SYUR86N-H1
TCP/IP UHF+HF RFID standard Reader
Manual

Version 01.12
2022/03/10

I. Features & Specification

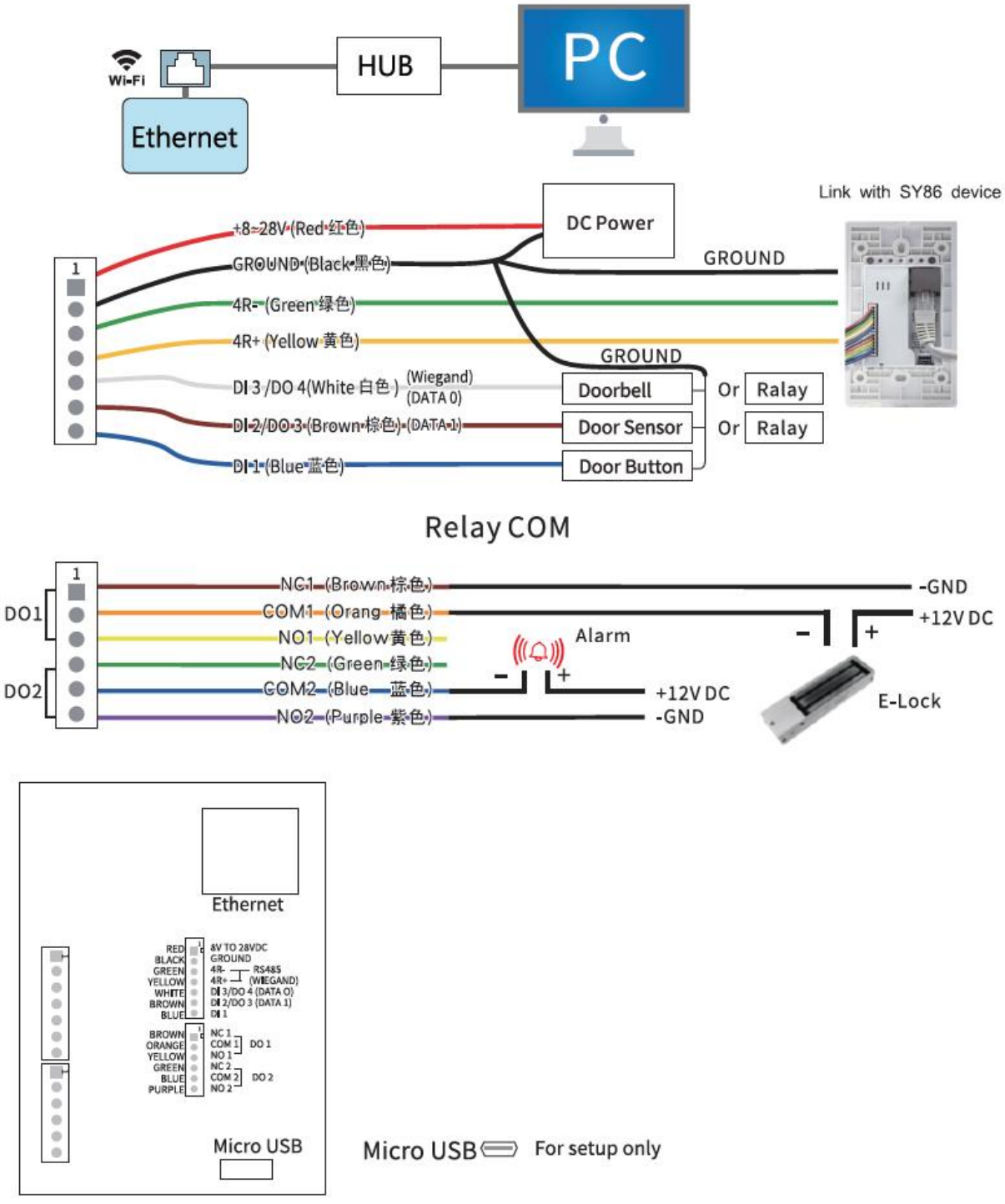
Feature:

- Standard 86.0(W)x86.0(H) mm
- Multi-mode access control
- Support for full 840 to 960 MHz UHF RFID carrier frequency range to accommodate worldwide regulations
- Compatible with EPC Class 1 Gen 2;ISO-18000-6C
- Support ISO15693 / ISO14443A (Mifare) / ISO14443B / DESFire / NTAG203
- Provide protocol to develop.

Specification:

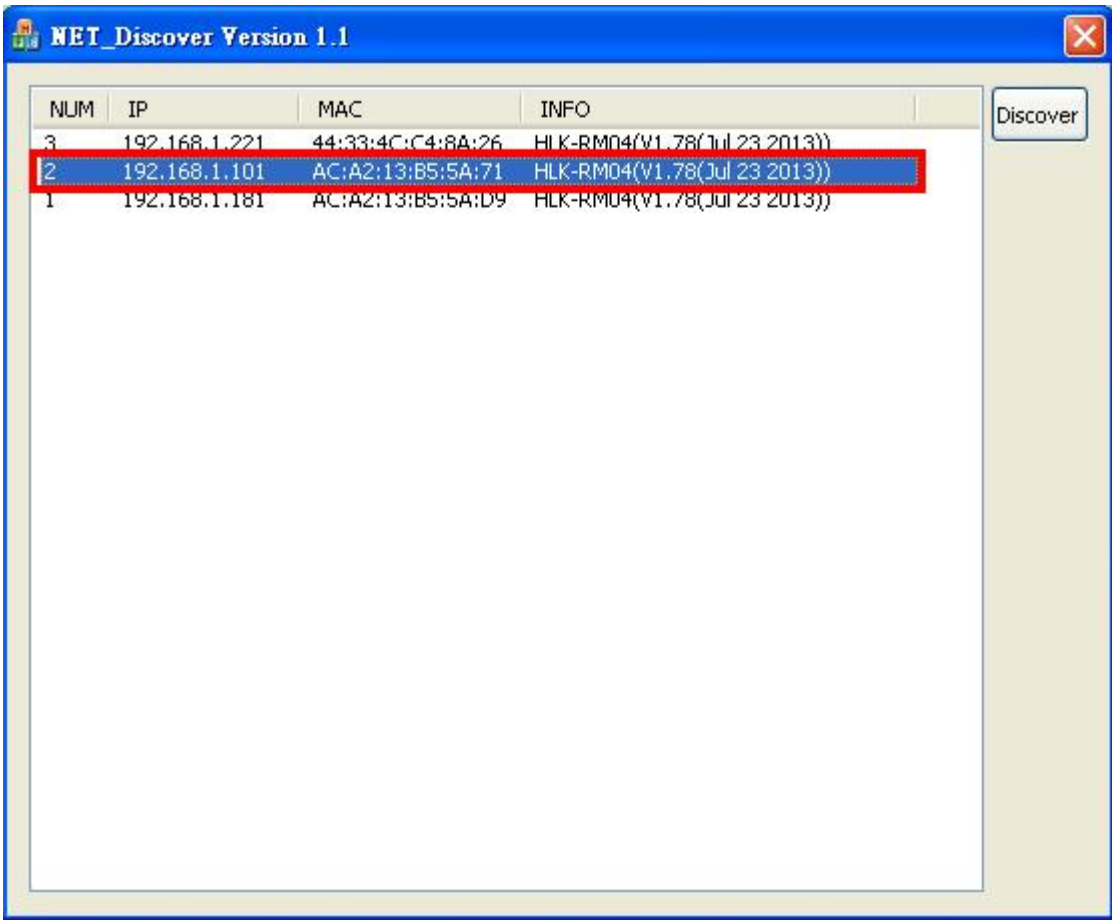
Frequency	840~960MHz + 13.56MHz
Interface	RS485 / Wiegand / RS485 modbus
Wiegand	Wiegand (support 26/32/34/35/37/42/66 bits)
RS485 baud rate	19,200 bits/sec (4,800~460,800)
Status Indicator	Tricolor LED(RGB) & Beeper
IR Sensor	1 IR sensor for waving hand to access door (adjustable range 0~10cm)
Digital Input	Up to 3 (1 DI+2 no-voltage DI share the same port with Wiegand)
Digital Output	Up to 4 (2 Relay output+ 2 open collector DO share the same port with Wiegand)
UHF Protocols	EPC Class 1 Gen 2; ISO 18000-6C
UHF Read range	Up to 60 cm (depends on tag's antenna)
HF Protocols	ISO15693 / ISO14443A / ISO14443B / DESFire / NTAG203
HF Read range	Up to 5 cm
ID	0001~9999
Power Supply	9 ~28 VDC (12 VDC)
Power consumption	1W~6W
Operating temperature	-10°C to 60°C
Dimensions (mm)	86 x 86 x 41.6mm

II. Wiring Diagram



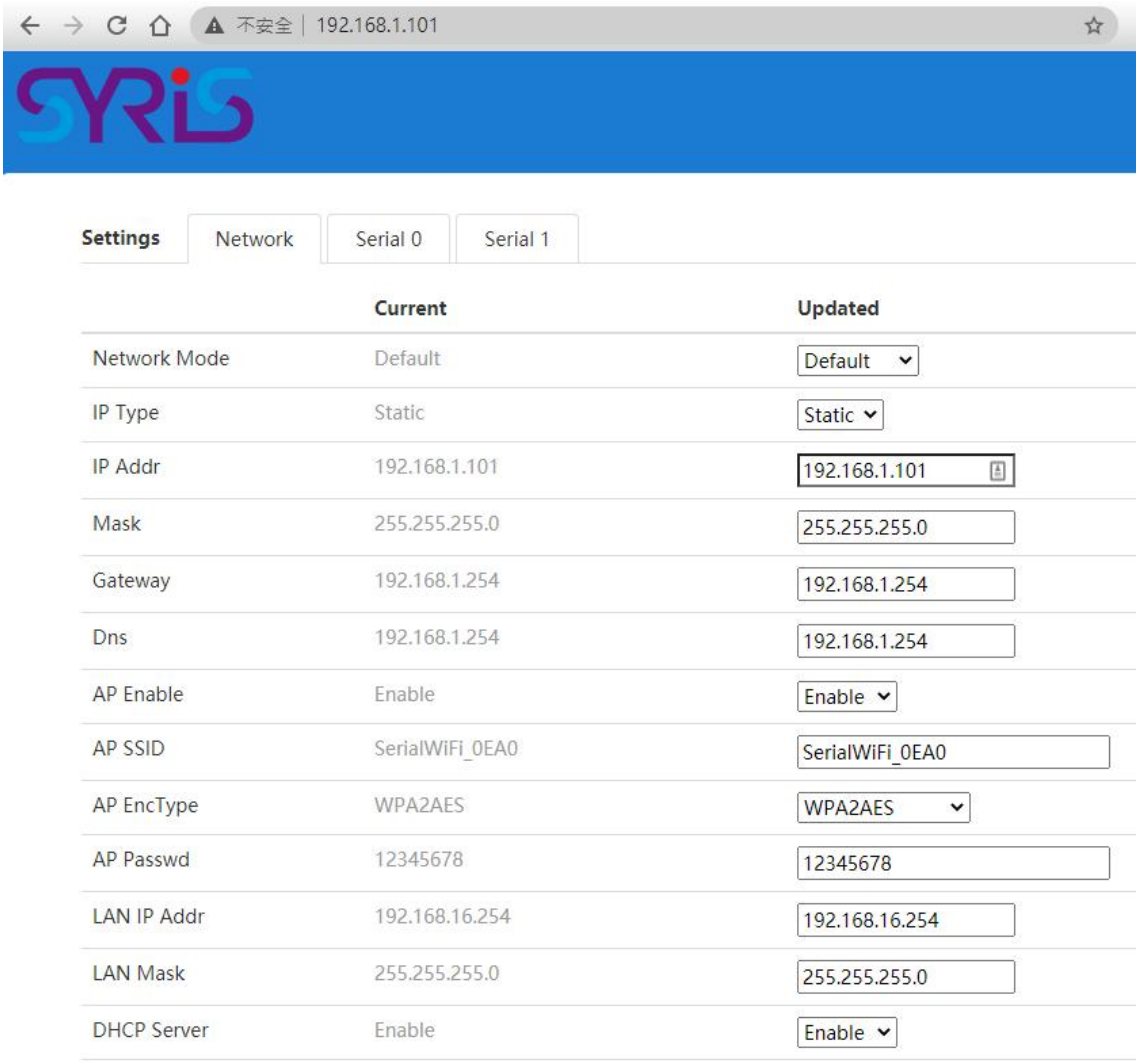
III. Network Parameter Setting

1. Execute “NET_Discover_V0110.exe” and press Discover to search SY86N series product.
2. Factory default IP is “192.168.1.101”. User can check the MAC address from product sticker with IP to confirm the device.

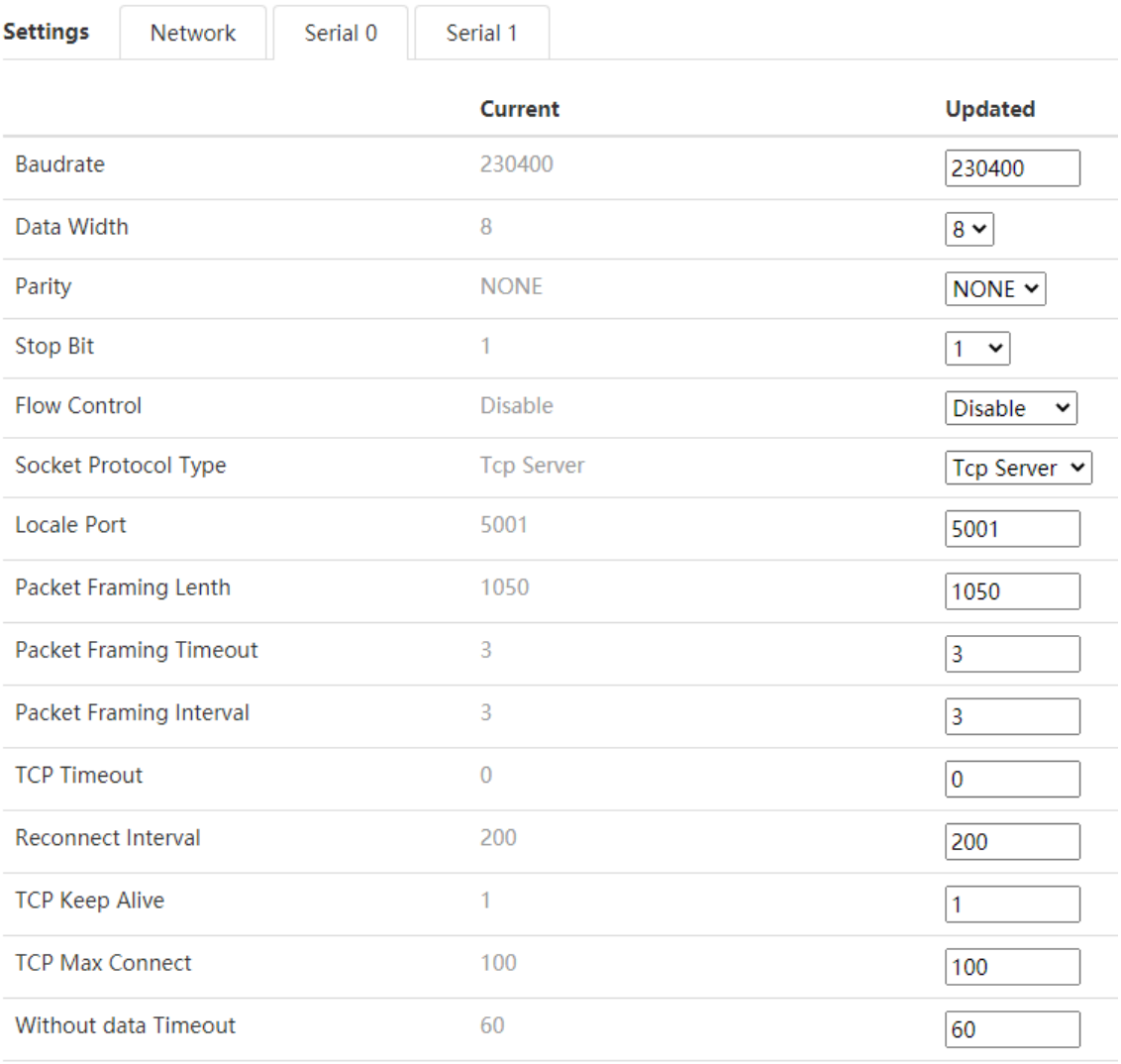


3. Double click IP (192.168.1.101) to open the web configure page(http://192.168.1.101)

Default login ID / Password : admin / admin



4. Default Net Mode is the same as the following. User can modify Net Mode and other parameters. If device cannot communicate properly after setting, user can reset NET module via Micro USB.



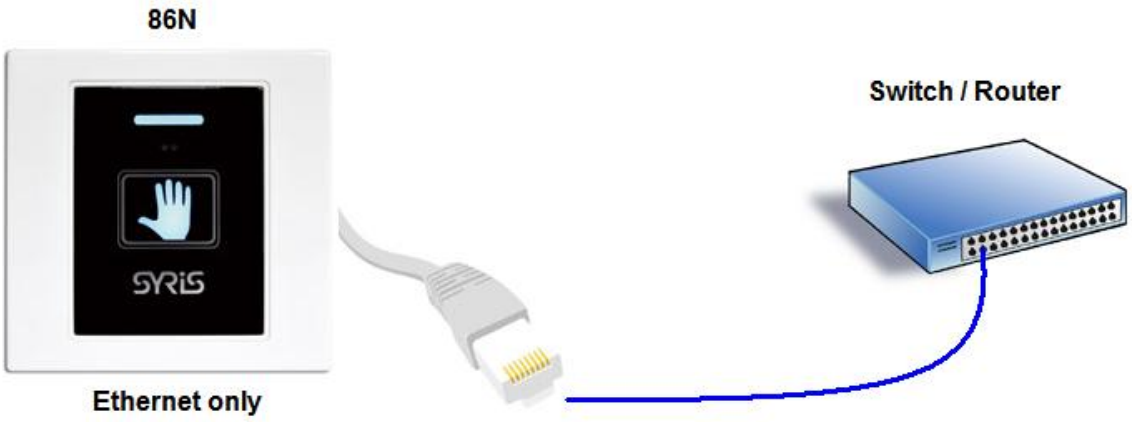
Communication Parameter	Factory Default
Serial Configure	230400,8,n,1
Serial Framing Length	1050
Locale/Remote Port Number	5001

IV. Network Mode Switch

86N series device support 4 network modes: Default、ETH(Ethernet)、Wi-Fi(STA)

Default	Ethernet (DHCP) +Wi-Fi AP mode
ETH	**Ethernet only**
WIFI(STA)	Wi-Fi client mode

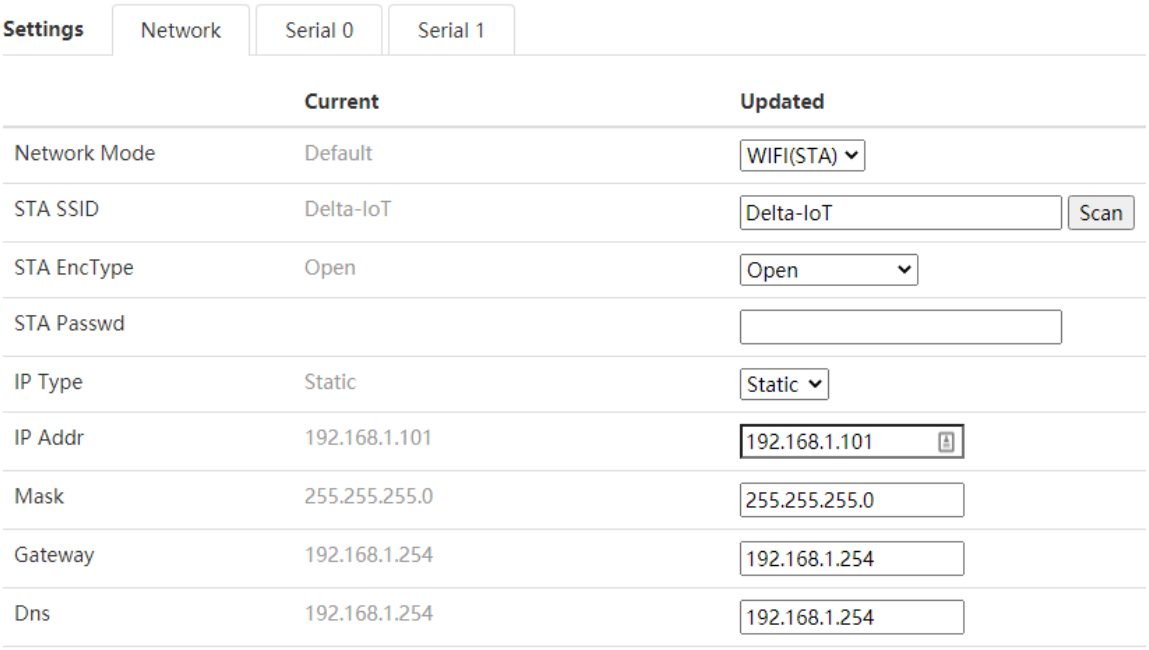
1. **ETH**：Factory default is **ETH-SERIAL. (Standard TCP/IP Reader)**



When user modify the IP and click on Apply button, device will reboot and apply the setting after 30 seconds.

	Current	Updated
Network Mode	Default	ETH
IP Type	Static	Static
IP Addr	192.168.1.101	192.168.1.101
Mask	255.255.255.0	255.255.255.0
Gateway	192.168.1.254	192.168.1.254
Dns	192.168.1.254	192.168.1.254

2. WIFI(STA)：86N can be set to communicate via Wireless AP without Ethernet.



STA SSID: Enter the SSID from AP you will connect to network.

Scan: User can scan AP in range of 86N and select one to connect. But user cannot scan the AP after changing default network mode (Ethernet only) to Wi-Fi (Client). 86N need to power off / on to enable the scan function.

STA EncType : Select Encrypt type for AP connection.

Password: Enter password for AP.

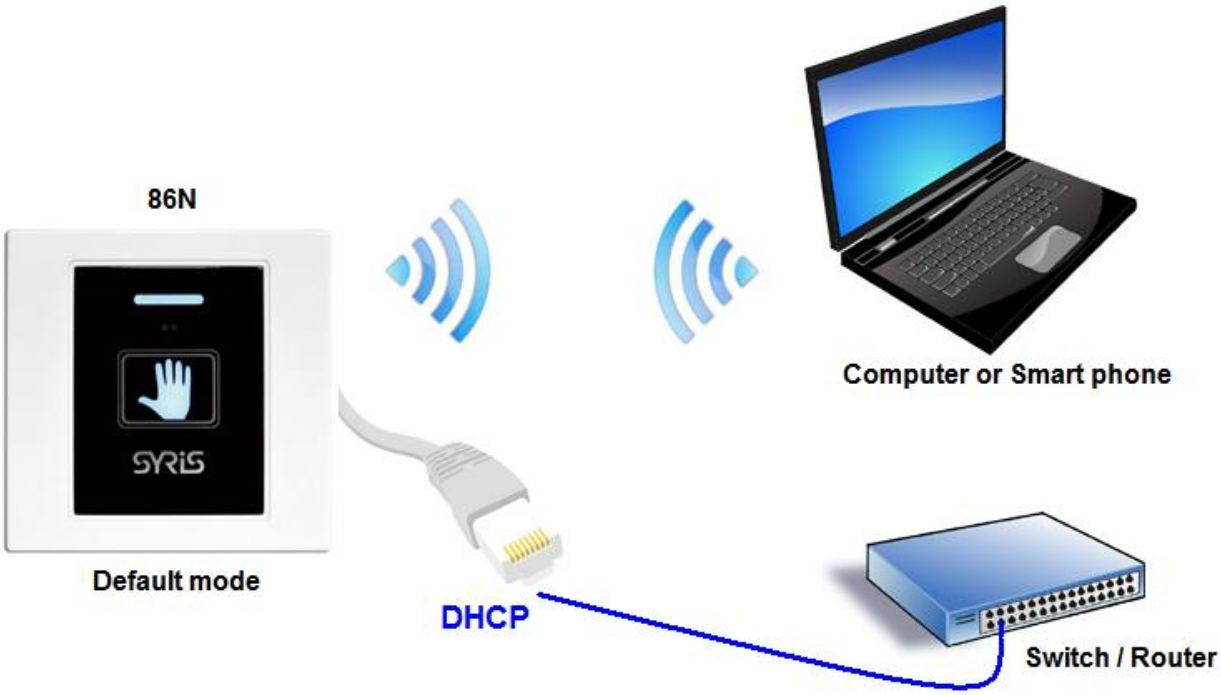
IP Type: DHCP is default mode. If user has to setup a static IP, please select Static.

PS: Wi-Fi MAC address is Ethernet MAC subtract 1.

Ex. Ethernet MAC : AC:A2:13:B5:5A:B5， Wi-Fi MAC : AC:A2:13:B5:5A:B4

3. Default mode：Ethernet (DHCP) +Wi-Fi AP mode.

   It's Dual-Mode (Ethernet and Wi-Fi AP，but Ethernet only support DHCP.)



Settings | Network | Serial 0 | Serial 1

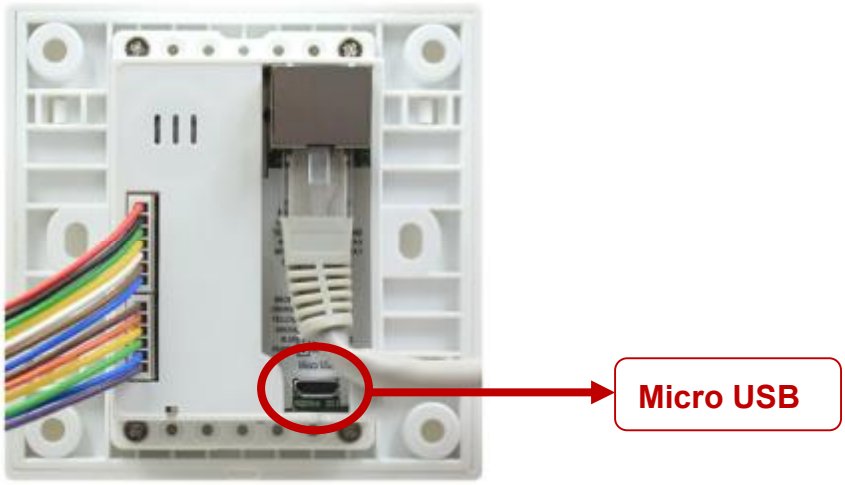
	Current	Updated
Network Mode	Default	Default
IP Type	Static	Static
IP Addr	192.168.1.101	192.168.1.101
Mask	255.255.255.0	255.255.255.0
Gateway	192.168.1.254	192.168.1.254
Dns	192.168.1.254	192.168.1.254
AP Enable	Enable	Enable
AP SSID	SerialWiFi_0EA0	SerialWiFi_0EA0
AP EncType	WPA2AES	WPA2AES
AP Passwd	12345678	12345678
LAN IP Addr	192.168.16.254	192.168.16.254
LAN Mask	255.255.255.0	255.255.255.0
DHCP Server	Enable	Enable

AP SSID: Setup 86N device's SSID.

AP Passwd: 86N device's Wi-Fi password. (Default is 12345678)

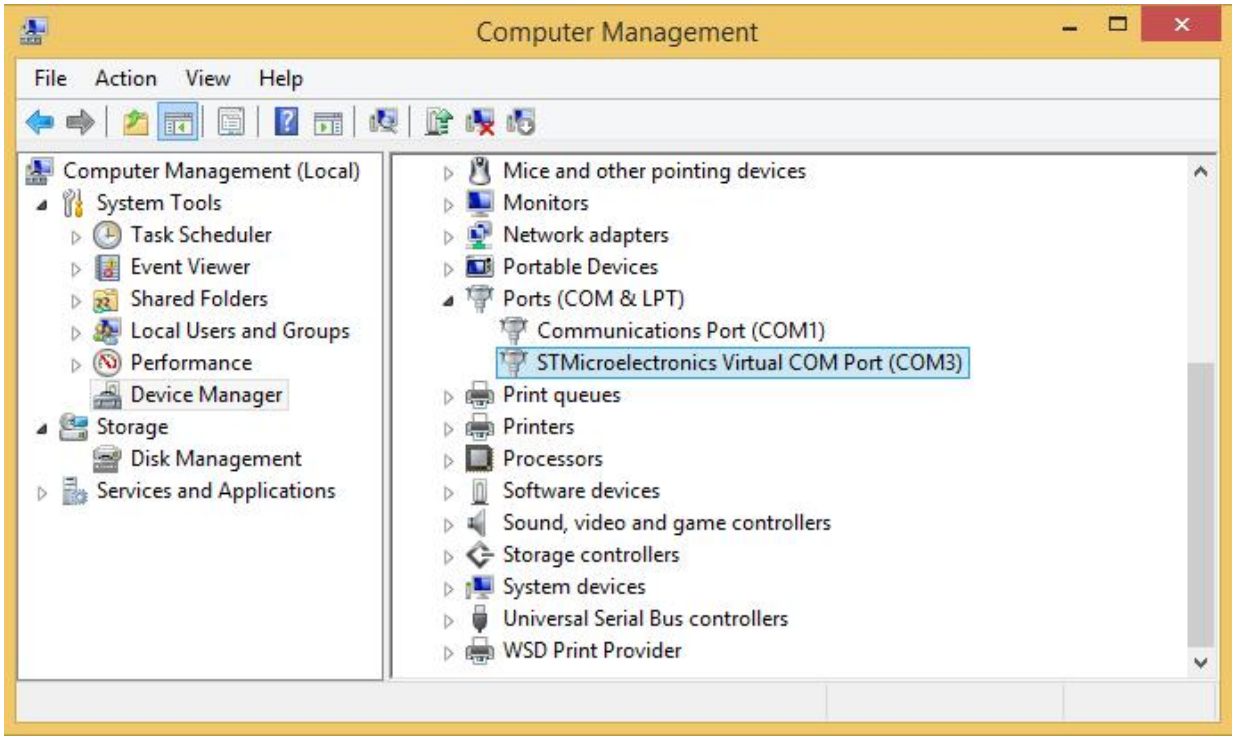
V. USB Connection

Setup 86N parameter via Micro USB.

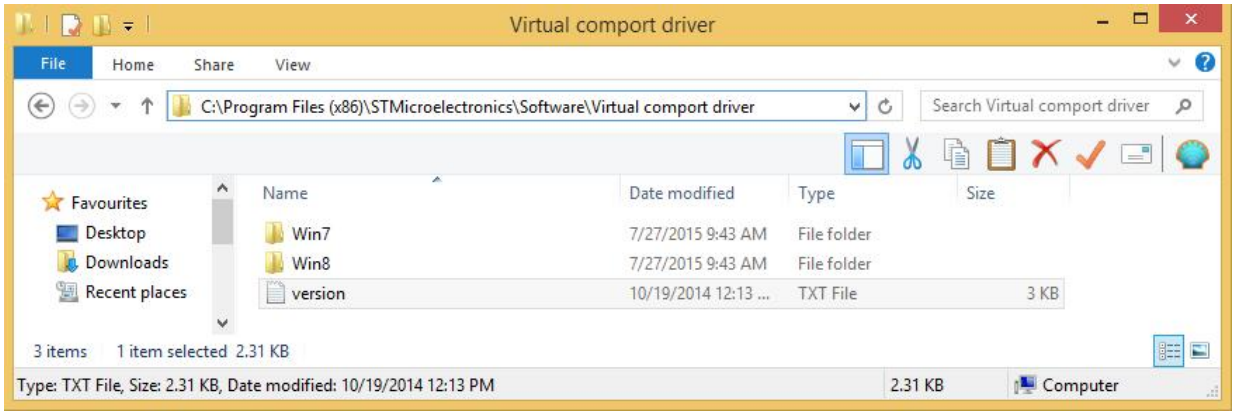


1. Install USB driver ”CDC_USB_Driver_VCP_V1.4.0_Setup.exe”
2. System will generate a virtual COM port.

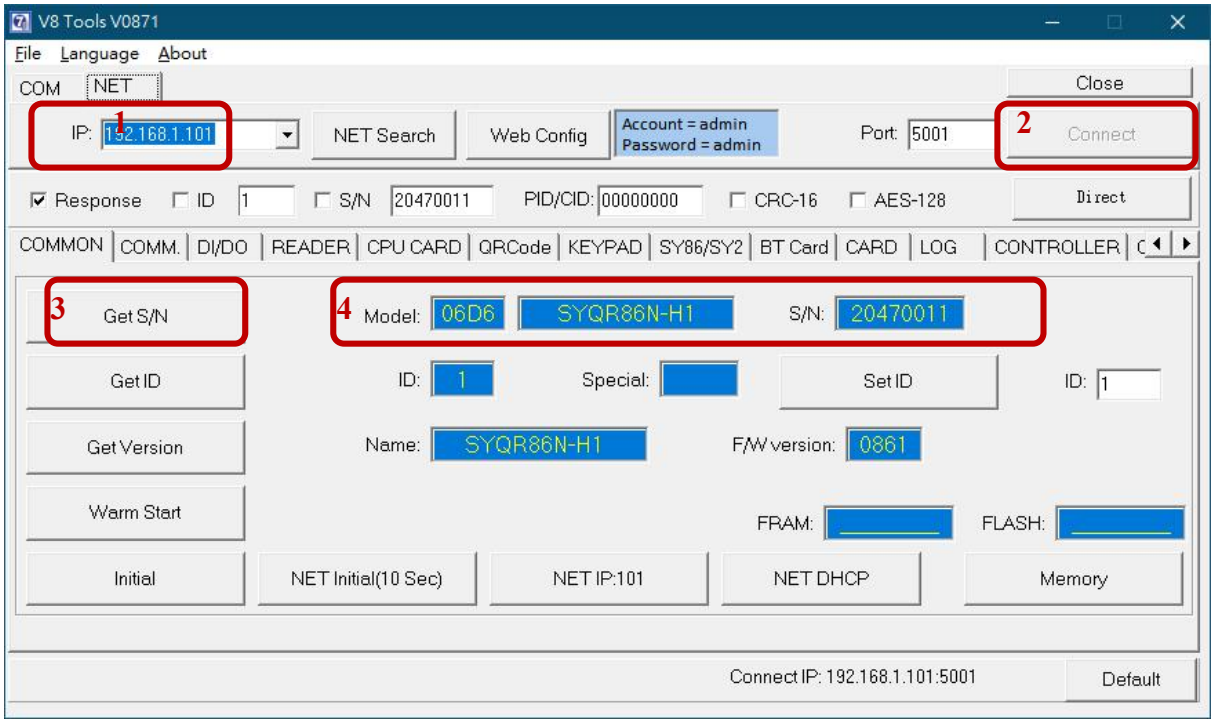
   For example. Check port in device manager.(below picture is COM 3)



User also can update driver manually. The driver is saved in the folder that is same as following.

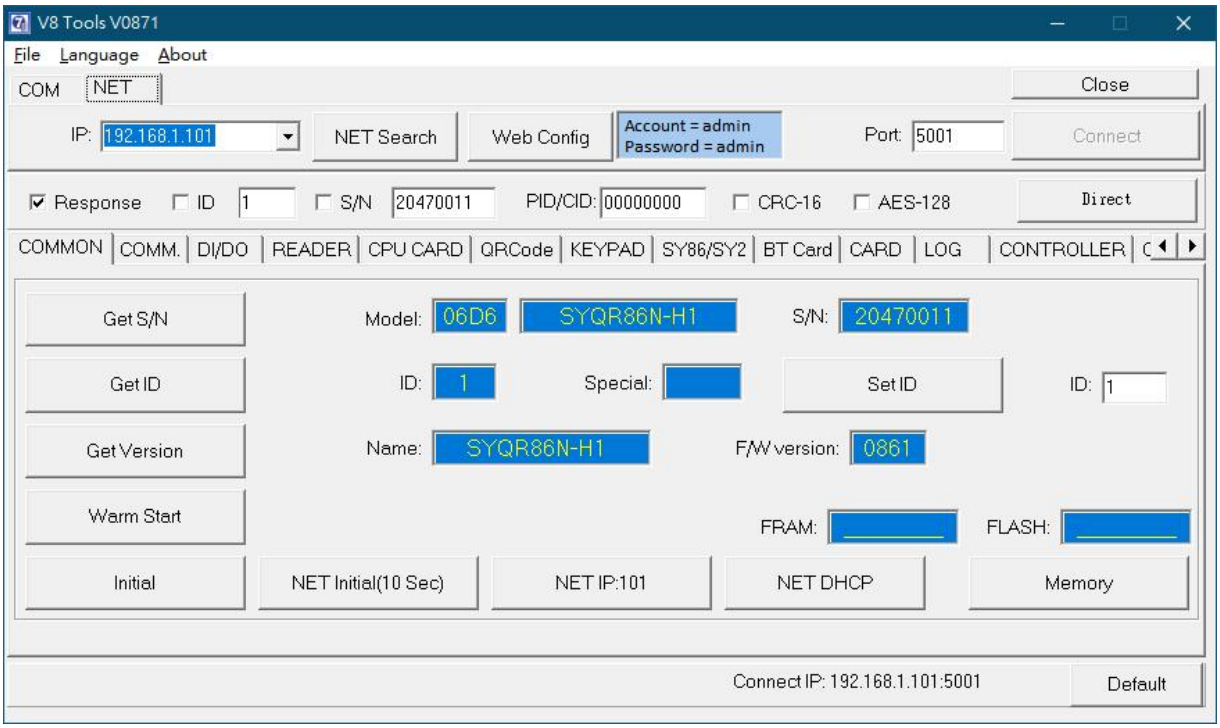


3. Get device Model information and serial number by using V8 Tools with correct COM port or Ethernet connection.



VI. V8 Tools Tool Parameter Setting

1. **Basic:**



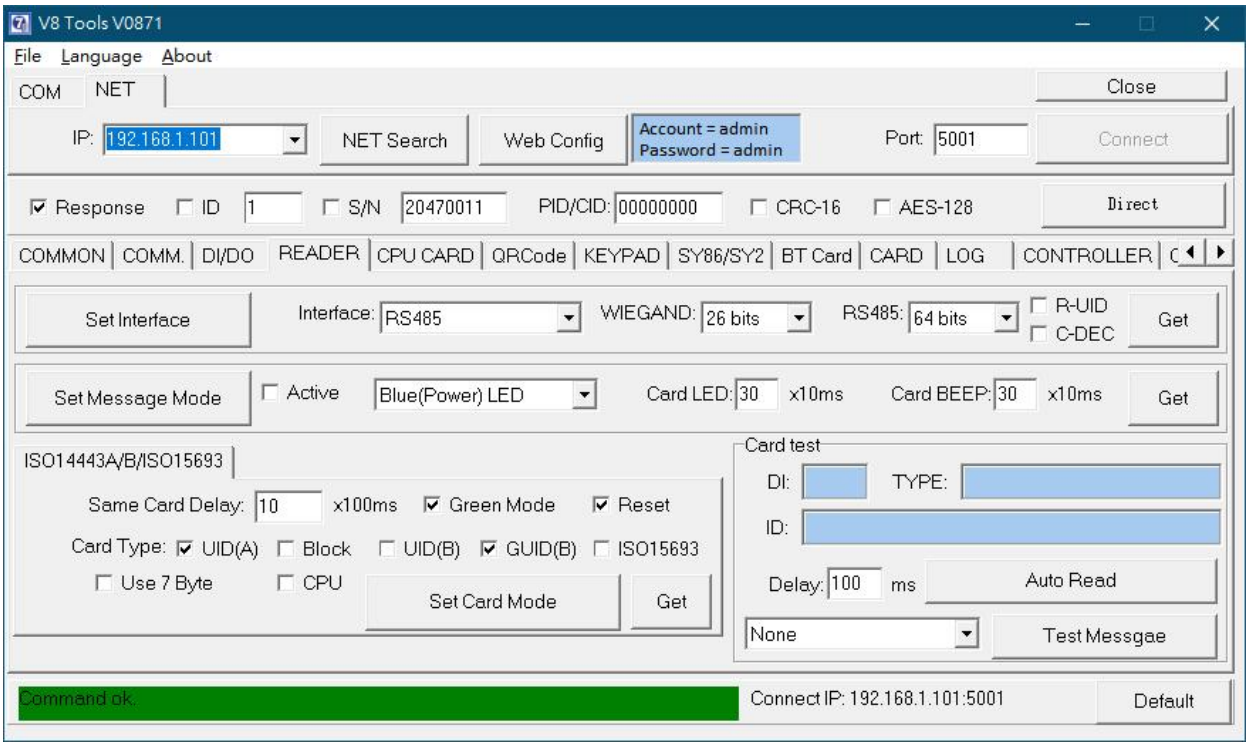
Basic: Get device serial number、device ID and firmware version

Warm Start: Reboot 86N

Initial: Restore 86N to factory default (It is NOT including network setting).

NET Initial (6 sec): Restore network parameter of 86N to Default mode.

2. Reader



Set Interface: Setup reader's communication interface. Default is "RS485".

Set Message Mode: Click on the option active to enable message mode setting. User can setup 86N message display on panel.

Card LED: Time for read card LED ON, default is 30 x 10ms

Card Beep: Time for read card beep on, default is 30 x 10ms

ISO14443A/B/ISO15693 :

Same Card Delay: Setup time gap for reading the same card, default is 10 x100ms (1 second)

Green Mode: Slow down the card read speed to power saving.

Reset: Reset RF IC after read card.

Card Type: Choose card type to enable 86N read specific card.

UID(A): Read ISO14443A Card UID.

Block: Read Block data (Must disable other card type).

UID(B): Read ISO14443B Card UID.

GUID(B): Read the China second generation of resident identification card.

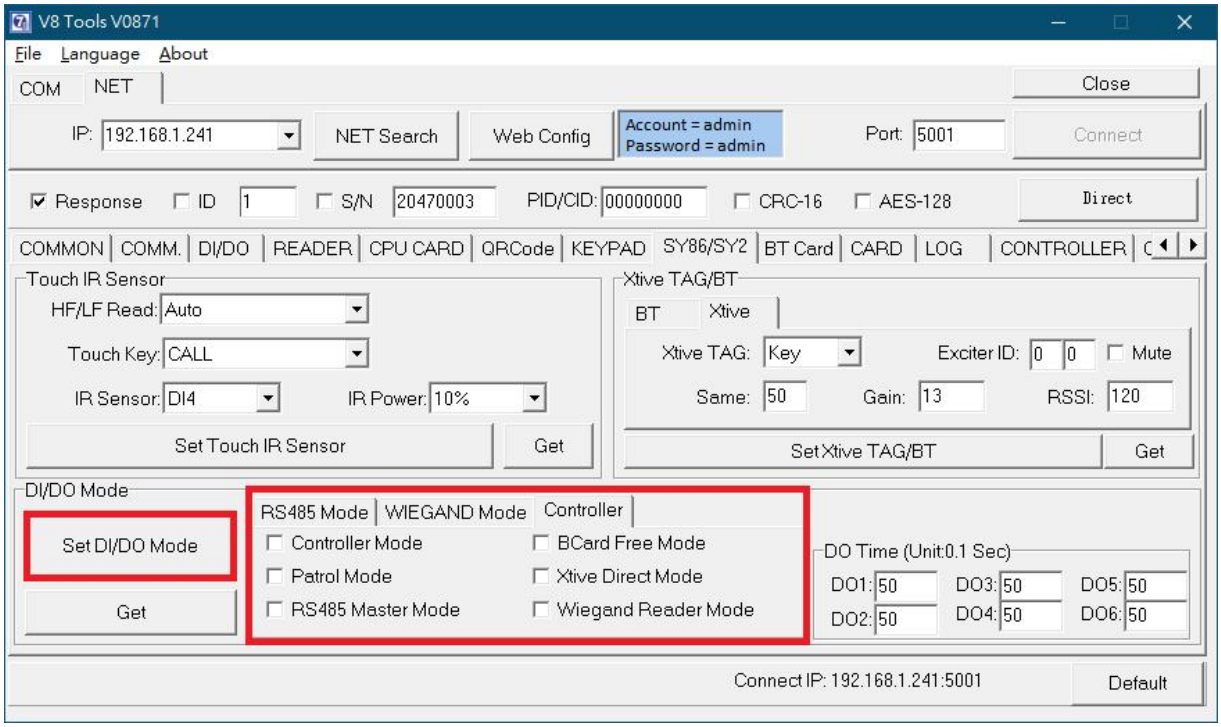
ISO15693: Read ISO15693 Card UID

7 byte: Read 7byte format Card UID

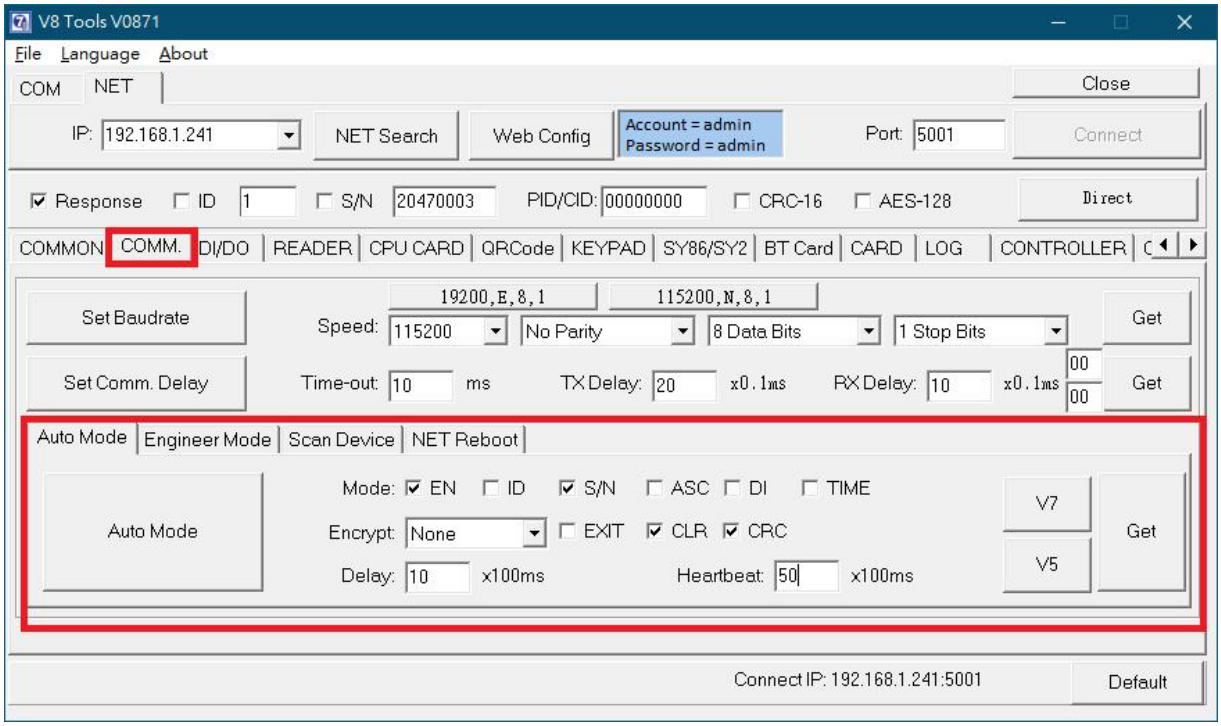
Card Test: Test the reader function.

Auto send reader mode

1. Un- Select "Controller Mode" and then click "Set DI/DO Mode" to disable controller mode.

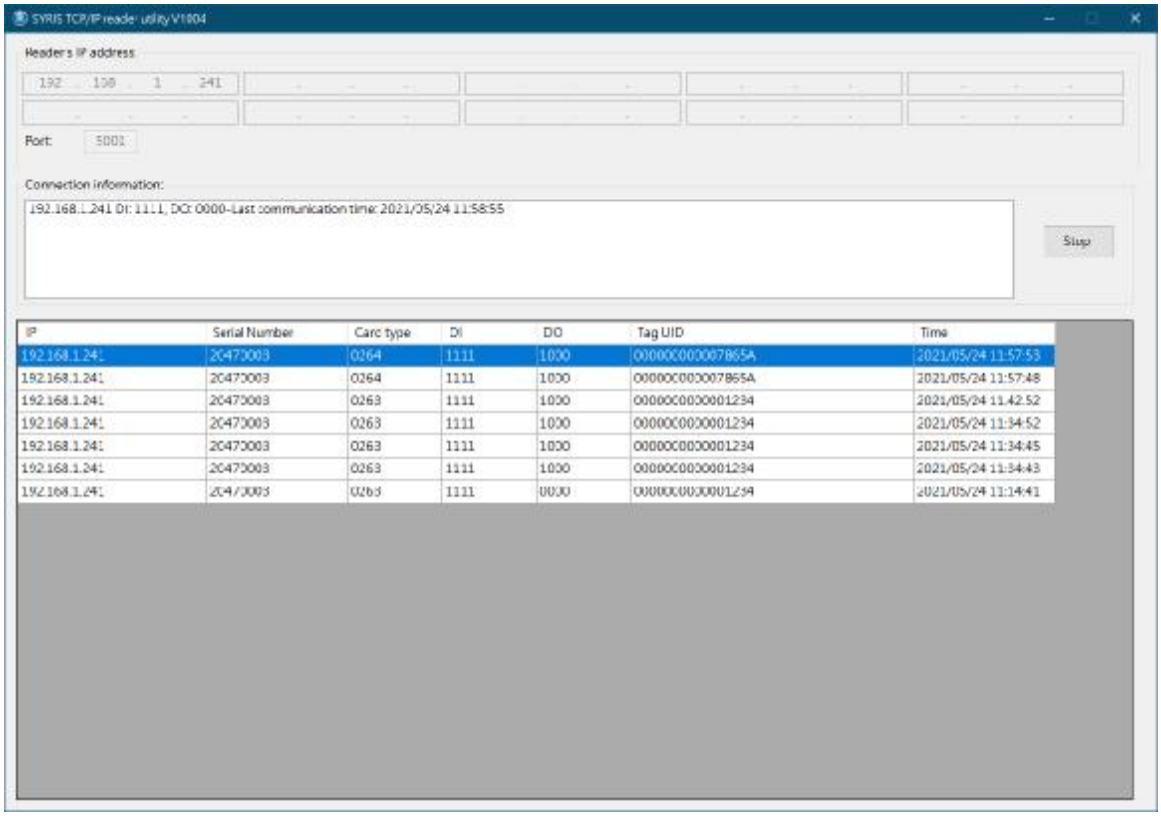


2. Select "EN" (means enable), "S/N", "CLR", "CRC" and set heartbeat to 50 (means 5 sec) and then click "Auto Mode" to finish configure.



3. **Execute "SYRIS TCP reader utility" to connect reader and start to read.**

(**This software only work with auto send reader mode.**)



Card type:

0101	EM tag UID	0211	Desfire tag UID
0201	Mifare tag UID	0261	QR code (DEC)
0202	Mifare block data	0262	QR code (HEX)
0203	ISO 14443B tag UID	0263	QR code (SID)
0204	ISO15693 tag UID	0264	QR code (SID date)
0241	UHF tag UID		