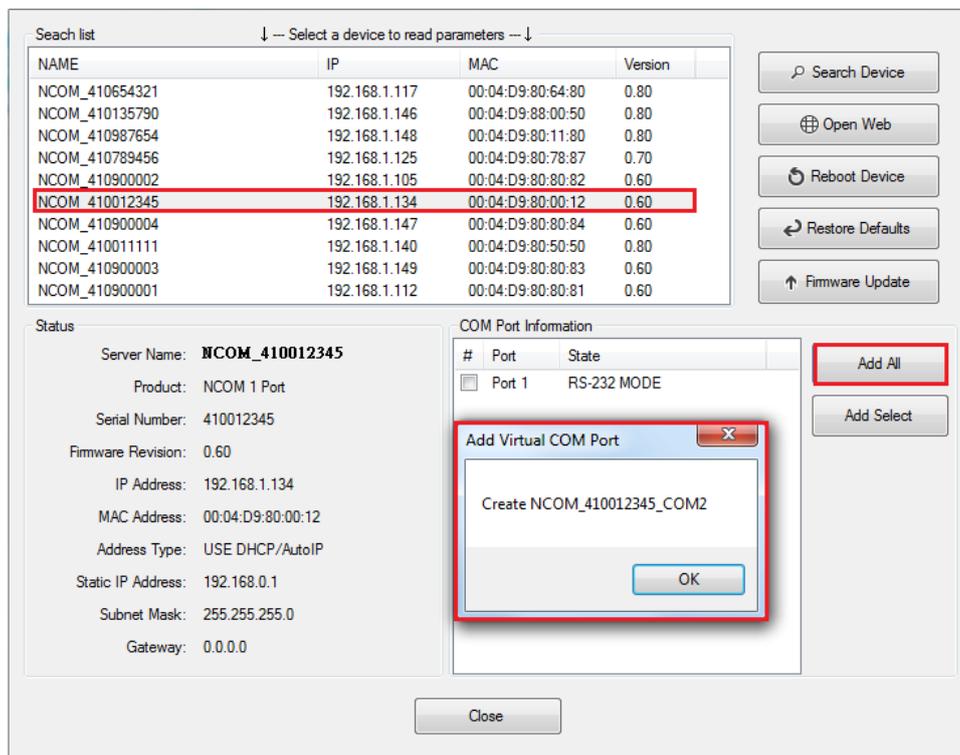
Server Name: **NCOM_410012345**
Product: NCOM 1 Port
Serial Number: 410012345
Firmware Revision: 0.60
IP Address: 192.168.1.134
MAC Address: 00:04:D9:80:00:12
Address Type: USE DHCP/AutoIP
Static IP Address: 192.168.0.1
Subnet Mask: 255.255.255.0
Gateway: 0.0.0.0

COM Port Information

#	Port	State
<input checked="" type="checkbox"/>	Port 1	RS-232 MODE

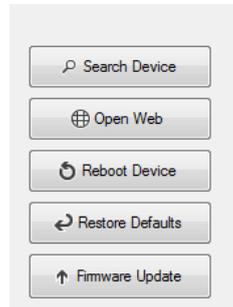
8.6.2 Installing Virtual Serial Port Driver for NCOM Devices

The search function can also create virtual COM ports and install virtual serial port drivers automatically. After selecting an attached NCOM device from the control menu click “**Add All**” button to install virtual serial port drivers automatically. After installation you will find the “Create NCOM_XXXXXXXXX_COMX” message and the virtual serial port created for the attached NCOM device.



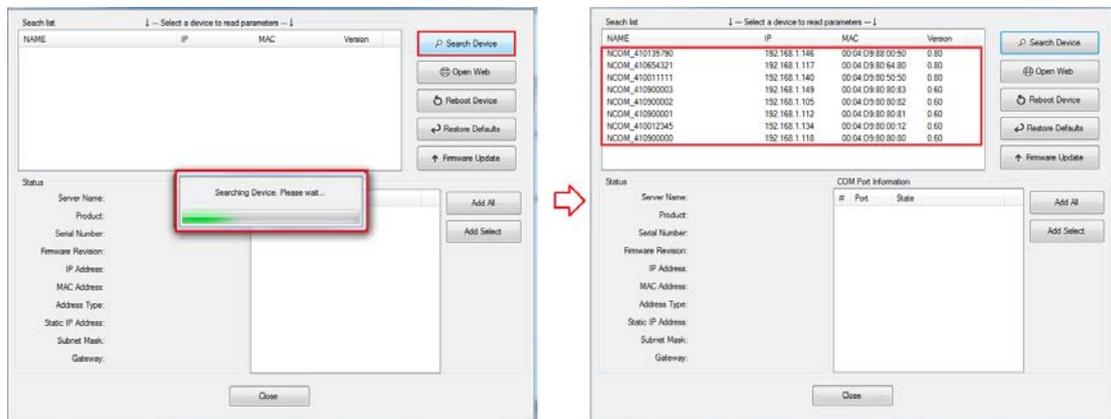
Click “OK” to finish creating the virtual serial port for your NCOM device.

In the “Search” window, there are five control buttons: “**Search Device**”, “**Open Web**”, “**Reboot Device**”, “**Restore Defaults**” and “**Firmware Update**”.



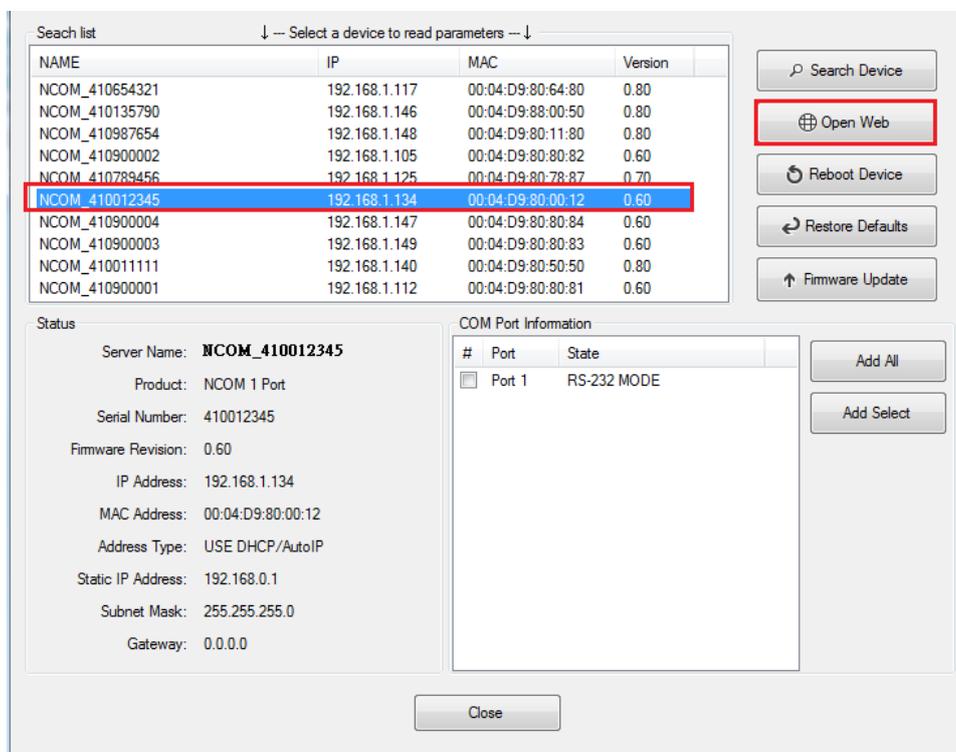
8.6.3 Manually Search for NCOM Devices

The “**Search Device**” button searches for all attached NCOM devices. If a new NCOM device is attached to the network system, you can click “Search Device” to find new NCOM devices.



8.6.4 Opening the Web Console Interface

The “**Open Web**” button opens the web console interface to configure NCOM. After selecting an attached NCOM device, click “Open Web” to open the web console interface for that particular NCOM device.



The screenshot displays the NCOM management interface. At the top, there is a search list with a dropdown menu to select a device for reading parameters. The list contains several NCOM devices with columns for NAME, IP, MAC, and Version. The device NCOM_410012345 is highlighted in blue. To the right of the list are several buttons: Search Device, Open Web (highlighted with a red box), Reboot Device, Restore Defaults, and Firmware Update. Below the search list, there is a Status section for the selected device NCOM_410012345, showing details such as Product, Serial Number, Firmware Revision, IP Address, MAC Address, Address Type, Static IP Address, Subnet Mask, and Gateway. To the right of the status section is a COM Port Information table with one entry: Port 1 in RS-232 MODE. Below the status and COM port information sections are buttons for Add All and Add Select. A Close button is located at the bottom center of the interface.

NAME	IP	MAC	Version
NCOM_410654321	192.168.1.117	00:04:D9:80:64:80	0.80
NCOM_410135790	192.168.1.146	00:04:D9:88:00:50	0.80
NCOM_410987654	192.168.1.148	00:04:D9:80:11:80	0.80
NCOM_410900002	192.168.1.105	00:04:D9:80:80:82	0.60
NCOM_410789456	192.168.1.125	00:04:D9:80:78:87	0.70
NCOM_410012345	192.168.1.134	00:04:D9:80:00:12	0.60
NCOM_410900004	192.168.1.147	00:04:D9:80:80:84	0.60
NCOM_410900003	192.168.1.149	00:04:D9:80:80:83	0.60
NCOM_410011111	192.168.1.140	00:04:D9:80:50:50	0.80
NCOM_410900001	192.168.1.112	00:04:D9:80:80:81	0.60

Status

Server Name: **NCOM_410012345**

Product: NCOM 1 Port

Serial Number: 410012345

Firmware Revision: 0.60

IP Address: 192.168.1.134

MAC Address: 00:04:D9:80:00:12

Address Type: USE DHCP/AutoIP

Static IP Address: 192.168.0.1

Subnet Mask: 255.255.255.0

Gateway: 0.0.0.0

COM Port Information

#	Port	State
<input checked="" type="checkbox"/>	Port 1	RS-232 MODE

Close

8.6.5 Rebooting NCOM Devices

The “**Reboot Device**” button reboots/resets your NCOM device. After selecting an attached NCOM device, click “Reboot Device” and a message will ask “Are you sure you want to reboot device?”. Click “Yes” to reboot/reset your NCOM device.

The screenshot displays the NCOM Virtual Serial Port Manager interface. At the top, there is a search list with a dropdown menu to select a device for reading parameters. Below this is a table listing several NCOM devices with their names, IP addresses, MAC addresses, and versions. The device with IP 192.168.1.134 and serial number 410012345 is highlighted with a red box. To the right of the table are several buttons: Search Device, Open Web, Reboot Device (highlighted with a red box), Restore Defaults, and Firmware Update. Below the table, there is a status section for the selected device, showing details such as Server Name, Product, Serial Number, Firmware Revision, IP Address, MAC Address, Address Type, Static IP Address, Subnet Mask, and Gateway. A confirmation dialog box titled "NCOM Virtual Serial Port Manager" is overlaid on the interface, asking "Are you sure you want to reboot device?" with "Yes" and "No" buttons. The "Yes" button is highlighted with a red box.

NAME	IP	MAC	Version
NCOM_410135790	192.168.1.146	00:04:D9:88:00:50	0.80
NCOM_410654321	192.168.1.117	00:04:D9:80:64:80	0.80
NCOM_410011111	192.168.1.140	00:04:D9:80:50:50	0.80
NCOM_410900003	192.168.1.149	00:04:D9:80:80:83	0.60
NCOM_410900002	192.168.1.105	00:04:D9:80:80:82	0.60
NCOM_410900001	192.168.1.112	00:04:D9:80:80:81	0.60
NCOM_410012345	192.168.1.134	00:04:D9:80:00:12	0.60
NCOM_410900000	192.168.1.118	00:04:D9:80:80:80	0.60

Server Name: NCOM_41
Product: NCOM 1 Po
Serial Number: 410012345
Firmware Revision: 0.60
IP Address: 192.168.1.1
MAC Address: 00:04:D9:80:00:12
Address Type: USE DHCP/AutoIP
Static IP Address: 192.168.0.1
Subnet Mask: 255.255.255.0
Gateway: 0.0.0.0

8.6.6 Restoring to Factory Defaults

The “**Restore Defaults**” button restores the firmware to factory defaults. When you select an attached NCOM device, you can restore all options to factory default states by clicking the “Restore Defaults” button; After clicking “Restore Defaults”, a message will ask “Are you sure you want to restore device to default?”. Confirm by clicking “Yes” and the NCOM device will restore all options to factory defaults.

The screenshot displays the NCOM Virtual Serial Port Manager interface. At the top, there is a search list with columns for NAME, IP, MAC, and Version. The second row, NCOM_410012345, is highlighted with a red box. To the right of the list are several buttons: Search Device, Open Web, Reboot Device, Restore Defaults (highlighted with a red box), and Firmware Update. Below the search list is a status section with fields for Server Name, Product, Serial Number, Firmware Revision, IP Address, MAC Address, Address Type, Static IP Address, Subnet Mask, and Gateway. A dialog box titled "NCOM Virtual Serial Port Manager" is overlaid on the interface, containing a question mark icon and the text "Are you sure you want to restore device to default?". The dialog has "Yes" and "No" buttons, with "Yes" highlighted by a red box. A "Close" button is located at the bottom of the dialog.

NAME	IP	MAC	Version
NCOM_410135790	192.168.1.146	00:04:D9:88:00:50	0.80
NCOM_410012345	192.168.1.134	00:04:D9:80:00:12	0.60
NCOM_410900001	192.168.1.112	00:04:D9:80:80:81	0.60
NCOM_410900002	192.168.1.105	00:04:D9:80:80:82	0.60
NCOM_410900003	192.168.1.149	00:04:D9:80:80:83	0.60
NCOM_410900000	192.168.1.118	00:04:D9:80:80:80	0.60

Status

Server Name: NCOM
Product: NCOM
Serial Number: 41001
Firmware Revision: 0.60
IP Address: 192.168.1.134
MAC Address: 00:04:D9:80:00:12
Address Type: USE DHCP/AutoIP
Static IP Address: 192.168.0.1
Subnet Mask: 255.255.255.0
Gateway: 0.0.0.0

Are you sure you want to restore device to default?

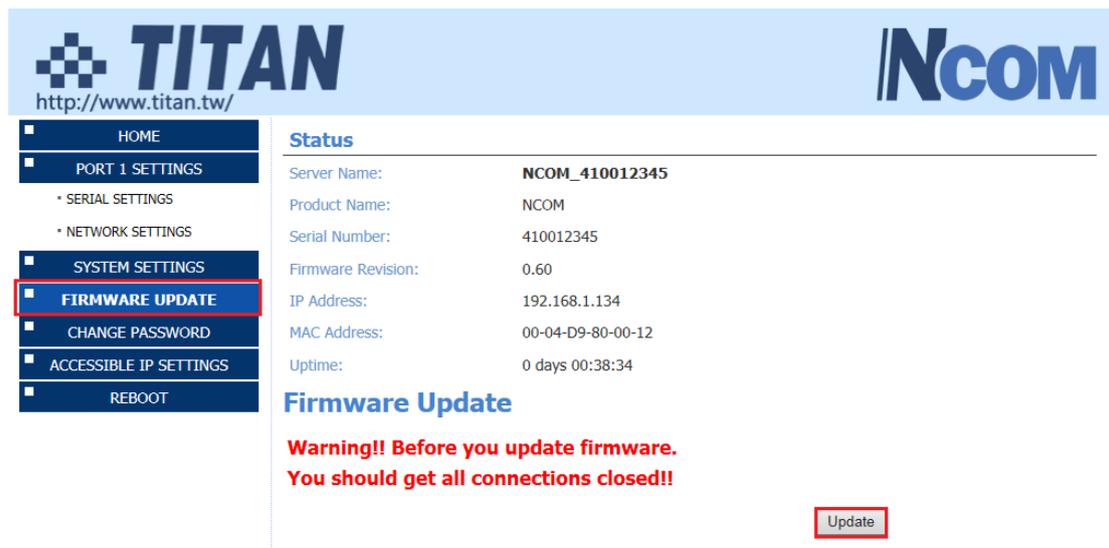
Yes No

Close

8.6.7 Firmware Update Tool

The “**Firmware Update**” button opens the firmware update tool to upgrade NCOM-113 firmware contents via Ethernet port. Before you click “Firmware Update”, please go to the web console interface of NCOM device firmware. Enable firmware update interface via Ethernet port in order to upgrade NCOM-113-M.

Under the web console interface, select “FIRMWARE UPDATE” and click “Update” to enable the firmware update interface to upgrade to a new firmware.

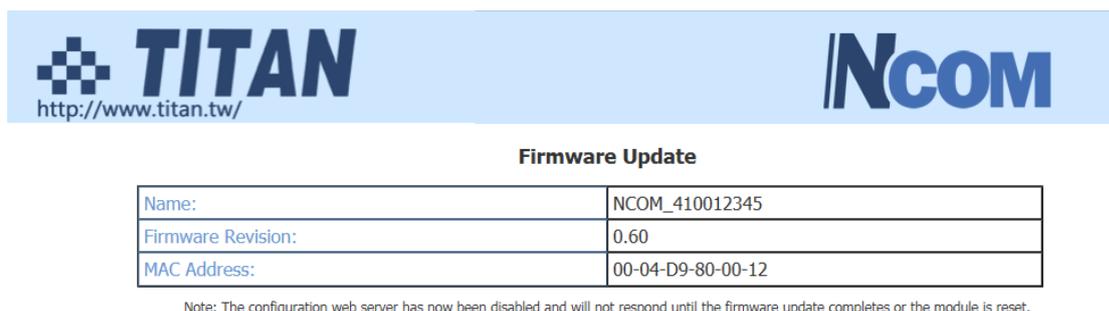


The screenshot shows the TITAN web console interface. The left sidebar contains a menu with options: HOME, PORT 1 SETTINGS, SERIAL SETTINGS, NETWORK SETTINGS, SYSTEM SETTINGS, **FIRMWARE UPDATE** (highlighted with a red box), CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The main content area displays the 'Status' section with the following information:

Server Name:	NCOM_410012345
Product Name:	NCOM
Serial Number:	410012345
Firmware Revision:	0.60
IP Address:	192.168.1.134
MAC Address:	00-04-D9-80-00-12
Uptime:	0 days 00:38:34

Below the status information is the 'Firmware Update' section, which includes a red warning message: "Warning!! Before you update firmware. You should get all connections closed!!" and an 'Update' button (also highlighted with a red box).

When you click “Update”, you will find the following message. The web console interface then waits for the firmware update tool program to launch in order to continue upgrading NCOM-113-M’s firmware.

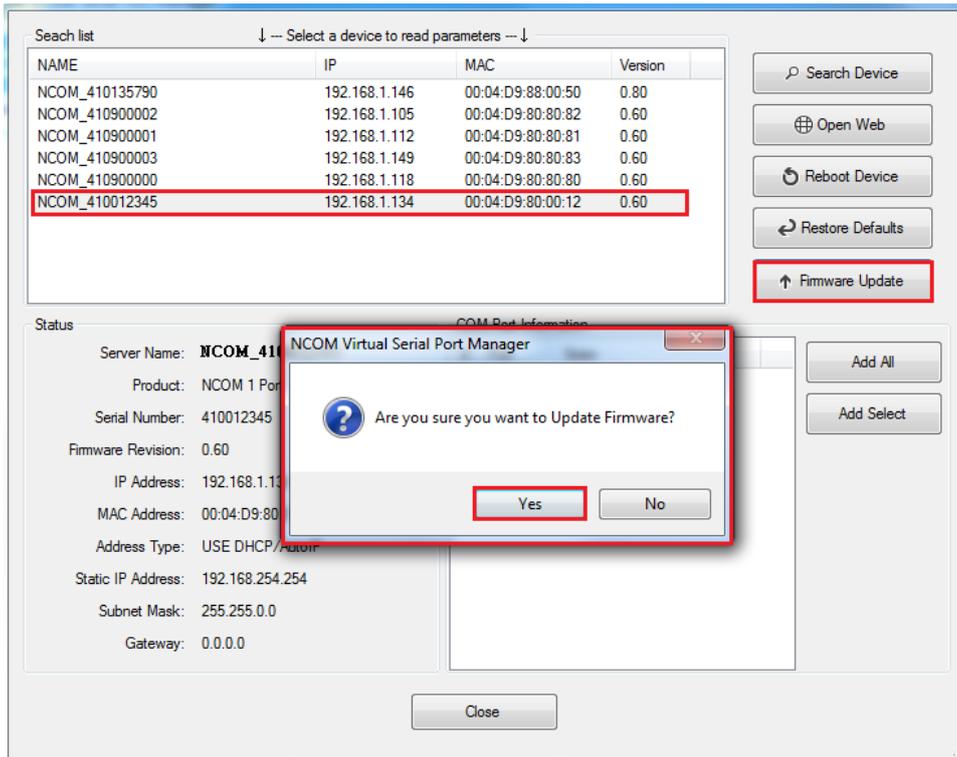


The screenshot shows the TITAN web console interface with the 'Firmware Update' section. It displays a table with the following information:

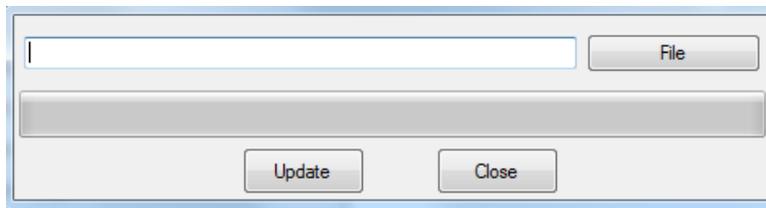
Name:	NCOM_410012345
Firmware Revision:	0.60
MAC Address:	00-04-D9-80-00-12

Below the table is a note: "Note: The configuration web server has now been disabled and will not respond until the firmware update completes or the module is reset."

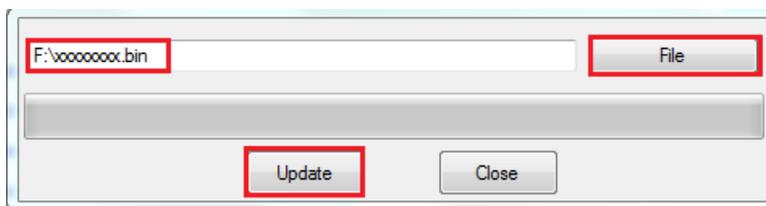
After enabling the firmware update interface, please select this NCOM device then click the “Firmware Update” button.



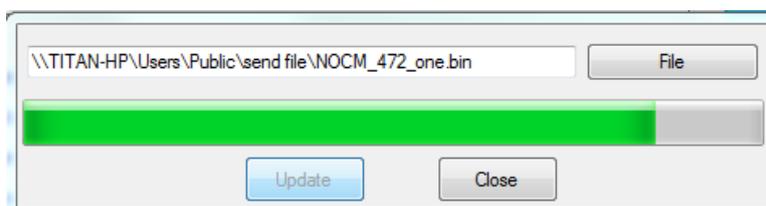
When you click “Firmware Update”, a message will ask “Are you sure you want to update firmware?”. Confirm by clicking “Yes” and the message “Input new firmware file” will appear.



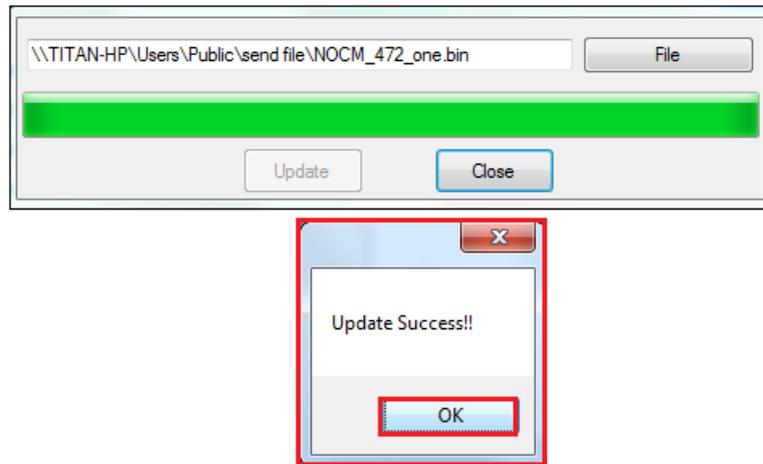
Use the “File” button to browse to the new firmware file and click on “Update” to start upgrading NCOM-113-M’s device firmware.



While upgrading, you will find the following message.



After successfully upgrading the firmware contents, there will be a message stating “Update Success!!”.



Click on “OK” to finish the firmware update procedure.

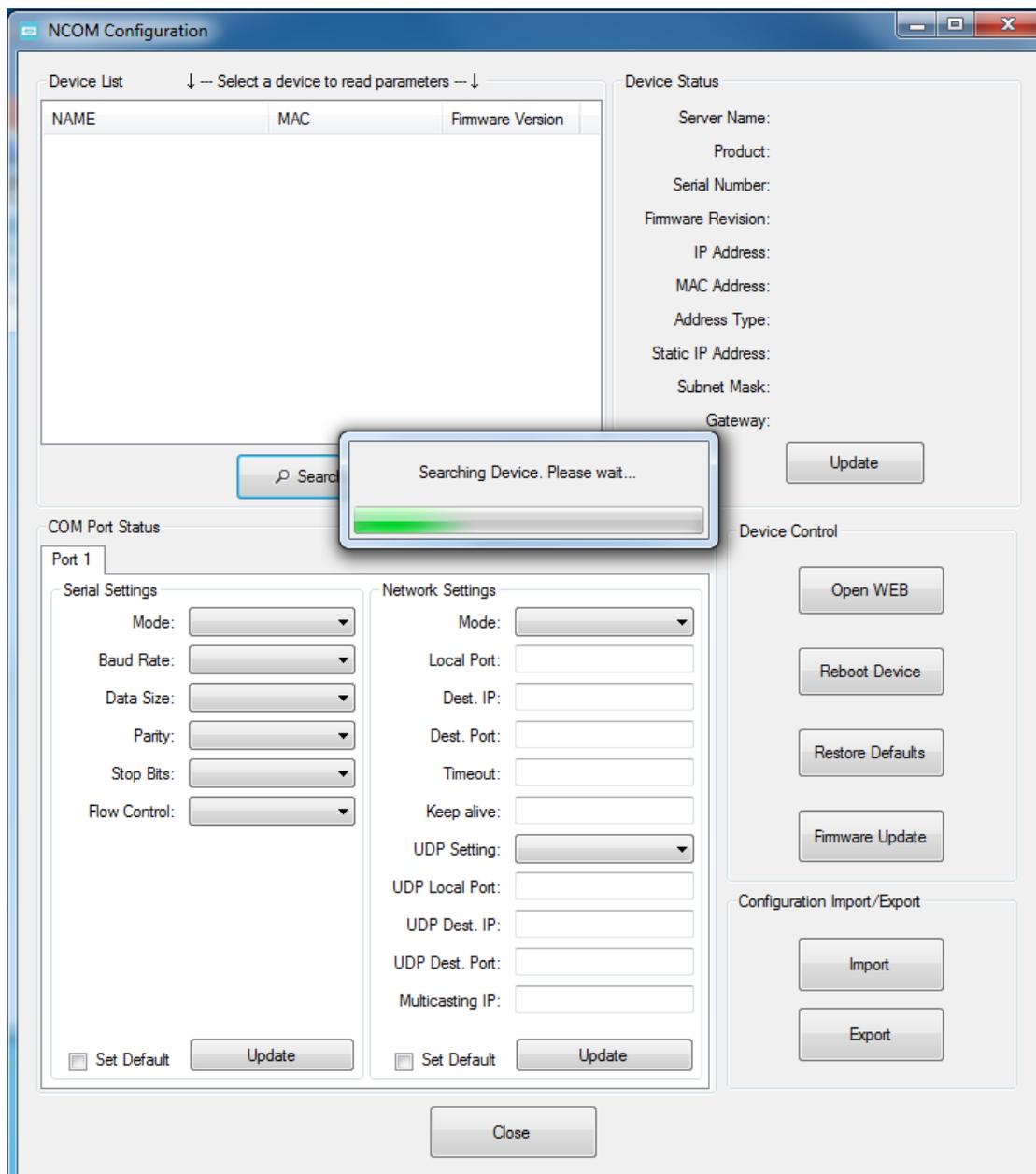
8.7 Configuring NCOM Devices

NCOM Virtual Serial Port Manager has a configuration function which can configure all attached NCOM devices. It can also import/export configuration files for NCOM devices, open web console interface to configure NCOM device, reboot NCOM devices, restore factory defaults and execute firmware update.

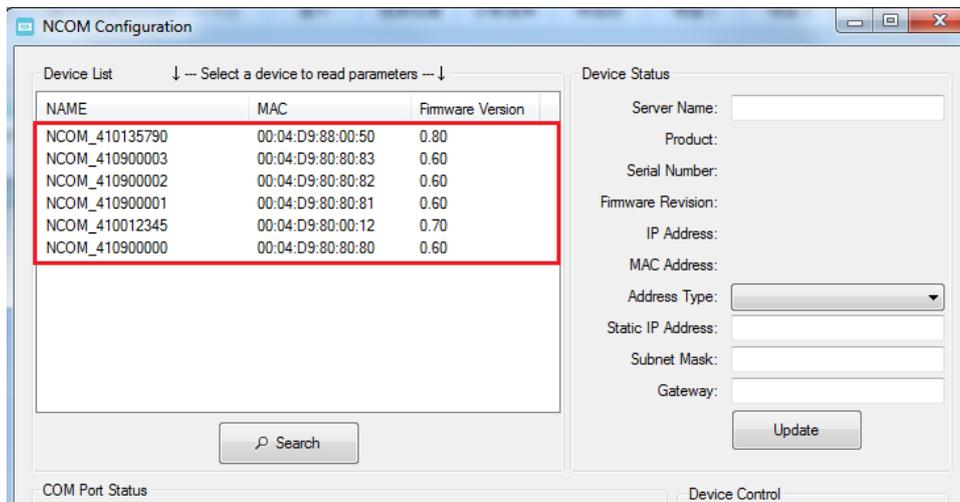
“**Configuration**” (configure all attached NCOM devices).



Clicking on “Configuration Configuration” takes you to the control menu page shown below:



After a few seconds, NCOM Virtual Serial Port Manager will search all attached NCOM devices automatically, and you will find “Device List” information for all NCOM devices.



8.7.1 Selecting an NCOM Device to Configure Parameters

When you select an attached NCOM device to configure the virtual serial port parameters, you will find “Device Status”, “COM Port Status”, “Device Control” and “Configuration Import/Export” on the main window of NCOM Configuration.

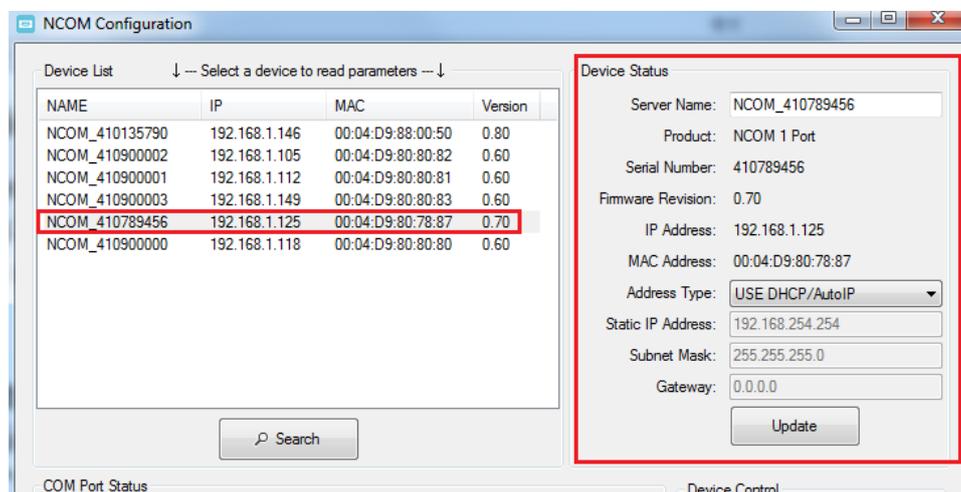
The screenshot displays the NCOM Configuration window with several key sections highlighted in red:

- Device List:** A table listing devices with columns for NAME, IP, MAC, and Version. The device NCOM_410789456 is selected and highlighted.
- Device Status:** A panel showing details for the selected device, including Server Name, Product, Serial Number, Firmware Revision, IP Address, MAC Address, Address Type, Static IP Address, Subnet Mask, and Gateway.
- COM Port Status:** A panel for configuring serial and network settings for Port 1, including Mode, Baud Rate, Data Size, Parity, Stop Bits, Flow Control, Network Mode, Local/Dest. IP/Port, Timeout, Keep alive, and UDP settings.
- Device Control:** A panel with buttons for Open WEB, Reboot Device, Restore Defaults, and Firmware Update.
- Configuration Import/Export:** A panel with buttons for Import and Export.

NAME	IP	MAC	Version
NCOM_410135790	192.168.1.146	00:04:D9:88:00:50	0.80
NCOM_410900002	192.168.1.105	00:04:D9:80:80:82	0.60
NCOM_410900001	192.168.1.112	00:04:D9:80:80:81	0.60
NCOM_410900003	192.168.1.149	00:04:D9:80:80:83	0.60
NCOM_410789456	192.168.1.125	00:04:D9:80:78:87	0.70
NCOM_410900000	192.168.1.118	00:04:D9:80:80:80	0.60

8.7.2 Device Status

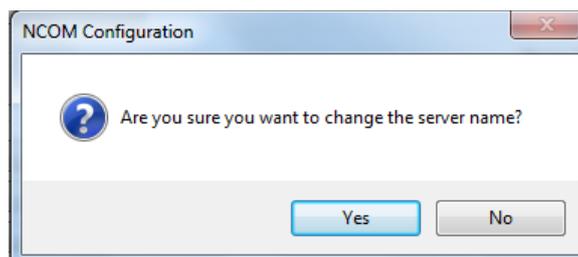
The “Device Status” section indicates the following information: “Server Name”, “Product”, “Serial Number”, “Firmware Revision”, “IP Address”, “MAC Address”, “Address Type”, “Static IP Address”, “Subnet Mask” and “Gateway”.



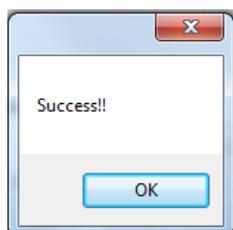
In “Device Status”, you can modify “Server Name”, “Address Type”, “Static IP Address”, “Subnet Mask” and “Gateway” depending on your application.

To change the serial device server name, modify the “Server Name” under “Device Status”. You need to enter a new name (such as NCOM-113-M) and click “Update” to set your serial device server to a new name.

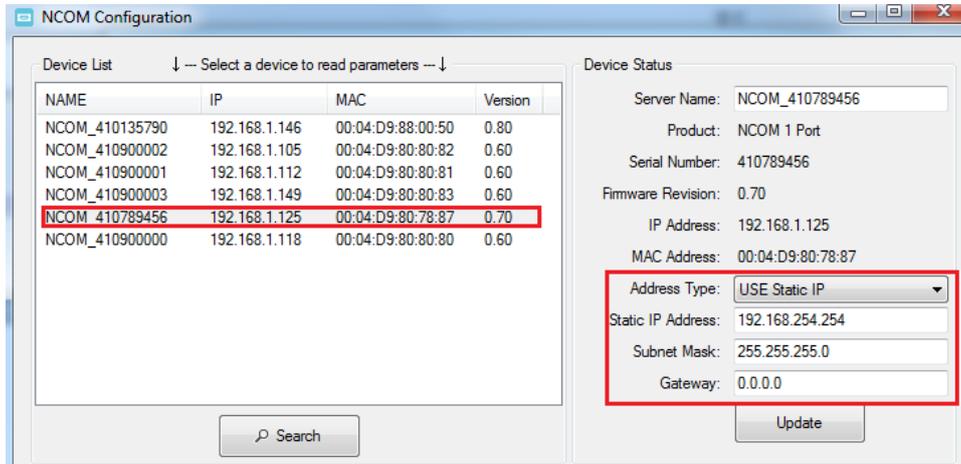
After clicking “Update” a confirmation message will ask “Are you sure you want to change server name?”. Confirm by clicking “Yes”.



After NCOM-113-M successfully changes to a new name, a message will indicate “Success!!”. Click on “OK” to finish the procedure.

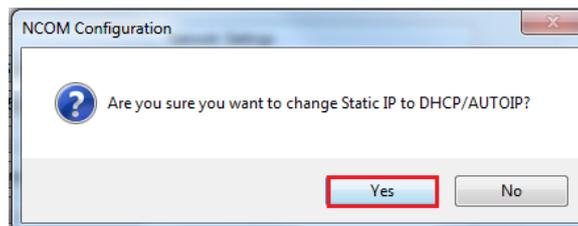
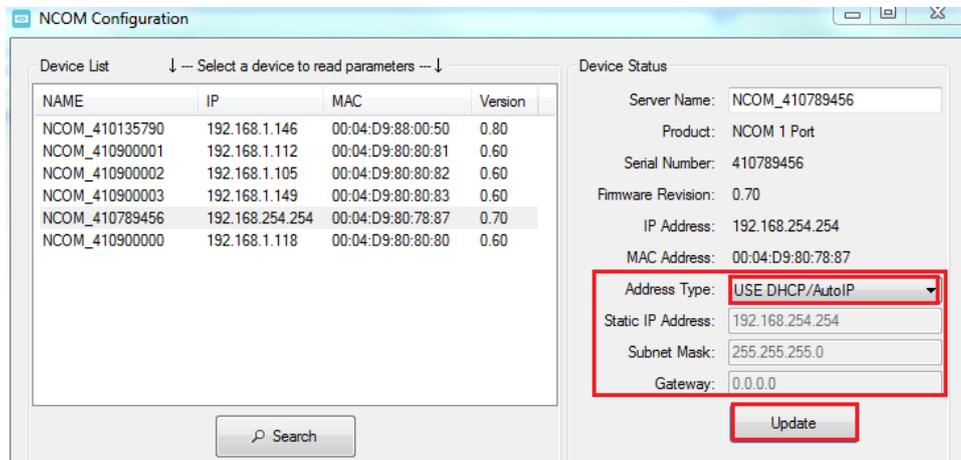


NCOM-113-M serial device server is configured with a default private IP address (static IP address): **192.168.254.254**.



Many networks work in a DHCP network, which assigns IP addresses for client computers and NCOM-113-M automatically. In this case, you need to set NCOM-113-M's IP address to DHCP/AutoIP mode.

Under "Device Status" of NCOM Configuration, select "USE DHCP/AutoIP" under "Address Type:" and click "Update". A message will ask "Are you sure you want to change Static IP to DHCP/AUTOIP?", confirm by clicking "Yes" and NCOM-113-M will be set to DHCP/AutoIP mode.



After successfully setting NCOM-113-M to DHCP/AutoIP mode, a message will indicate "Success!". Click on "OK" to finish changing the IP address type.



When NCOM-113-M is working in a static network environment, you need to set NCOM-113-M to a fixed IP address mode.

Under "Device Status" of NCOM Configuration, select "USE Static IP" under "Address Type:" and enter a new static IP address (such as 192.168.0.1), subnet mask (such as 255.255.255.0) and gateway (such as 0.0.0.0). Afterwards, click "Update" to set NCOM to a new static IP address for static network environments.

After clicking "Update", a confirmation message saying "Are you sure you want to change new Static IP?" will appear. Confirm by clicking "Yes" and NCOM-113-M will be set to a new static IP address.

8.7.3 COM Port Status

The “COM Port Status” section indicates the following information: “Port X”, “Serial Settings” and “Network Settings”.

The screenshot displays the NCOM Configuration application window. At the top, there is a "Device List" table and a "Device Status" panel. The "Device List" table contains the following data:

NAME	MAC	Firmware Version
NCOM_410135790	00:04:D9:88:00:50	0.80
NCOM_410900002	00:04:D9:80:80:82	0.60
NCOM_410900003	00:04:D9:80:80:83	0.60
NCOM_410900001	00:04:D9:80:80:81	0.60
NCOM_410012345	00:04:D9:80:00:12	0.70
NCOM_410900000	00:04:D9:80:80:80	0.60

The "Device Status" panel shows the following information for the selected device (NCOM_410012345):

- Server Name: NCOM_410012345
- Product: NCOM 1 Port
- Serial Number: 410012345
- Firmware Revision: 0.70
- IP Address: 192.168.254.254
- MAC Address: 00:04:D9:80:00:12
- Address Type: USE Static IP
- Static IP Address: 192.168.254.254
- Subnet Mask: 255.255.255.0
- Gateway: 0.0.0.0

The "COM Port Status" section is highlighted with a red box and contains the following settings:

- Port 1**
- Serial Settings**
 - Mode: RS-232
 - Baud Rate: 115200
 - Data Size: 8
 - Parity: None
 - Stop Bits: 1
 - Flow Control: None
- Network Settings**
 - Mode: RFC2217 - Server
 - Local Port: 2000
 - Dest. IP: 0.0.0.0
 - Dest. Port: 2000
 - Timeout: 0
 - Keep alive: 10
 - UDP Setting: Use Unicast
 - UDP Local Port: 4000
 - UDP Dest. IP: 0.0.0.0
 - UDP Dest. Port: 4000
 - Multicasting IP: 224.0.0.0

Buttons for "Set Default" and "Update" are present for both Serial and Network Settings. The "Device Control" section includes buttons for "Open WEB", "Reboot Device", "Restore Defaults", and "Firmware Update". The "Configuration Import/Export" section includes "Import" and "Export" buttons. A "Close" button is located at the bottom center of the window.

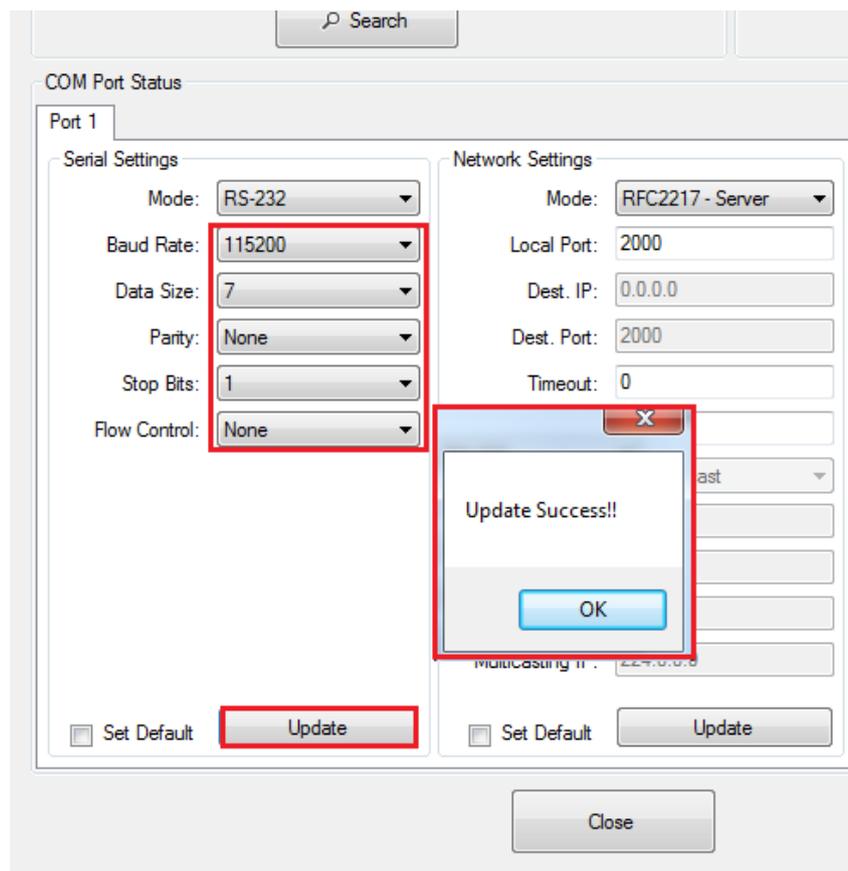
8.7.3.1 Changing Serial Parameters

To change serial parameters under “Serial Settings” for a virtual serial port, click “Port1” under “COM Port Status”. You can modify the following serial parameters:

Serial Parameter	Setting	Default Values
Mode	RS-232, RS-422, RS-485 4W, RS-485 2W	RS-232
Baud Rate	300 bps to 921600 bits/S	115200 bits/S
Data Size	5, 6, 7, 8 bits/character	8 bits/character
Parity Check	None, Odd, Even, Mark, Space	None
Stop Bits	1, 2, 1.5 bit(s)	1 bit
Flow Control	None or Hardware	None

Note: The default mode for NCOM-112-M is RS-422.

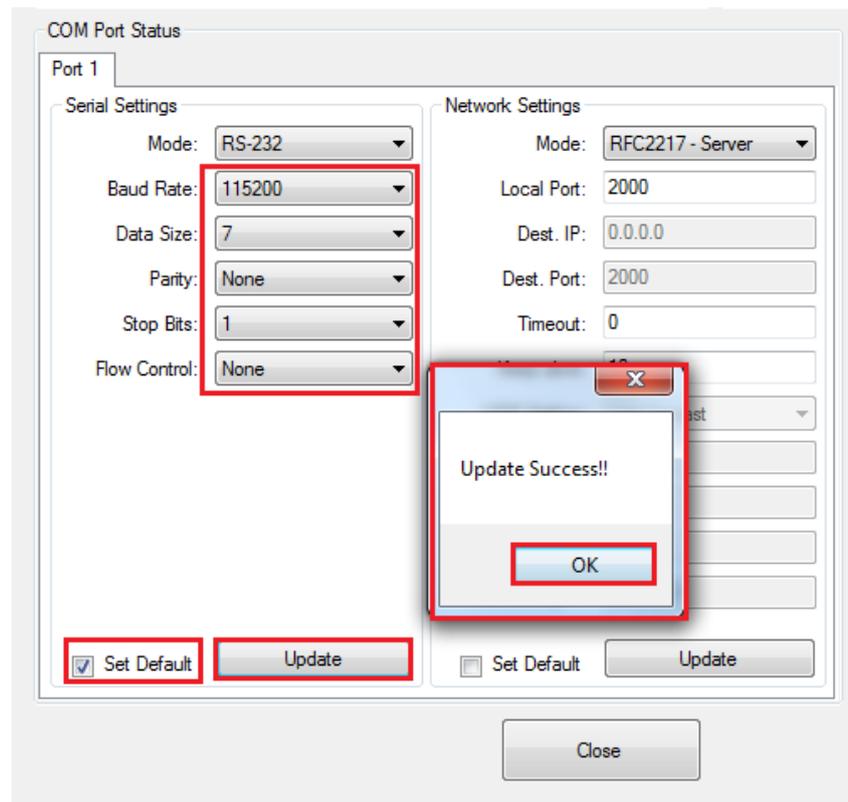
After changing the serial parameters, click “Update” to activate the new serial parameters. When the serial parameters are changed successfully, a message will indicate “Update Success!!”.



Click on “OK” to finish changing the serial parameters.

If you want to save these serial parameters as defaults, you need to check “Set Default” and click on “Update”. When the new serial parameters are saved, a

message will indicate “Update Success!!”.

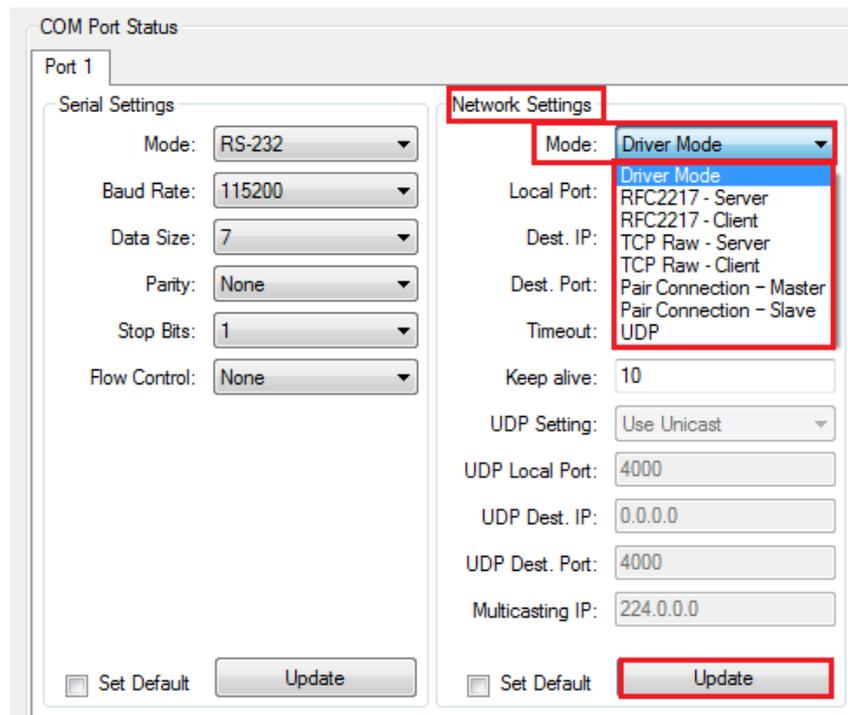


Click on “OK” to finish modifying serial parameters and saving new serial parameters.

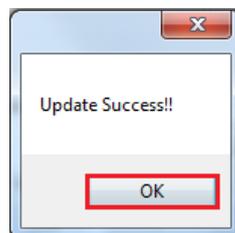
8.7.3.2 Changing Network Operation Mode

To change the network operation mode of a virtual serial port, click “Port 1” under “COM Port Status”. Under “Network Settings”, you may choose “Driver Mode”, “RFC2217 - Server”, “RFC2217 - Client”, “TCP Raw - Server”, “TCP Raw - Client”, “Pair Connection Master Mode”, “Pair Connection Slave Mode” and “UDP” depending on your application.

After selecting an operation mode, click “Update” to set your NCOM-113-M into the proper operation mode.

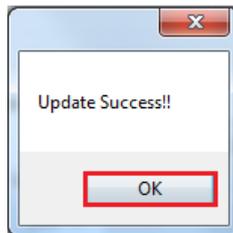
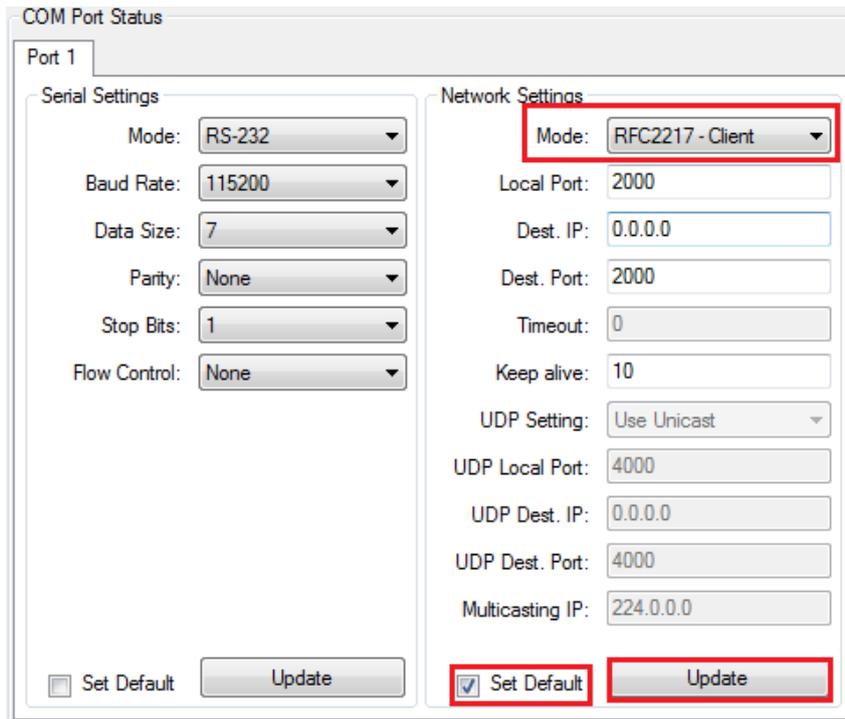


After clicking “Update” to set your NCOM-113-M’s operation mode, a message will indicate “Update Success!!”.



Click on “OK” to finish change operation mode procedure.

If you want to save the new operation mode as defaults, you need to check on “Set Default” and click on “Update”. When the new operation mode is saved, a message will indicate “Update Success!!”.



Click on “OK” to finish changing and saving a new operation mode.

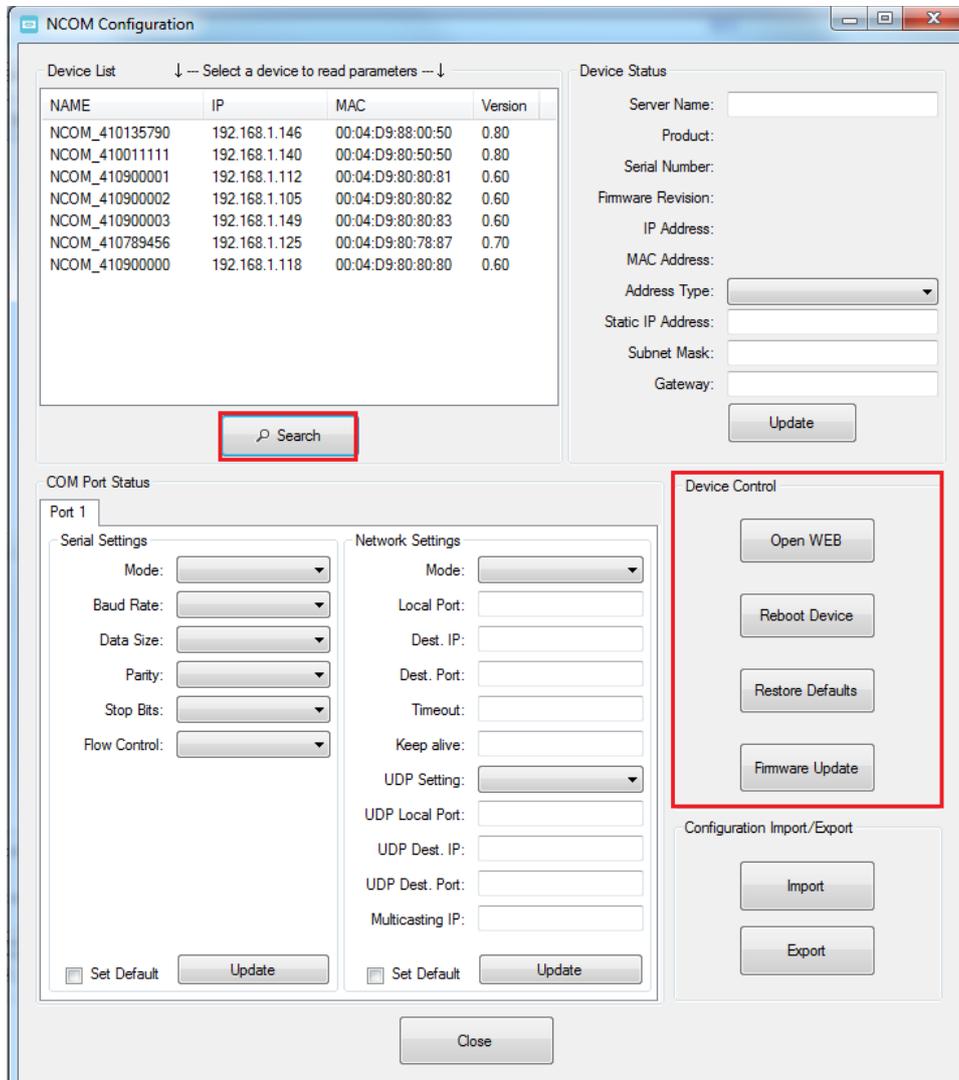
To modify the network settings for a chosen operation mode please refer to Chapter 5 for detailed information. You can also modify the network parameter settings for your NCOM-113-M serial device server.

Following are the default values of network parameters:

Network Parameters	Default Values
Mode	Driver Mode
Timeout	0 seconds
Keep alive time	10 minutes
Address Type	Static IP
Static IP address	192.168.254.254
Subnet Mask	255.255.255.0

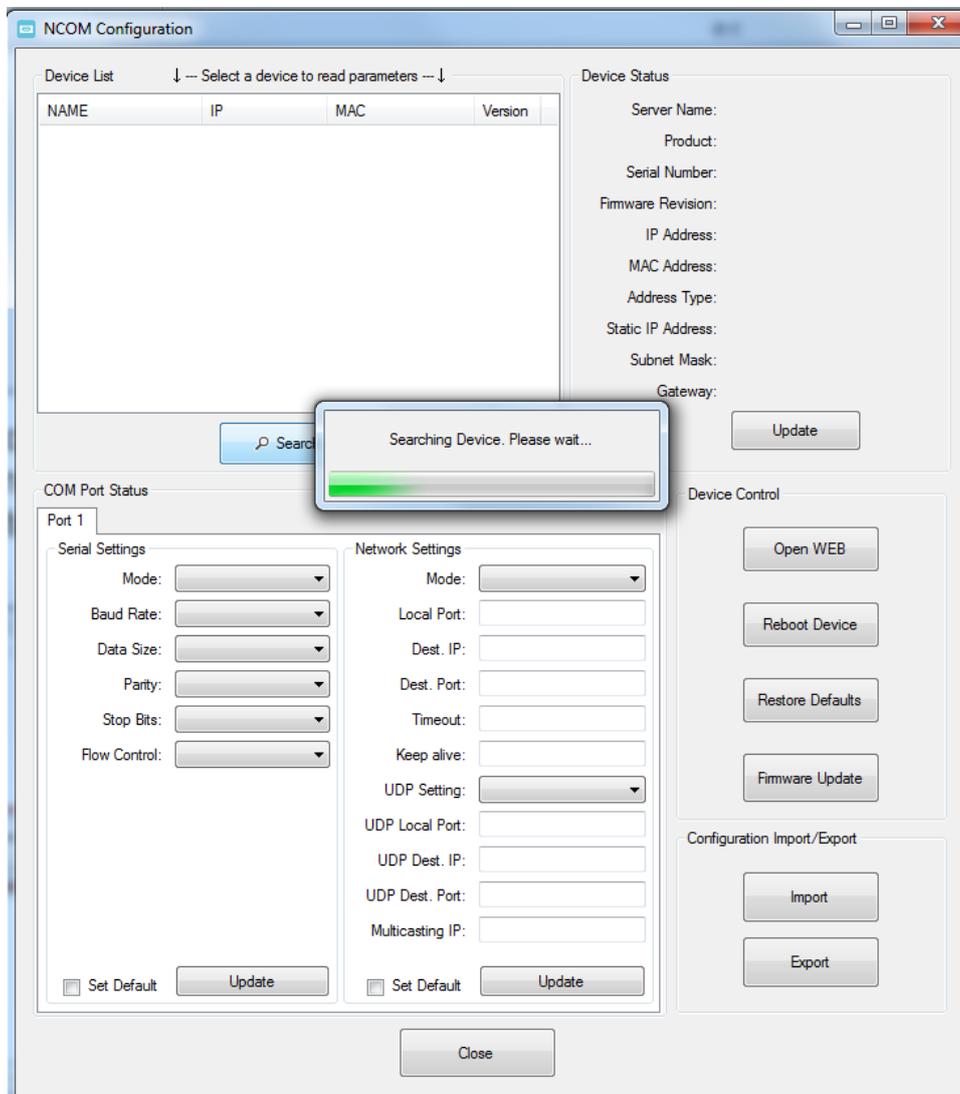
8.7.4 Device Control

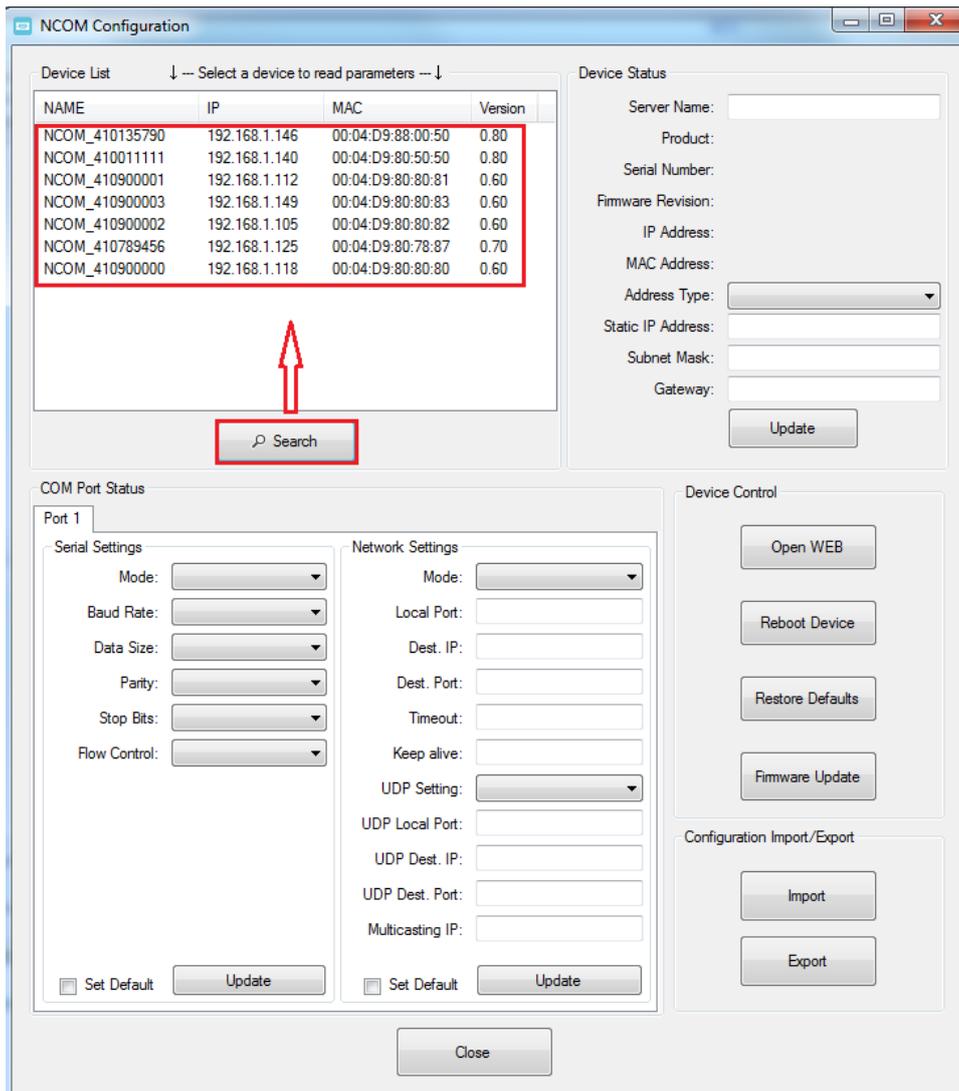
The “Device Control” section contains the “Search Device”, “Open Web”, “Reboot Device”, “Restore Defaults” and “Firmware Update” functions.



8.7.4.1 Manually Search for NCOM Devices

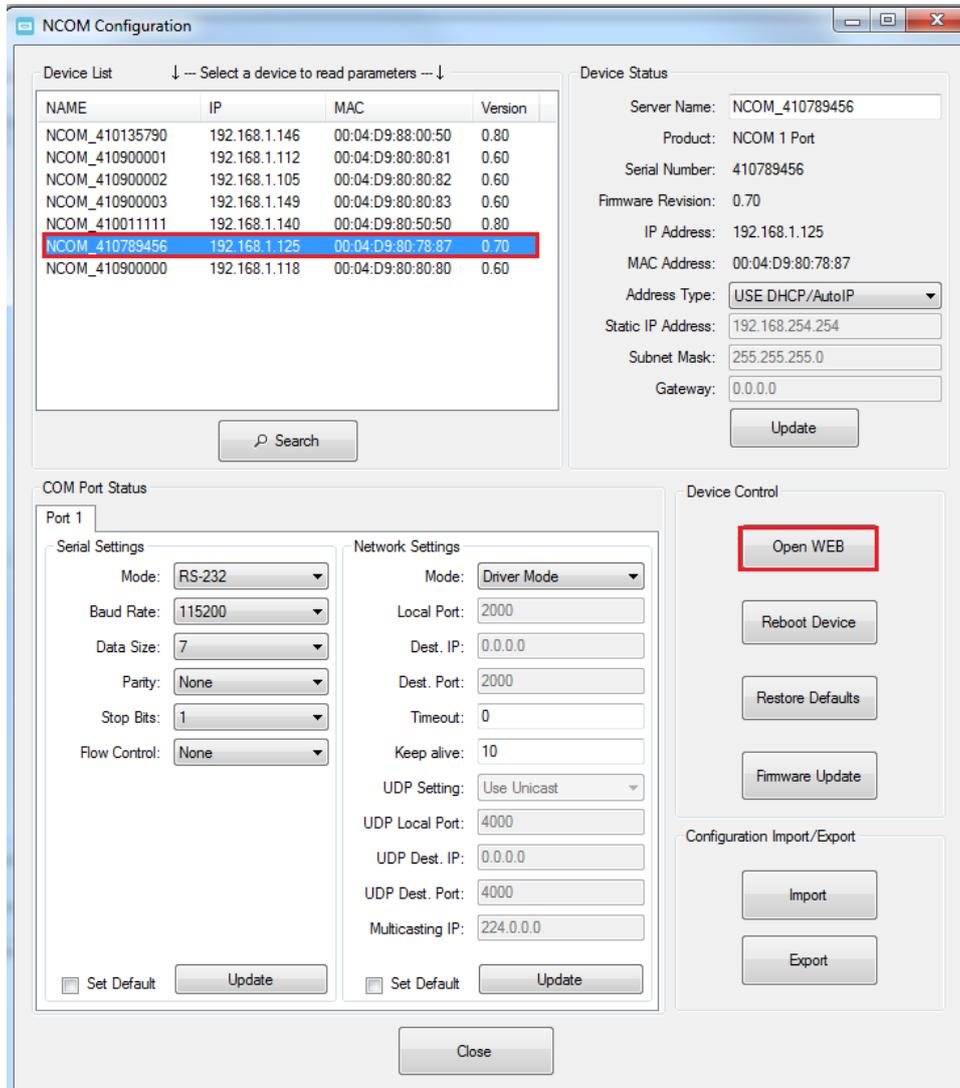
The “Search” button searches for all attached NCOM devices. If a new NCOM device is attached to the network system, you can click “Search Device” to find new NCOM devices.





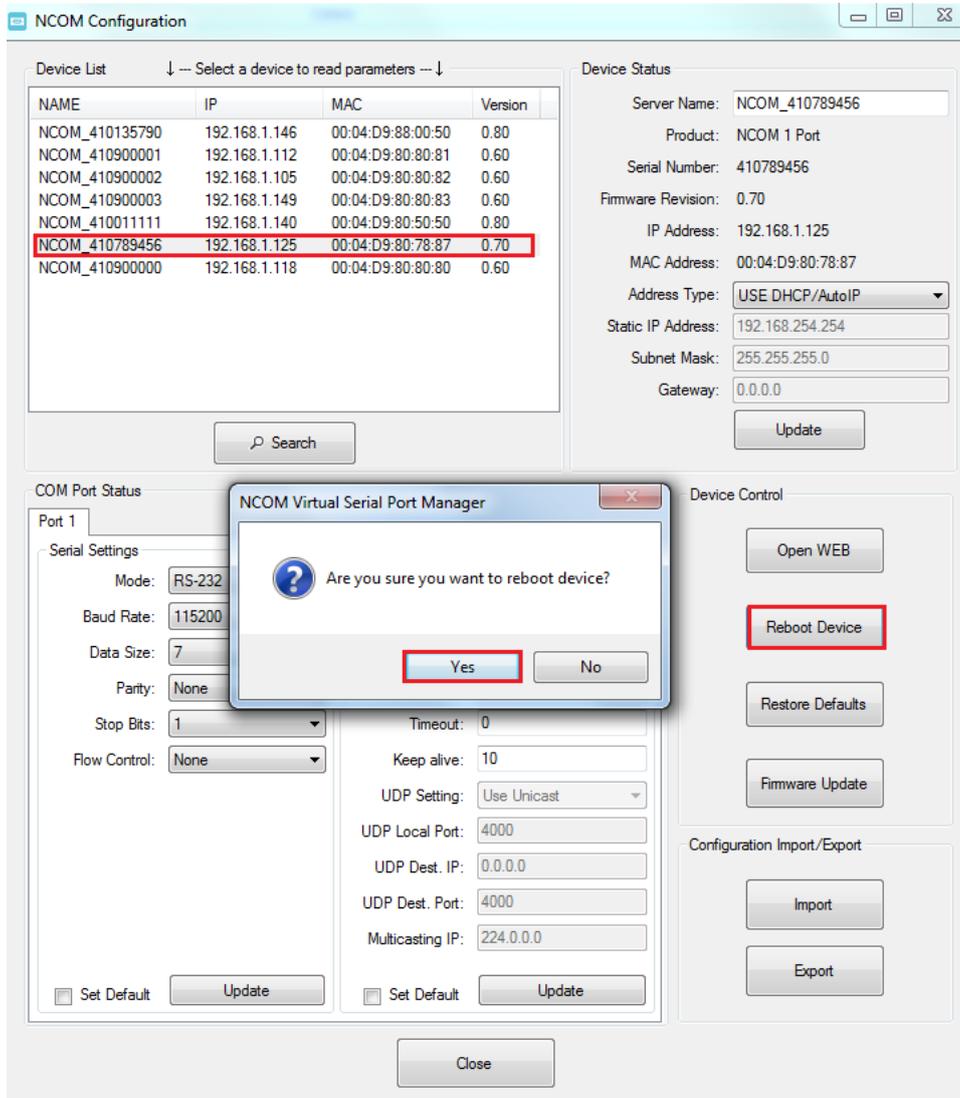
8.7.4.2 Opening the Web Console Interface

The “Open Web” button can be used to open the web console interface to configure NCOM. After selecting an attached NCOM device, click “Open Web” to open web console interface for that particular NCOM device.



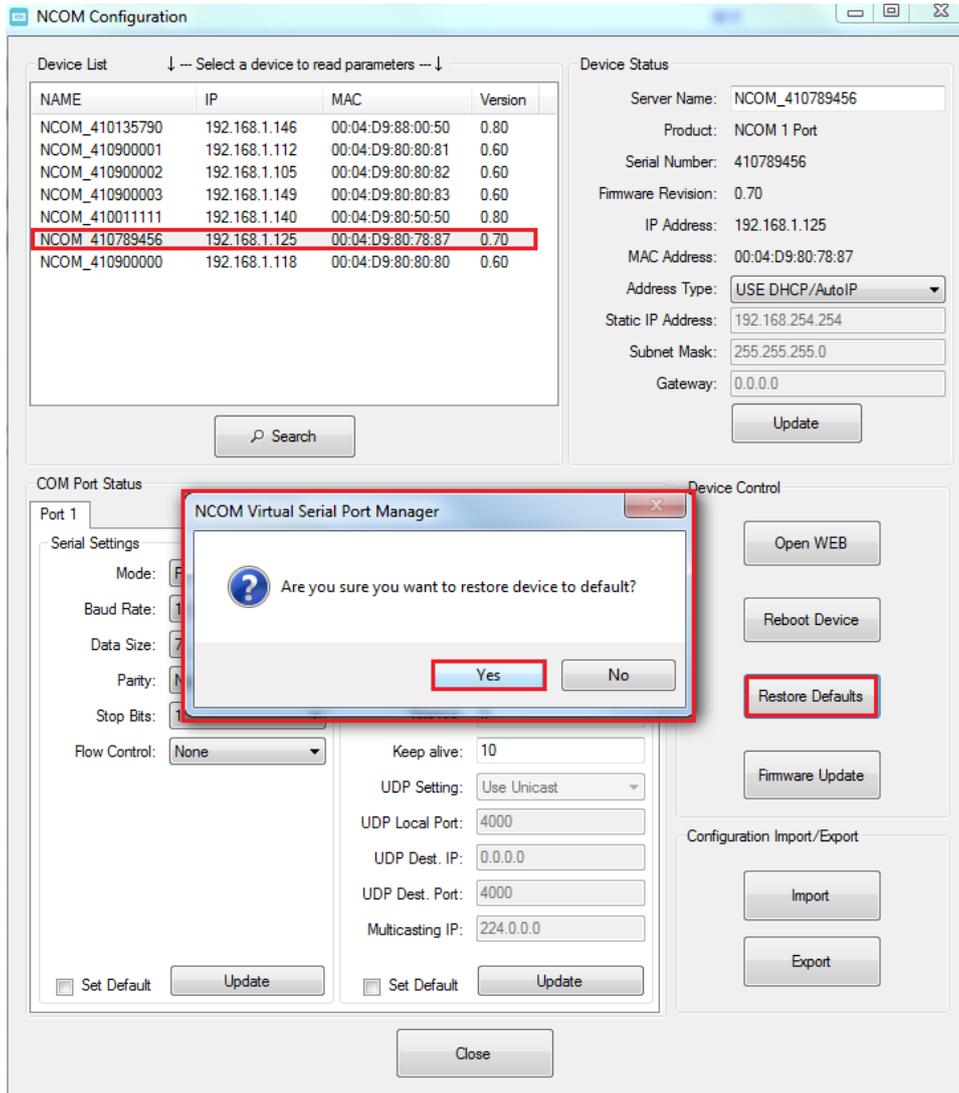
8.7.4.3 Rebooting NCOM Devices

The “Reboot Device” button reboots/resets your NCOM device when you need to. After selecting an attached NCOM device, click “Reboot Device” and a message will ask “Are you sure you want to reboot device?”. Click “Yes” to reboot/reset your NCOM device.

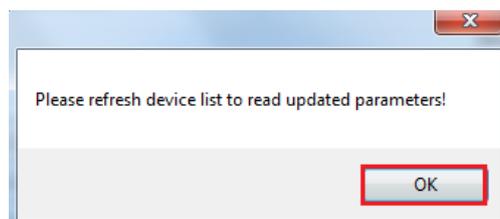


8.7.4.4 Restoring to Factory Defaults

The “Restore Defaults” button restores the firmware to factory defaults. When you select an attached NCOM device, you can restore all options to factory default states by clicking the “Restore Defaults” button; After clicking “Restore Defaults”, a message will ask “Are you sure you want to restore device to default?”. Confirm by clicking “Yes” and the NCOM device will restore all options to factory defaults.



After the NCOM device restores all options to factory default states, a message will indicate “Please refresh device list to read updated parameters!”. Click on “OK” to finish restoring device to factory defaults.



8.7.4.5 Firmware Update Tool

The “Firmware Update” button opens the firmware update tool to upgrade NCOM-113-M firmware contents via Ethernet port. Before you click “Firmware Update”, please go to the web console interface of NCOM device firmware. Enable firmware update interface via Ethernet port in order to upgrade NCOM-113-M.

Under the web console interface, select “FIRMWARE UPDATE” and click “Update” to enable the firmware update interface to upgrade to a new firmware.

The screenshot shows the TITAN web console interface. The top header includes the TITAN logo and URL (http://www.titan.tw/) on the left, and the NCOM logo on the right. A left sidebar contains navigation options: HOME, PORT 1 SETTINGS (with sub-items SERIAL SETTINGS and NETWORK SETTINGS), SYSTEM SETTINGS (with the FIRMWARE UPDATE option highlighted in a red box), CHANGE PASSWORD, ACCESSIBLE IP SETTINGS, and REBOOT. The main content area is titled "Status" and lists the following information: Server Name: NCOM_410012345, Product Name: NCOM, Serial Number: 410012345, Firmware Revision: 0.60, IP Address: 192.168.1.134, MAC Address: 00-04-D9-80-00-12, and Uptime: 0 days 00:38:34. Below the status information is a section titled "Firmware Update" with a red warning message: "Warning!! Before you update firmware. You should get all connections closed!!". A red-bordered "Update" button is located at the bottom right of this section.

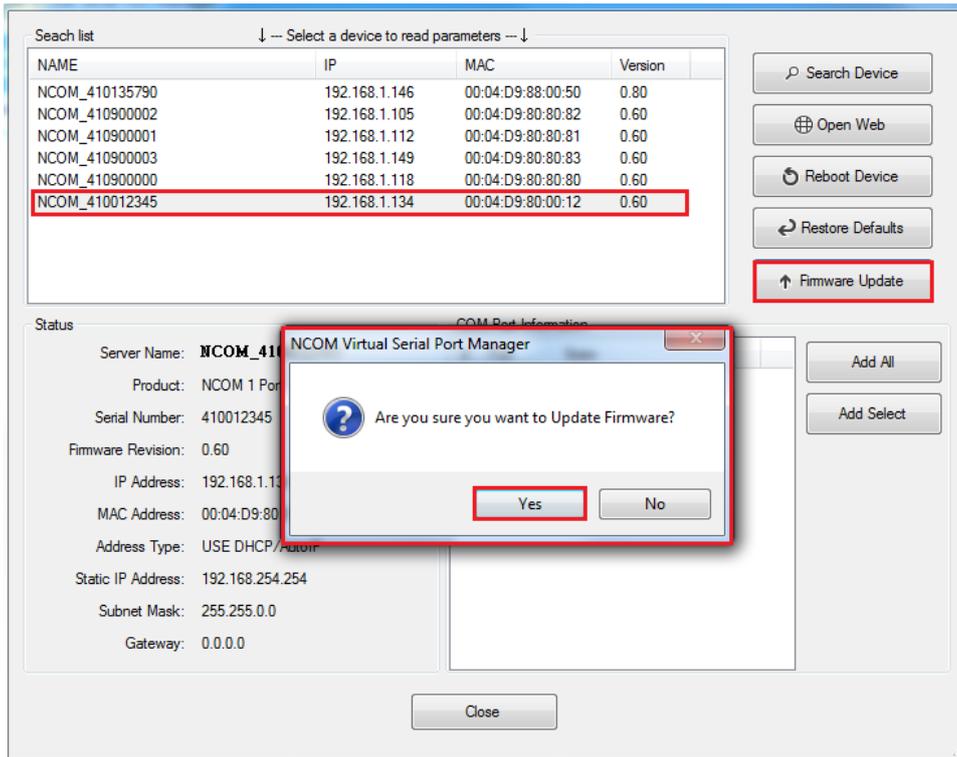
When you click “Update”, you will find the following message. The web console interface then waits for the firmware update tool program to launch in order to continue upgrading NCOM-113-M’s firmware.

The screenshot shows the TITAN web console interface during the firmware update process. The top header is identical to the previous screenshot. The main content area is titled "Firmware Update" and contains a table with the following information:

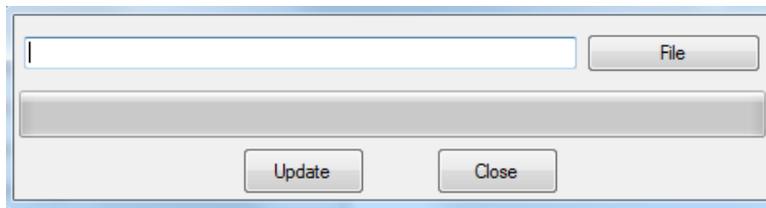
Name:	NCOM_410012345
Firmware Revision:	0.60
MAC Address:	00-04-D9-80-00-12

Below the table, a note states: "Note: The configuration web server has now been disabled and will not respond until the firmware update completes or the module is reset."

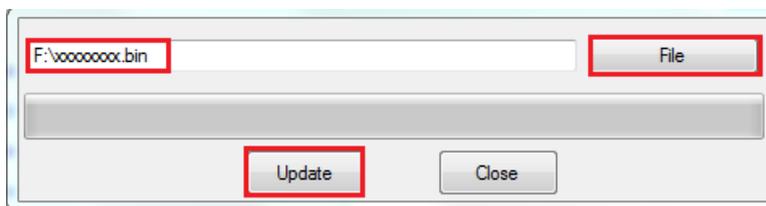
After enabling the firmware update interface, please select this NCOM device then click the “Firmware Update” button.



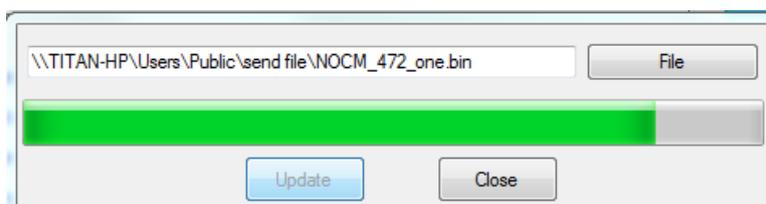
When you click “Firmware Update”, a message will ask “Are you sure you want to update firmware?”. Confirm by clicking “Yes” and the message “Input new firmware file” will appear.



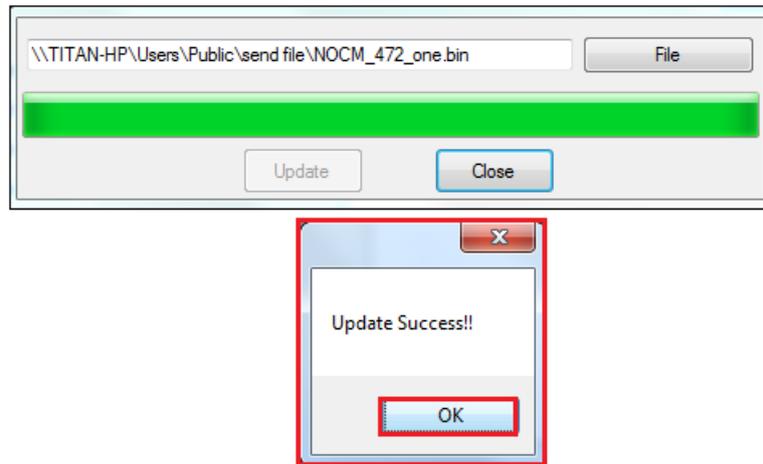
Use the “File” button to browse to the new firmware file and click on “Update” to start upgrading NCOM-113-M’s device firmware.



While upgrading, you will find the following message.



After successfully upgrading the firmware contents, there will be a message stating “Update Success!!”.



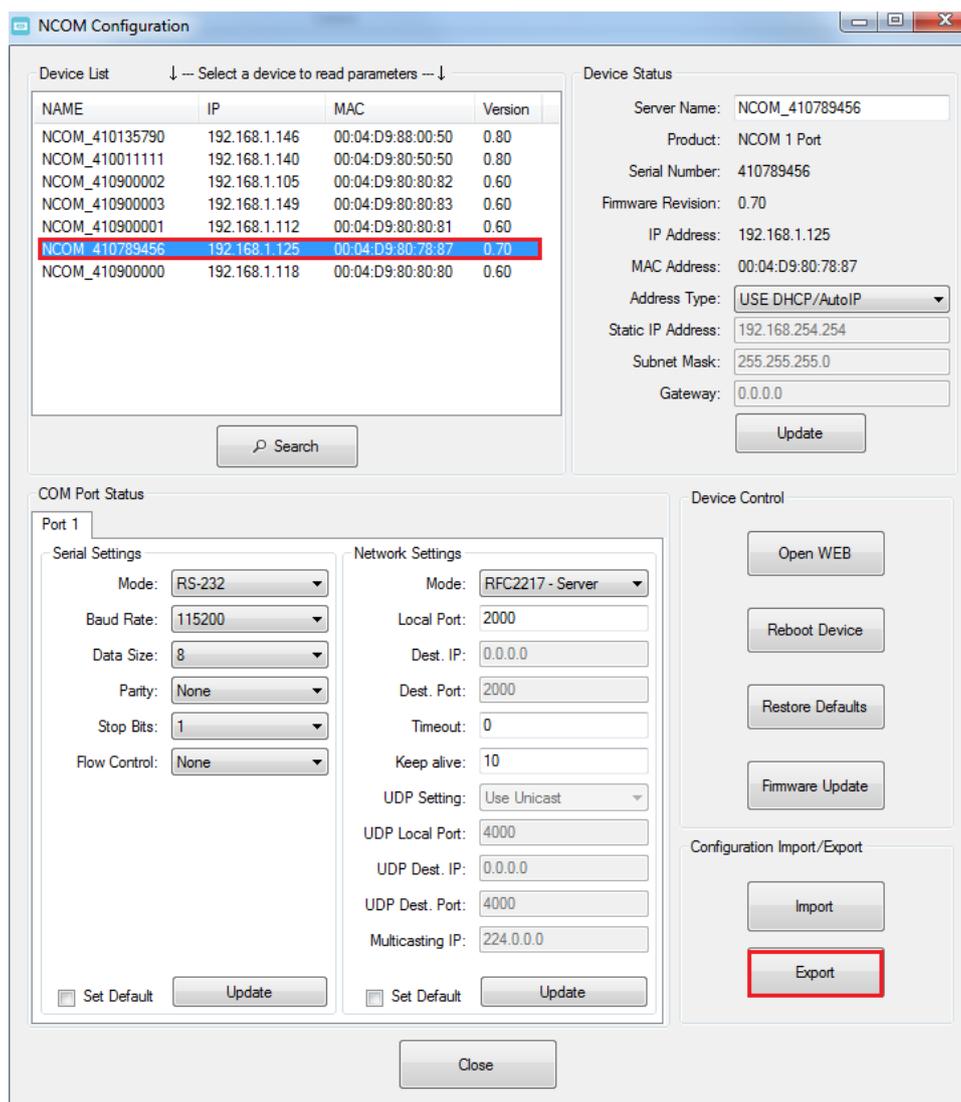
Click on “OK” to finish the firmware update procedure.

8.7.5 Importing/Exporting Configuration Settings

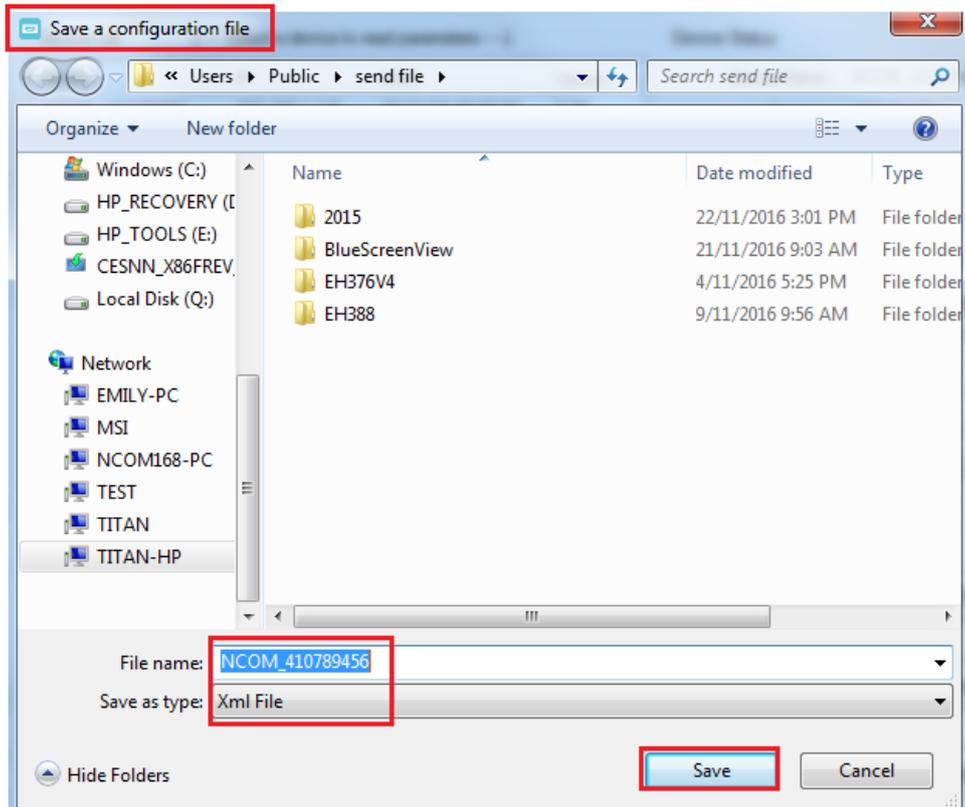
The “Configuration Import/Export” function allows you to back up and recover your NCOM device configuration settings.

8.7.5.1 Exporting Configuration Settings

Select an attached NCOM device then click the “Export” button.

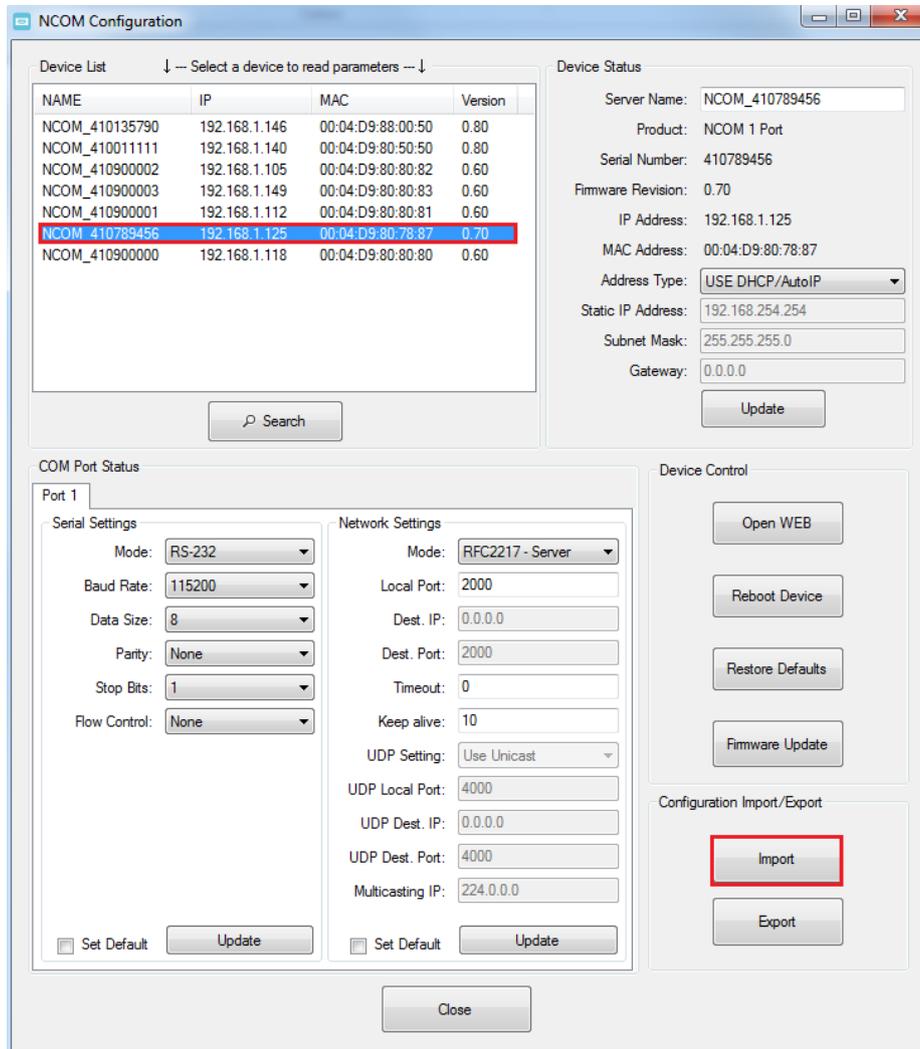


After you click “Export” you will find a “Save a configuration file” page. Click on “Save” to store the NCOM device configuration data to a NCOM_XXXXXXXXX.xml file.

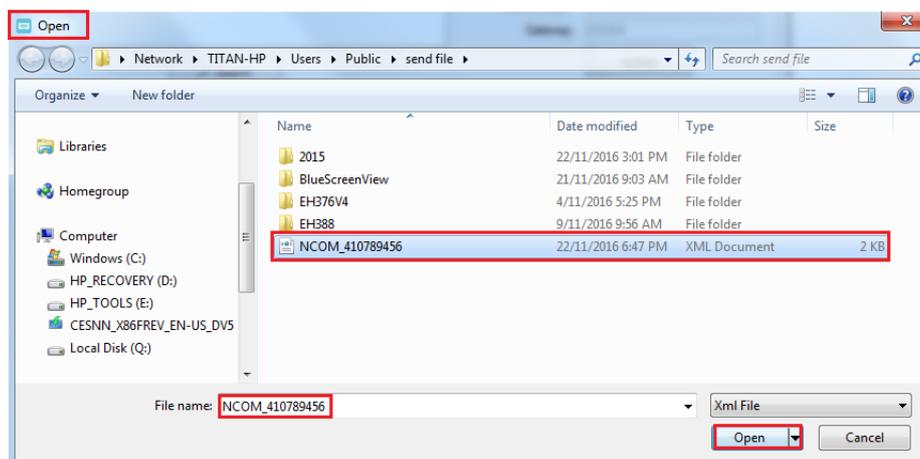


8.7.5.2 Importing Configuration Settings

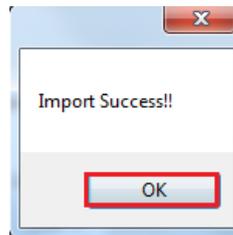
Select an attached NCOM device then click the “Import” button.



After you click “Import” you will find an “Open” page, select a NCOM configuration file and click “Open” to start uploading configuration data into NCOM.



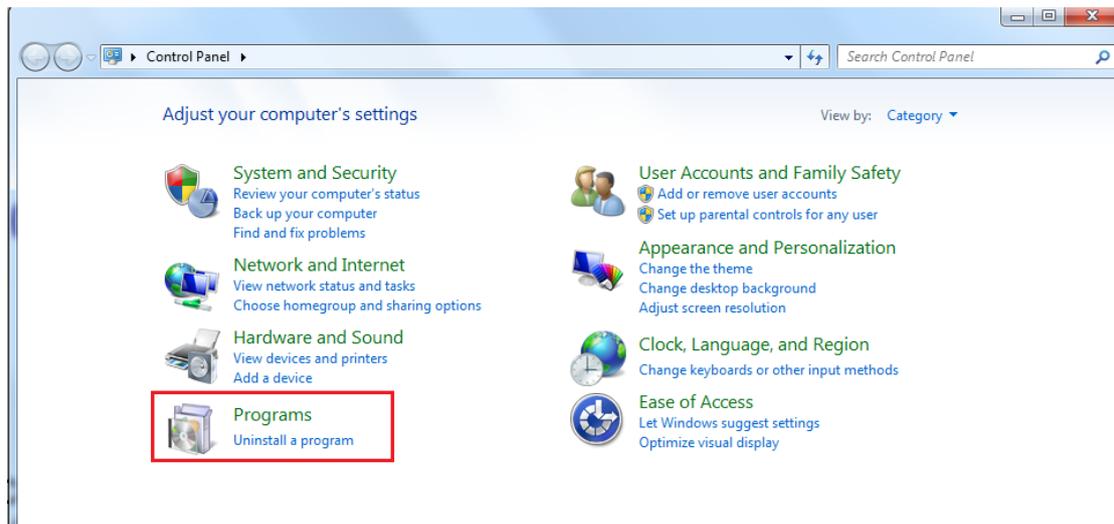
After all configuration data is uploaded into NCOM device, a message will indicate "Import Success!!". Click on "OK" to finish importing configuration data.



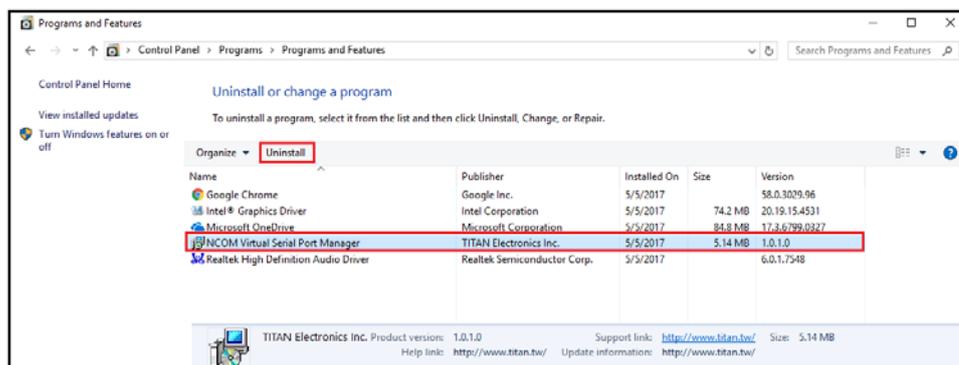
9. NCOM VIRTUAL SERIAL PORT MANAGER AND DRIVER UNINSTALLATION

Uninstalling NCOM Virtual Serial Port Manager and Virtual COM Port Driver

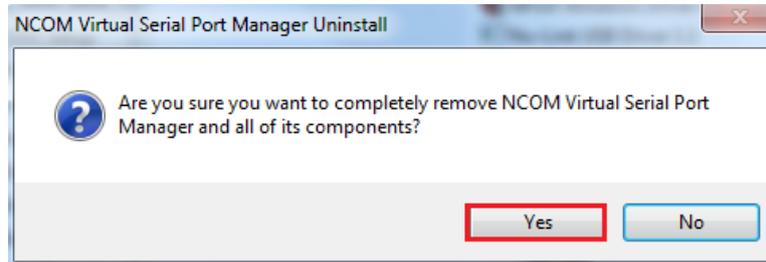
To uninstall NCOM Virtual Serial Port Manager and virtual serial port driver, click the "Start" button and navigate to "Control Panel". Choose "Uninstall a program" under "Programs".



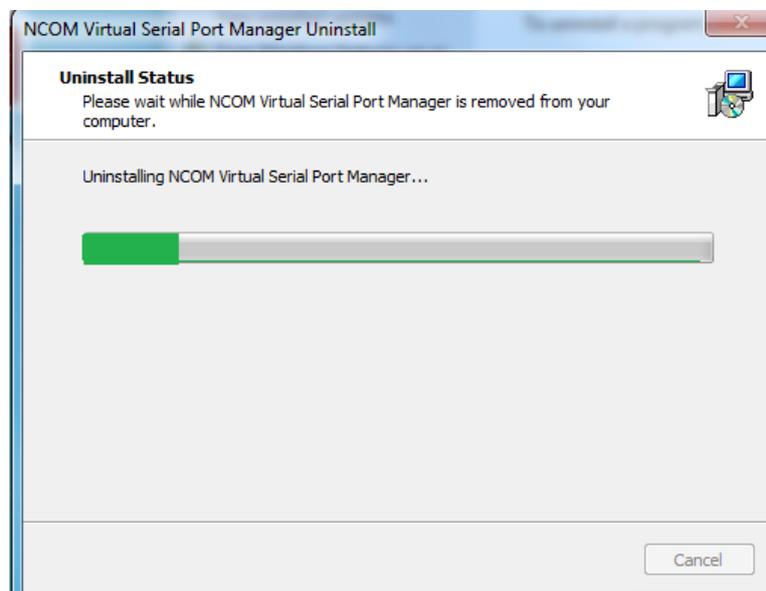
After you click "Uninstall a program", a page with a list of all your installed programs will be shown. Select "NCOM Virtual Serial Port Manager" and click on "Uninstall" to uninstall NCOM Virtual Serial Port Manager and virtual serial port driver.



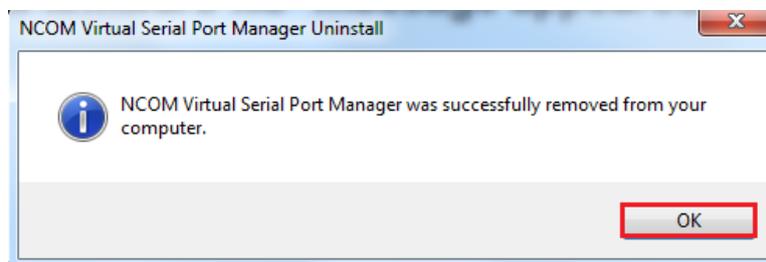
When you click on “Uninstall”, a message will ask “Are you sure you want to completely remove NCOM Virtual Serial Port Manager and all of its components?”. Confirm by click “Yes”.



When uninstalling NCOM Virtual Serial Manager Port and virtual serial port driver, you will find the following message.



After successfully removing NCOM Virtual Serial Port Manager and virtual serial port driver, a message stating that “NCOM Virtual Serial Port Manager was successfully removed from your computer” will be shown.



Click on “OK” to finish removing NCOM Virtual Serial Port Manager and virtual serial port driver.