Seriallink®

SLK-S500 Series

Serial device server
Instruction manual

catalog

Chapter 1 Product Introduction

1.1 Product introduction

SERIALLINKSLK-S500 series serial device server is to convert multi-channel dispersed, low-speed, different standard serial device into Ethernet for centralized management, after installing a virtual serial port, it can realize remote reading of serial port data.SLK-S500 series serial device server supports a variety of working modes, including TCP server mode, TCP client mode, UDP mode, TCP/UDP socket, Modbus RTU to Modbus TCP Server and other working modes, allowing user software to access serial devices through TCP plus port number. In addition, it also supports virtual serial port access to serial devices. The SERIALLINK SLK-S500 Series supports quick and easy manual configuration of IP addresses via a browser or Telnet terminal. At the same time, users can also automatically search for serial device devices in the LAN through the easy-to-use Windows management software, and perform remote configuration management and work status monitoring and other applications.

1.2 Product Classification

SLK-S500 series serial device server is divided into two categories, of which the name suffix with 'D' is the desktop version, including SLK-S501D, SLK-S502D, SLK-S504D, SLK-S508D, the serial device server desktop version is small in size, the number of serial ports is 1~8 (this article only talks about SLK-S504D/508D), and the connector is a terminal; The name suffix with 'R' is the rack version, including SLK-S508R, SLK-S516R, SLK-S532R serial port server rack version is large, supporting the maximum number of serial ports 8~32, the connector is RG45; The 8-port serial port server has both desktop version and rack version, and SLK-S508R has 6 switch inputs, 4 switch outputs and PoE power supply than other rack versions, and PoE power supply needs to be enabled on the configuration page.

Note: The 'M' after the desktop and rack versions represents the difference in software, indicating Modbus functionality. The last two digits of S5 in the model name indicate the number of serial ports, for example, 08 in SLK-S508D represents the number of serial ports of this model product is 8.

SLK-S504D

SLK-S508D

SLK-S508R

SLK-S508R

SLK-S508R

# Chapter 2 Parameter Configuration

2.1 Prepare before configuration

After completing the hardware installation, you need to make sure that the management computer has an Ethernet card installed before logging into the router's web setup page. Set the IP address of the management PC (for example, 192.168.0.59) and the LAN port IP address of the device in the same network segment (the initial IP address of the device LAN port is: 192.168.0.233, and the subnet mask is 255.255.255.0).

Take win10 as an example, the operation is as follows:

Step 1: Right-click the network logo in the lower right corner of the desktop (as shown in the figure), and choose to Open Network & Internet settings.

Step 2: First click on "Ethernet", then click on "Network and Sharing Center".
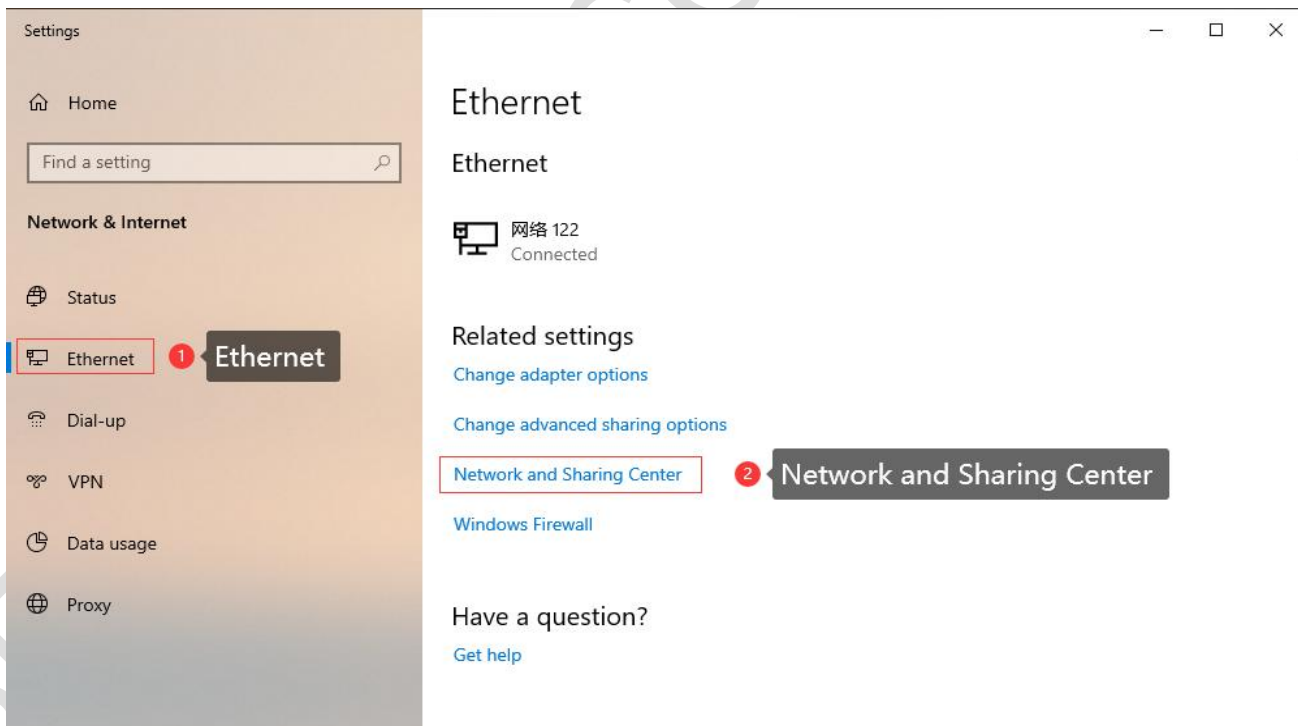
Step 3: Click Enternet with the mouse, click Properties in the pop-up box (Ethernet status), select Internet Protocol version 4 (TCP/IPv4) in the pop-up box (Ethernet properties), and click Properties
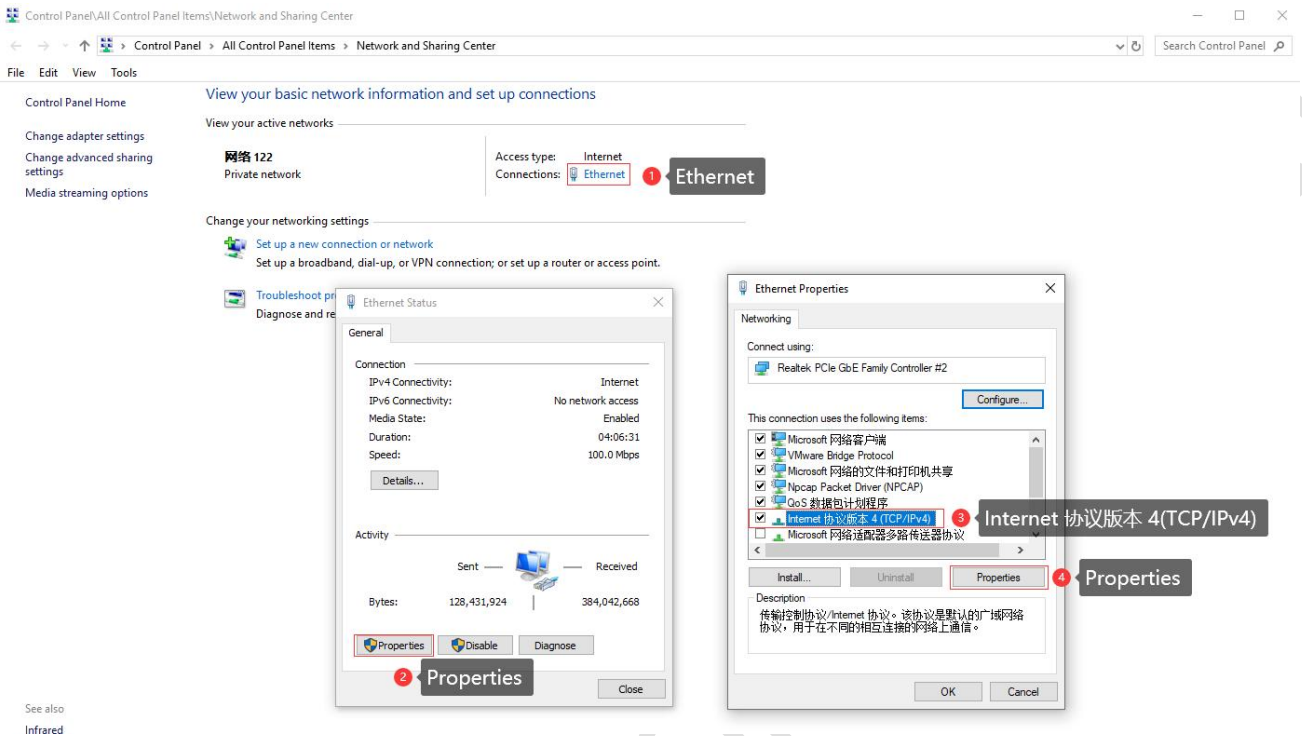
Step 4: There are two ways to set it up, which can have an impact on users who automatically acquire the network. If it is a dynamic network, you can replace the original automatic acquisition of dynamic IP address, gateway, and DNS with static to maintain the original network.
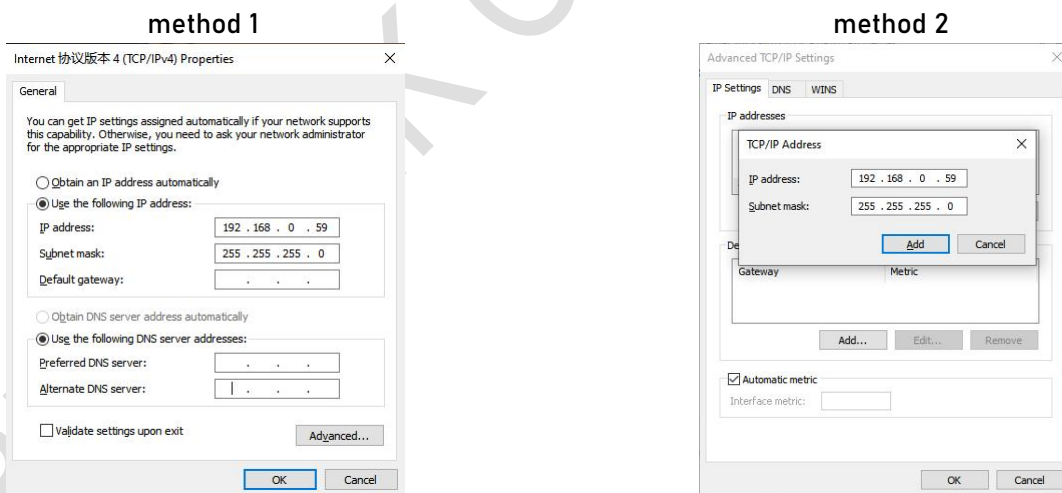
method 1   method 2

method 1: Set a static IP address, if a static network has been configured, the previous network will be disconnected after setting it in this way.

method 2:Click Advanced in the lower-right corner, and click Add in the IP address bar of the pop-up window to add an IP address.

Step 5: Click Confirm to save the changes from steps 3 and 4 (closing either window without clicking OK will not take effect).

2.2 Login Configuration Page

Open IE or other browsers, enter the LAN IP address in the address bar (the default is 192.168.0.233), after the connection is established, log in as the system administrator (admin) on the pop-up login interface, that is, enter the password on the login interface (the factory default setting of the password is admin).
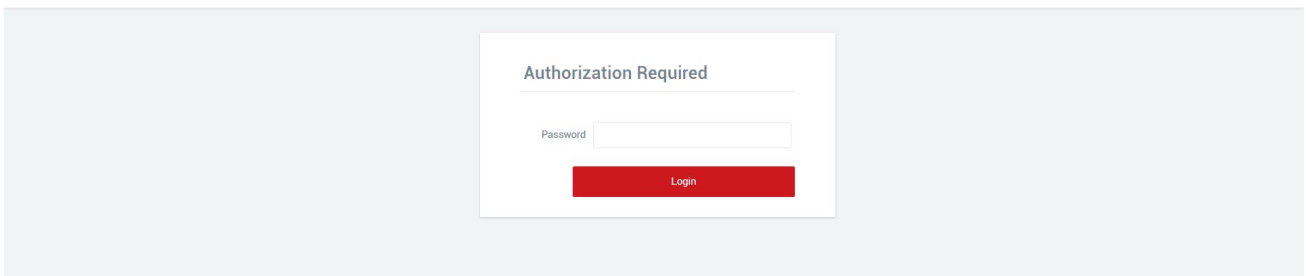

The default login password is admin. If you need to protect the configuration interface from being modified by others, you can change the login password, see Section 4.3 for details

2.3 Network Configuration

2.3.1 Modify the static login page address

The default static address of the serial device server is 192.168.0.233, and you can view the network port configuration information in the navigation bar "Network" >>> "Network". You can also modify the default IP address, and after modification, you will log in to the page with the new IP address.
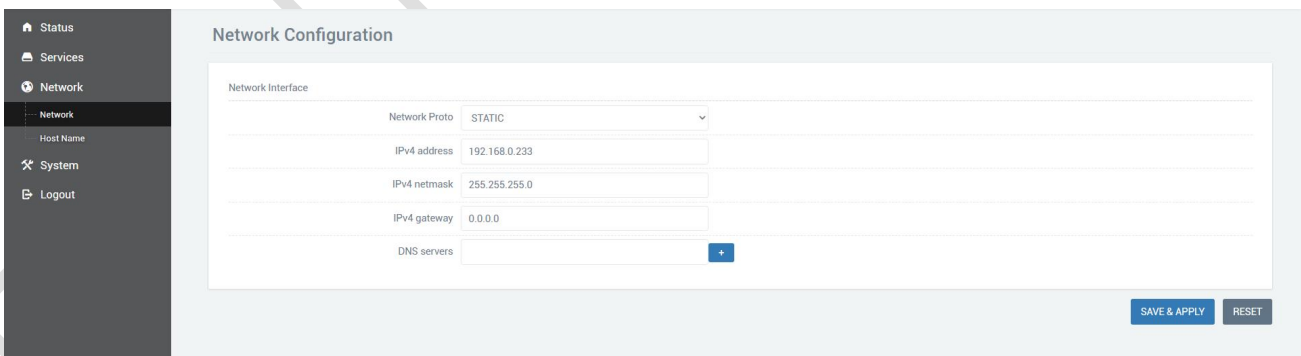
2.3.2 DHCP Client

Serial device server LAN port access switch (need to exist DHCP server in the network) or router, you can choose DHCP network protocol, automatically obtain IP address, after the computer accesses the switch, through the serial device server DHCP automatically obtained IP login into the page, at this time the IP of the serial device server is assigned by the superior route, you need to see which IP the superior route assigns to the serial device server, Or use Seriallinkv1.2 .exe software to search, enter the IP address in the browser address bar to access.
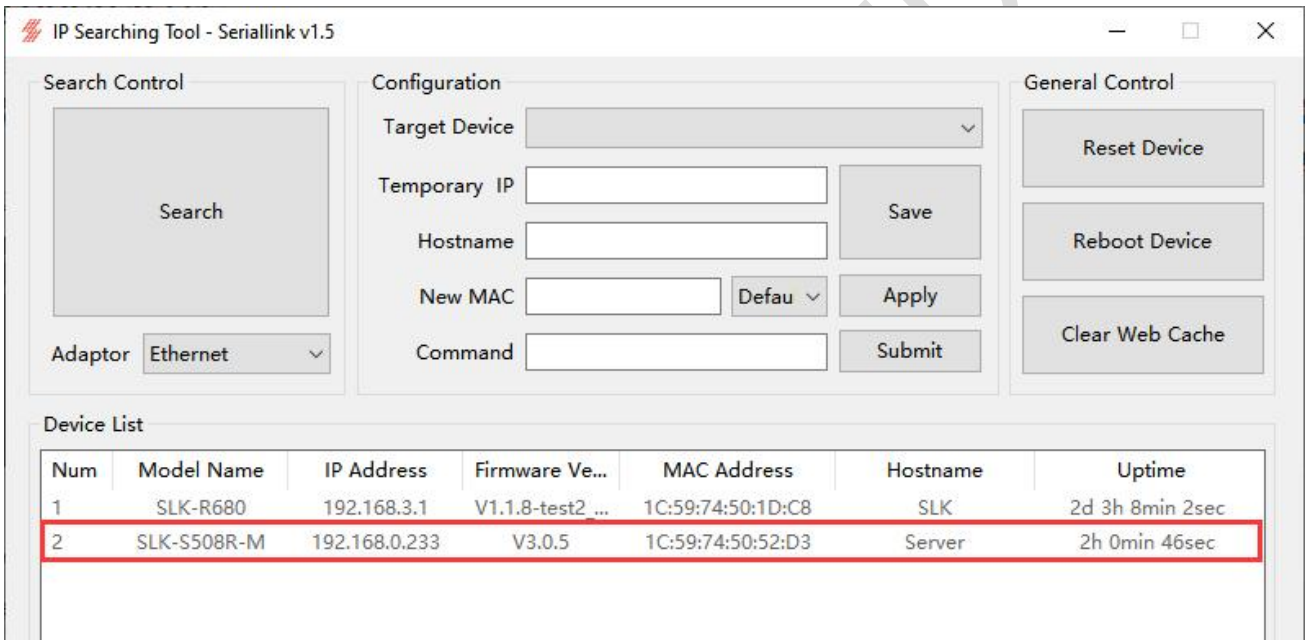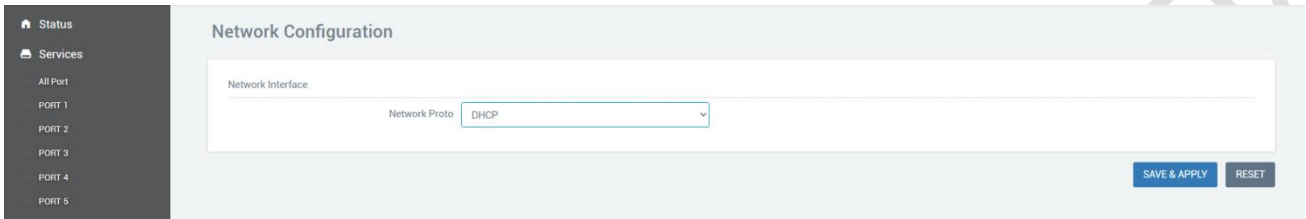
2.4 Serial port configuration

2.4.1 Use tools and preparation

Select "Services" >>> "All Port" in turn to configure a port according to your needs, it should be noted that after configuring and saving the application on the All Ports page, all ports that have been configured will be directly changed. Connect to the computer serial port (USB Serial Port (COM3), as shown below). TCP Server, TCP Client, UDP Server, UDP Client simulation using tools UartAssist.exe and NetAssist.exe, Modbus TCP simulation using tools ModSim32.exe and ModScan32 .exe, you can also use your own familiar serial port and network debugging software. The difference between UDP Client and UDP Server is whether it needs to communicate with only a specific IP address, and UDP Client only communicates with a specific server IP address.

Open the software, UartAssist .exe settings are as follows, baud rate, stop bit and other serial port settings can be changed according to the settings of the corresponding port of the serial device server, and open the serial port after setting.
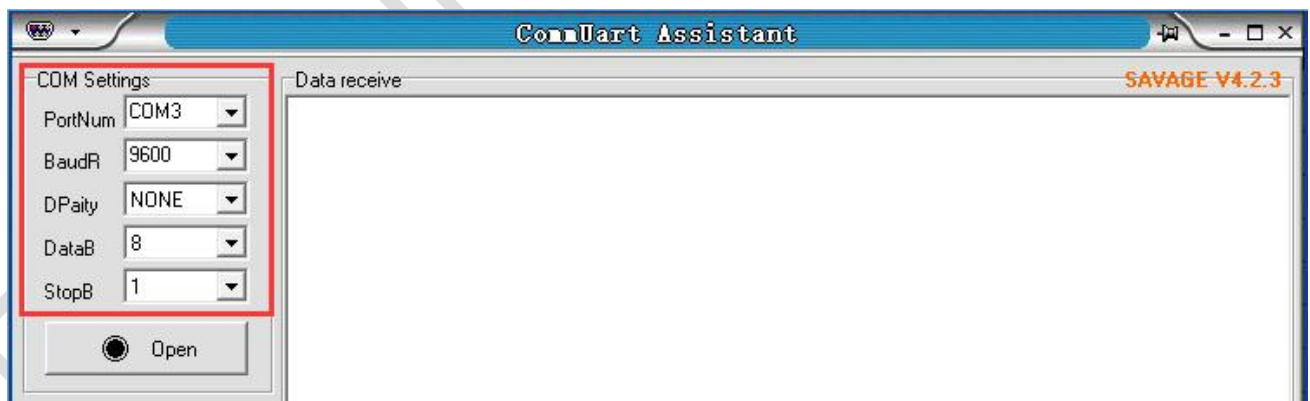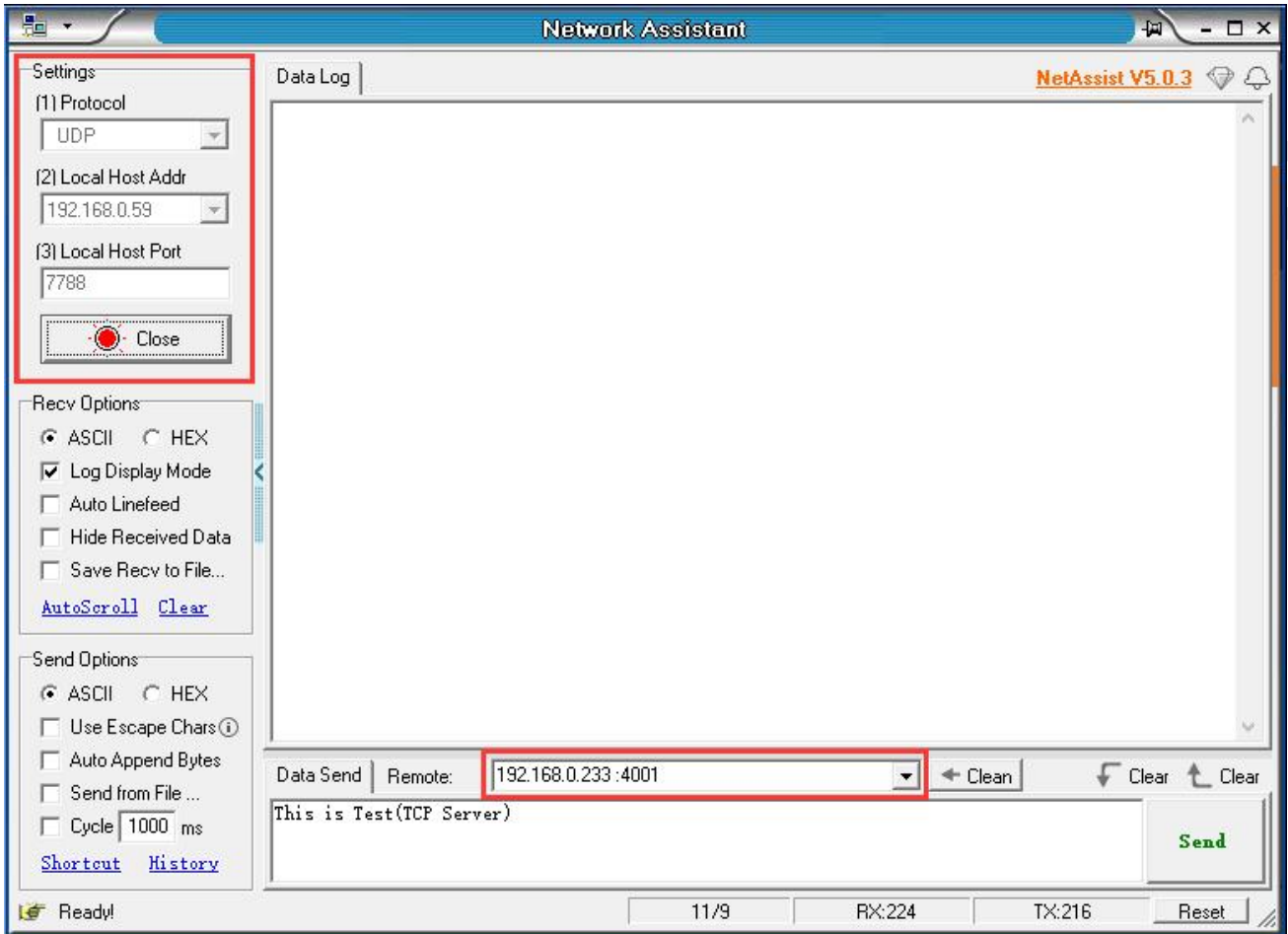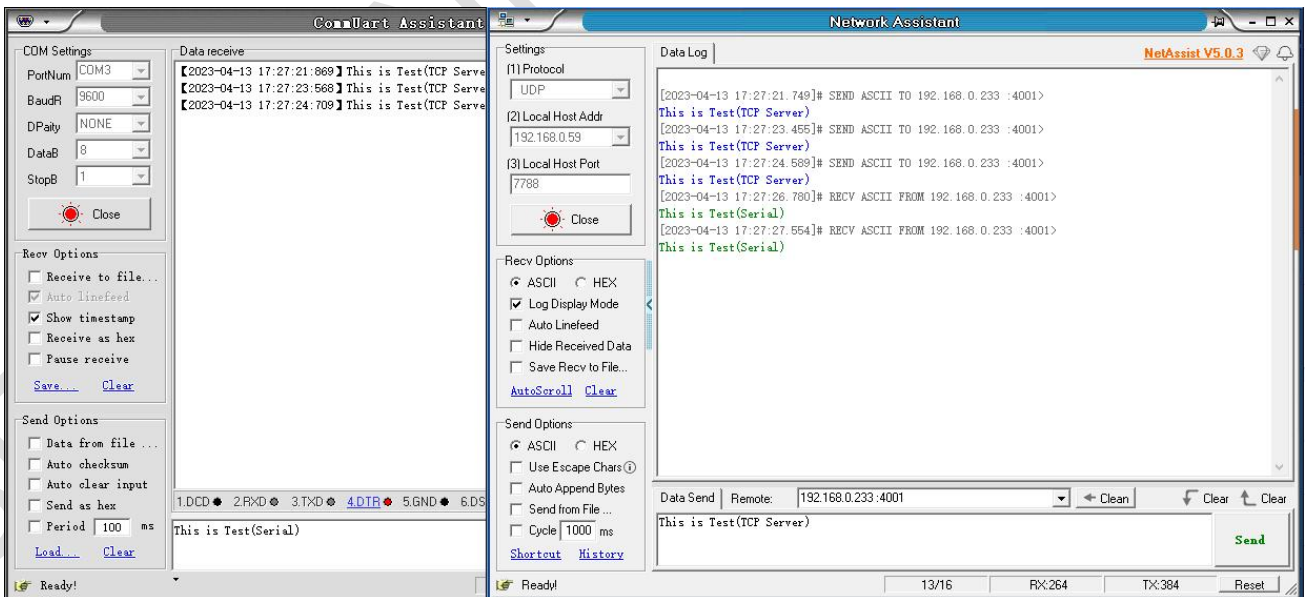

2.4.2 TCP Server

Select "serial port service" >>> "all ports" in turn, select TCP Server for network protocol, select data type according to needs, generally choose Raw date, after setting the local port, remember that the IP address and port number of the serial device server should be used when establishing a TCP connection, the port number defaults to 400X, and X corresponds to the port number. The maximum

number of connections is 6 by default, which means that up to 6 TCP clients can be used to connect to the same serial port. The default timeout (seconds) is 30, which means that after the TCP server establishes a connection, if there is no data, it will disconnect after 30 seconds, and the value can be set to 0 if a permanent online connection is required. Through the serial port configuration bar, the baud rate, data bit, stop bit and check digit of the serial port are configured according to your own needs. When the configuration is complete, click Save and apply.
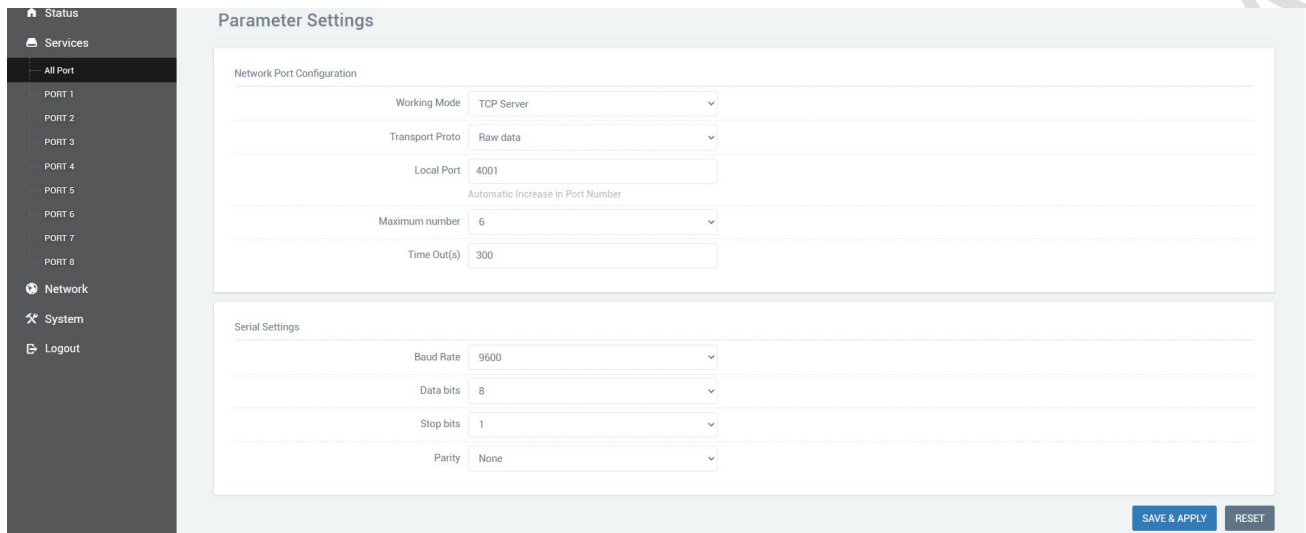

Open the software, select TCP Client, IP is the server address, the port is the same as the server port, and click Connect.

Send and receive renderings.
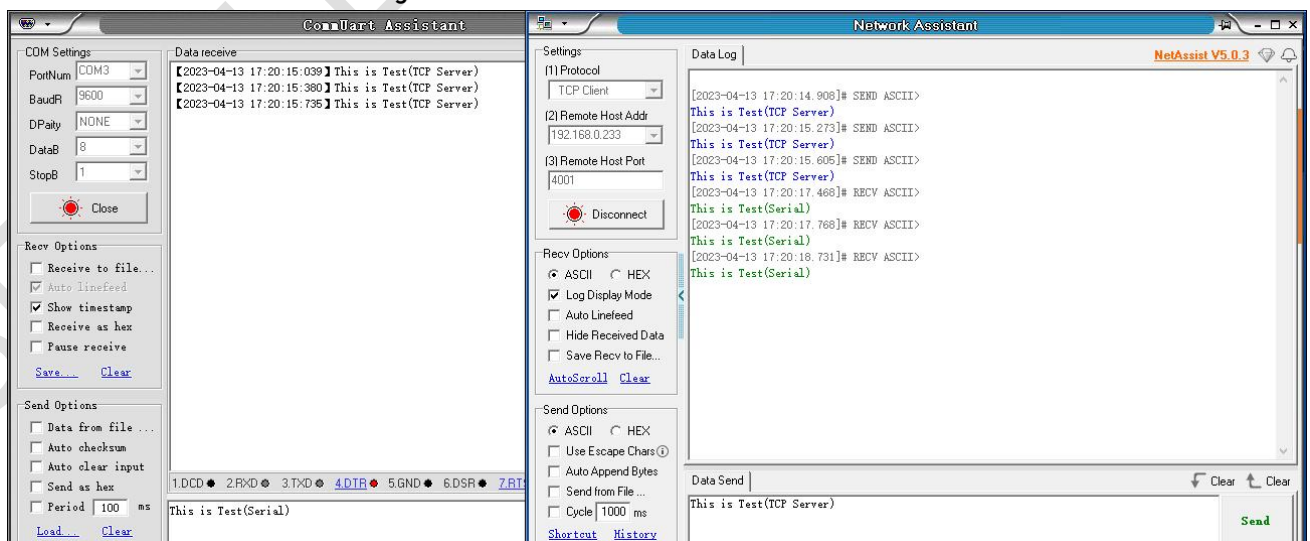
2.4.3 TCP Client

Open the software, click "Open" after the software is set, the client needs to configure the IP address and port number here.

Select "Services" >>> "All Port" in turn, select TCP Client for network protocol, server IP and port number should be consistent with the software settings, and configure the baud rate, data bit, stop bit and check digit of the serial port according to your needs through the serial port configuration bar. When the configuration is complete, click Save and apply.
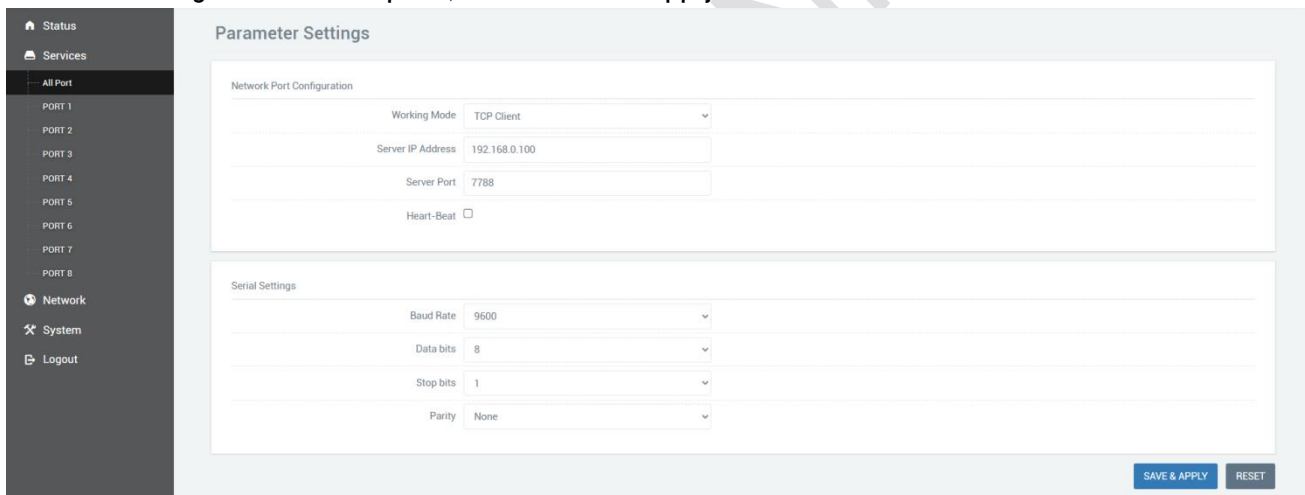
After saving and applying, the software will print "[2023-04-13 11:27:13.431]# Client 192.168.0.233:41272 gets online.", which means that the connection is successful, because I set all ports, so there will be multiple client connections.
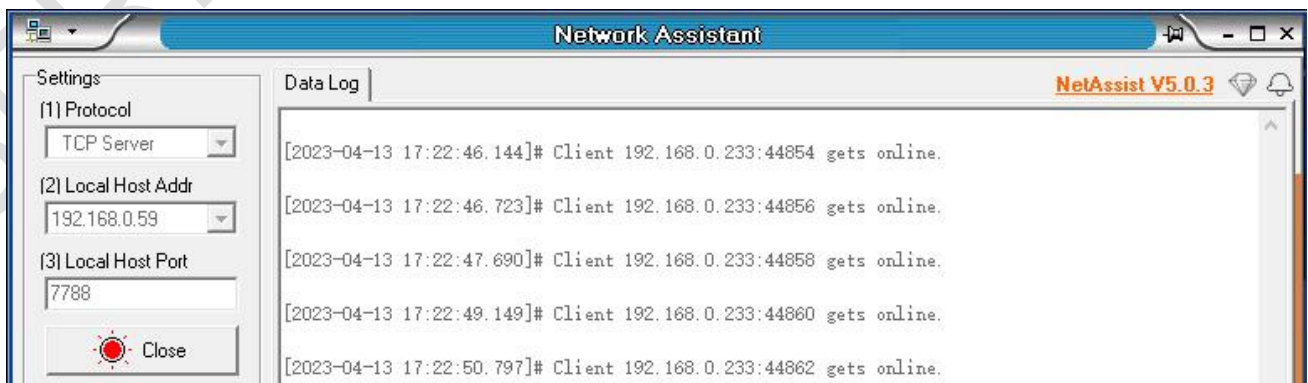
Send and receive renderings.
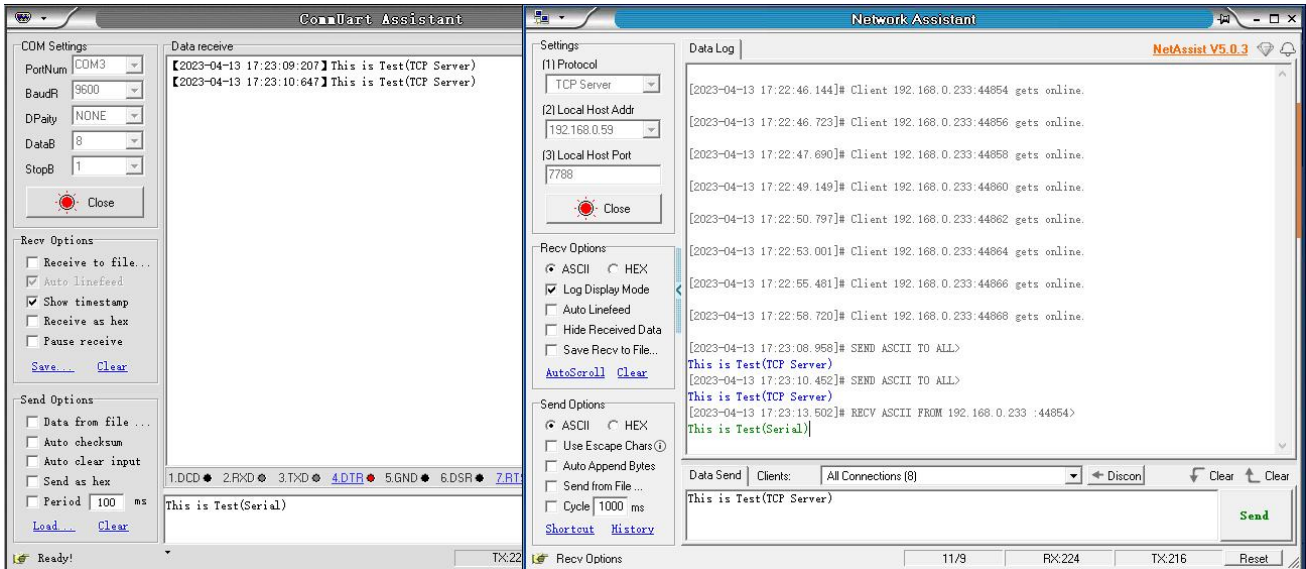
2.4.4 UDP Server

Select "Services" >>> "All Port" in turn, select UDP Server for network protocol, select data type according to needs, generally select Raw date, after setting the local port, remember that the IP address and port number of the serial device server should be used when establishing a UDP connection. The maximum number of connections is 6 by default, which means that up to 6 TCP clients can be used to connect to the same serial port. The default timeout (seconds) is 30, which means that after the TCP server establishes a connection, if there is no data, it will disconnect after 30 seconds, and the value can be set to 0 if a permanent online connection is required. Through the serial port configuration bar, the baud rate, data bit, stop bit and check digit of the serial port are configured according to your own needs. When the configuration is complete, click Save and apply.
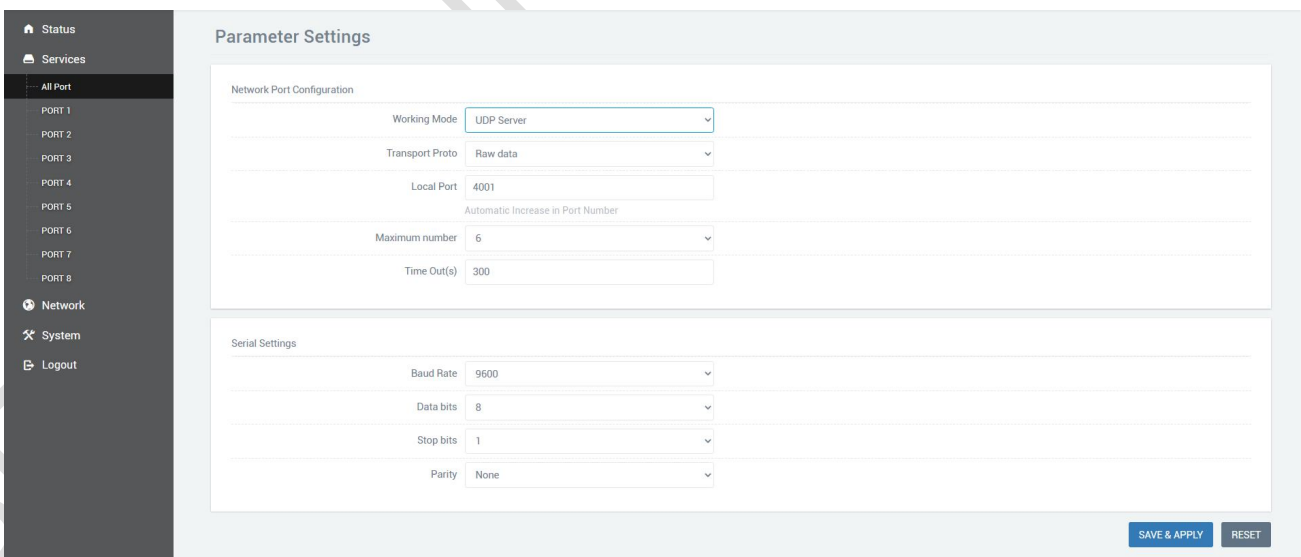
Open the software, the software settings are as follows, click Open.

Send and receive renderings.

2.4.5 UDP Client

Open the Network Debugging Assistant to simulate the UDP server, fill in the IP address and port number of the server in the preceding figure, and click Open.
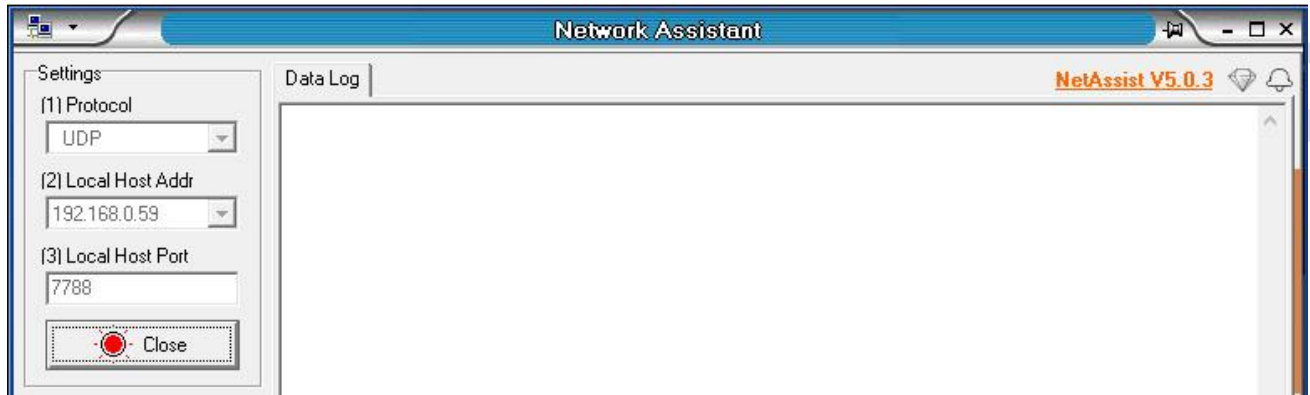
Select "Services" >>> "All Port" in turn, select UDP Client for network protocol, select data type according to needs, generally select Raw date, after setting the local port, remember that the IP address and port number of the serial device server should be used when establishing a UDP connection. UDP Client has an additional server-side IP address and server-side port number compared to UDP Server, the purpose of this is to ensure the security of UDP data transmission, network data only receives data sent by the server-side IP and server-side port number, and the rest of the data is denied access. Through the serial port configuration bar, the baud rate, data bit, stop bit and check digit of the serial port are configured according to your own needs. When the configuration is complete, click Save and apply.
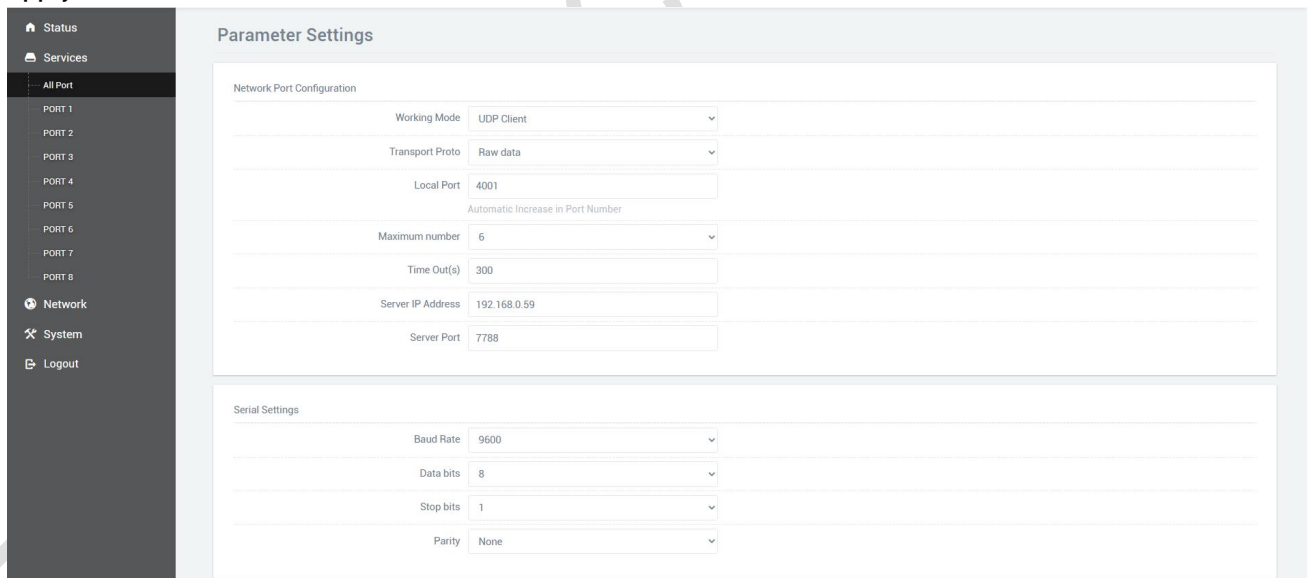
Results are sent and received successfully.
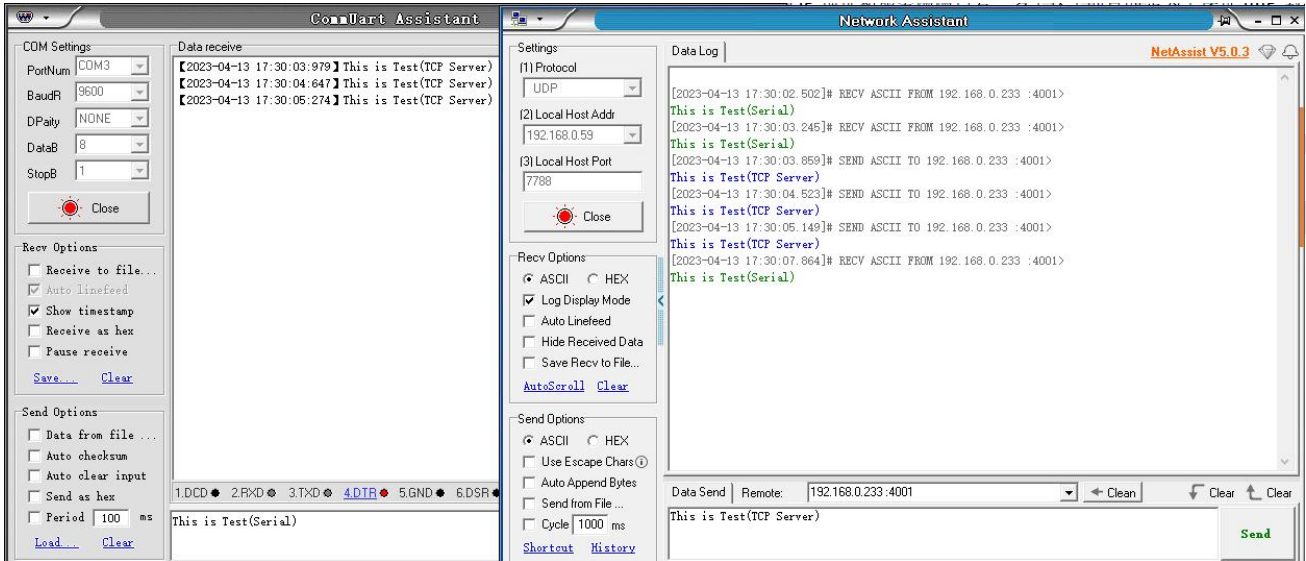
2.4.6 Modbus TCP

Select "Services" >>> "All Port" in turn, select Modbus TCP for the network protocol, remember to remember after the local port is set, through the serial port configuration bar, the baud rate, data bit, stop bit and check digit of the serial port are configured according to your needs. When the configuration is complete, click Save and apply.
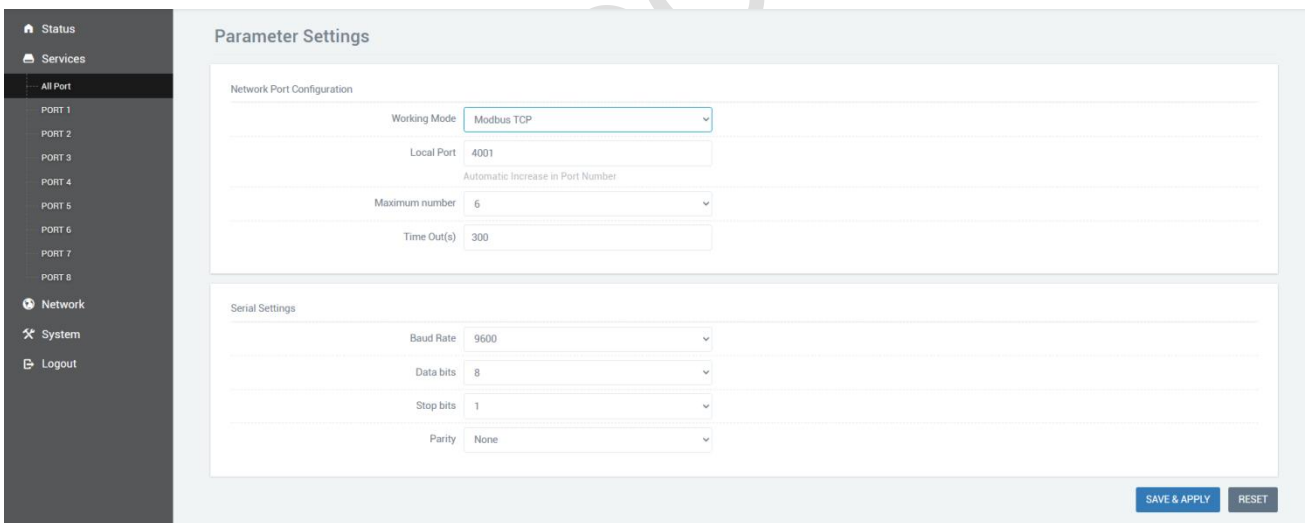
You need to use ModSim32 .exe and ModScan32 .exe to simulate use, first open the software ModSim32, first click "File" >>> "New", then "Connection">>> "Connect" >>> "Port 3" (here you choose the port where your computer is connected to the device).
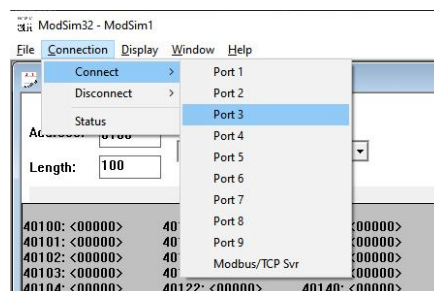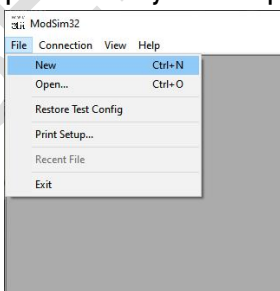
The pop-up dialog box is as follows, the baud rate, data bit, stop bit and check digit change according to the value set by your own web page.
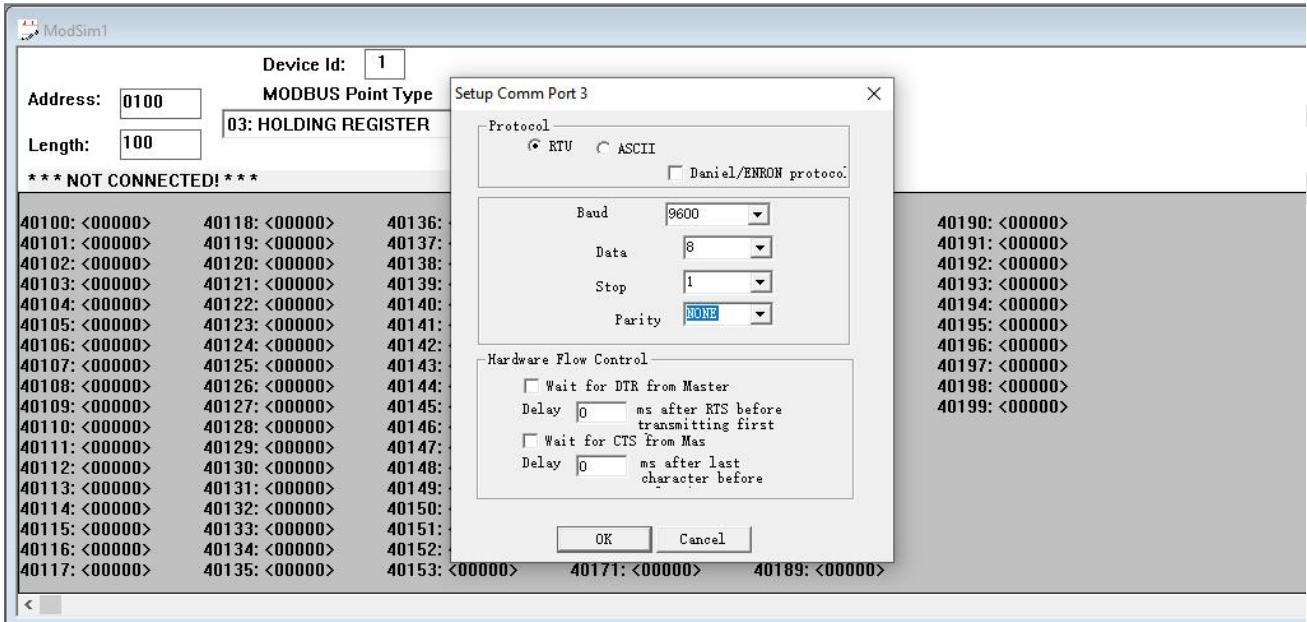
Open the software ModScan32, "Connection" >>> "Connect".
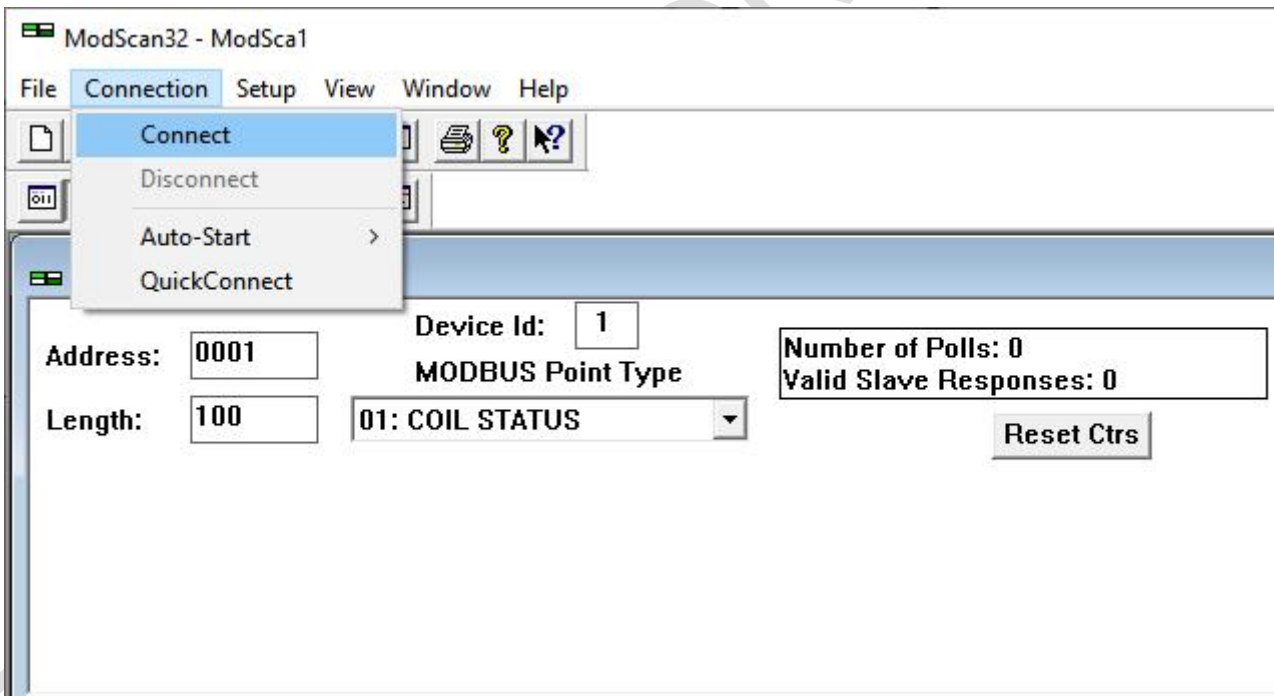
The dialog box pops up as follows, select Remote modbusTCP Server, fill in the IP address and port number, and then click Confirm.
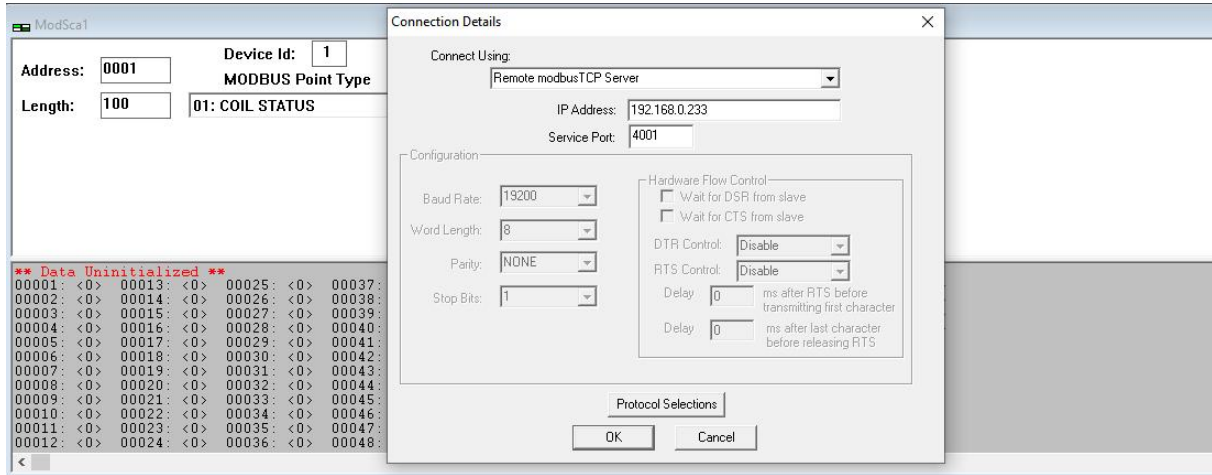
Some of the selected settings in the ModSim32 and ModScan32 software need to be consistent.
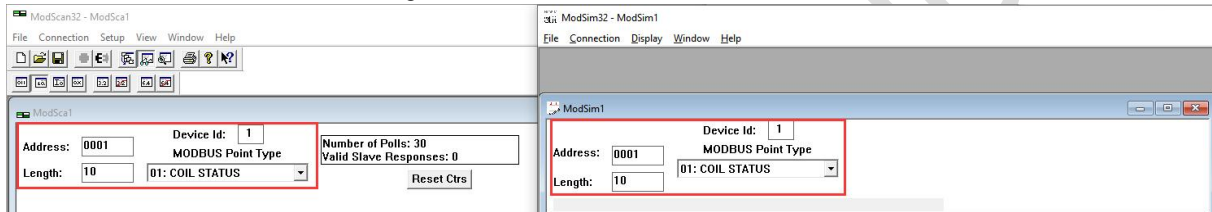
Double-click the 00001:<0> area to pop up the dialog box, select On, and then click Update.
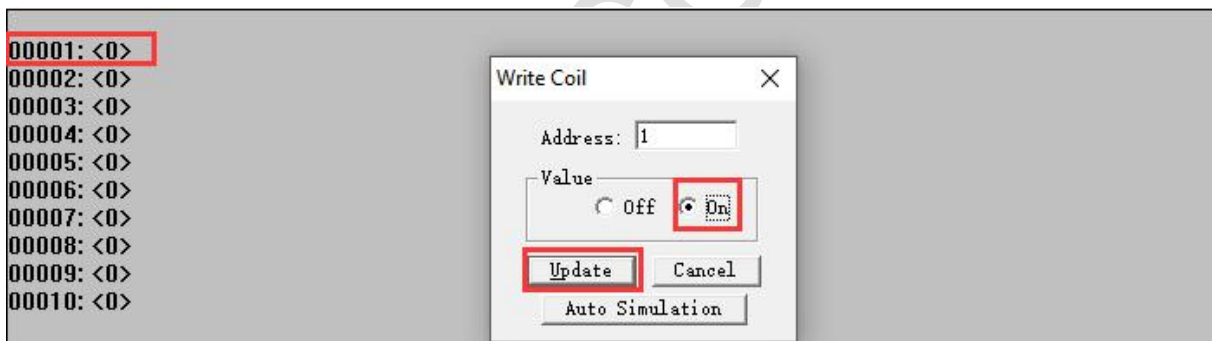
The effect is as follows.
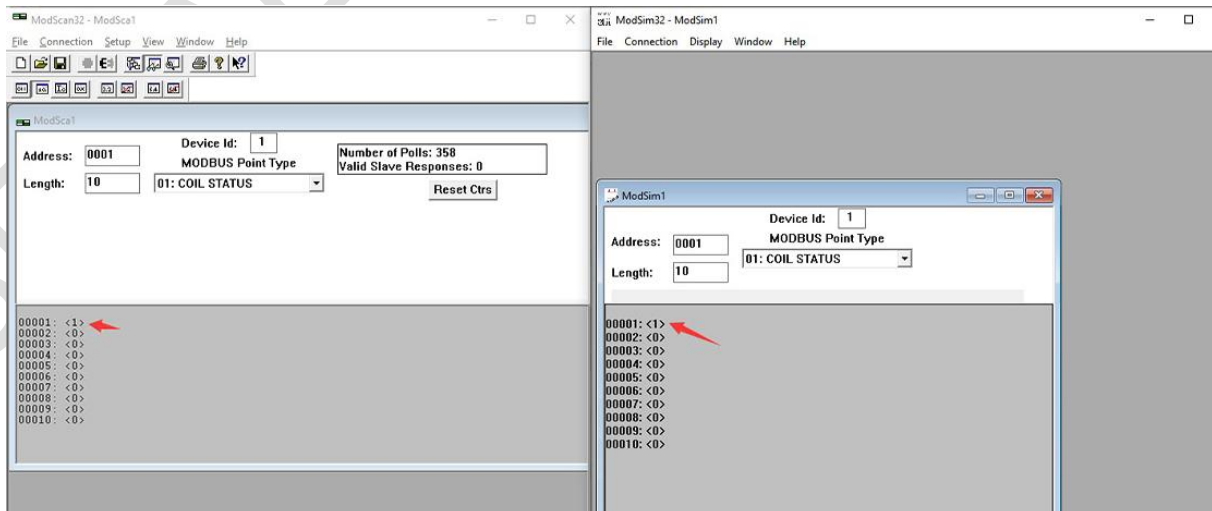
2.4.7 Transport Proto

When choosing between TCP Server or UDP Server, Transport Proto also has the Telnet (RFC2217) option, where putty.exe and UartAssist .exe are used.

Select "Services" >>> "All Port", select TCP Server or UDP Server for Network Protocol, select Telnet (RFC2217) for Transport Proto, and click Save and Apply after configuration.
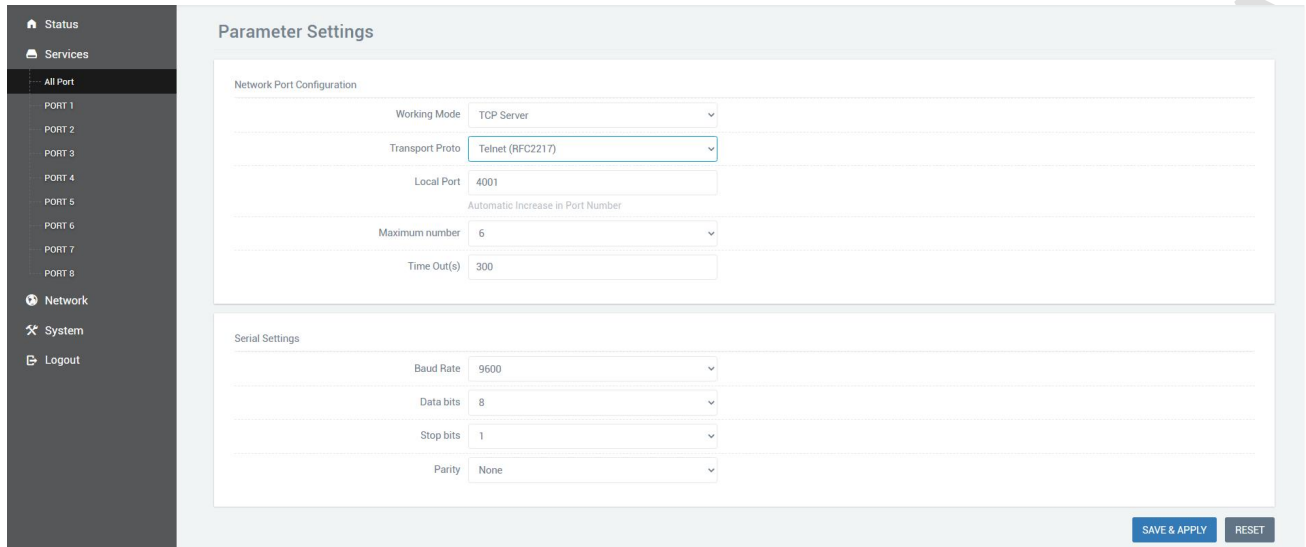
Open the putty.exe software, fill in the server IP address and port number, select Telent for Connection type, set as follows, click Open after the configuration is complete.
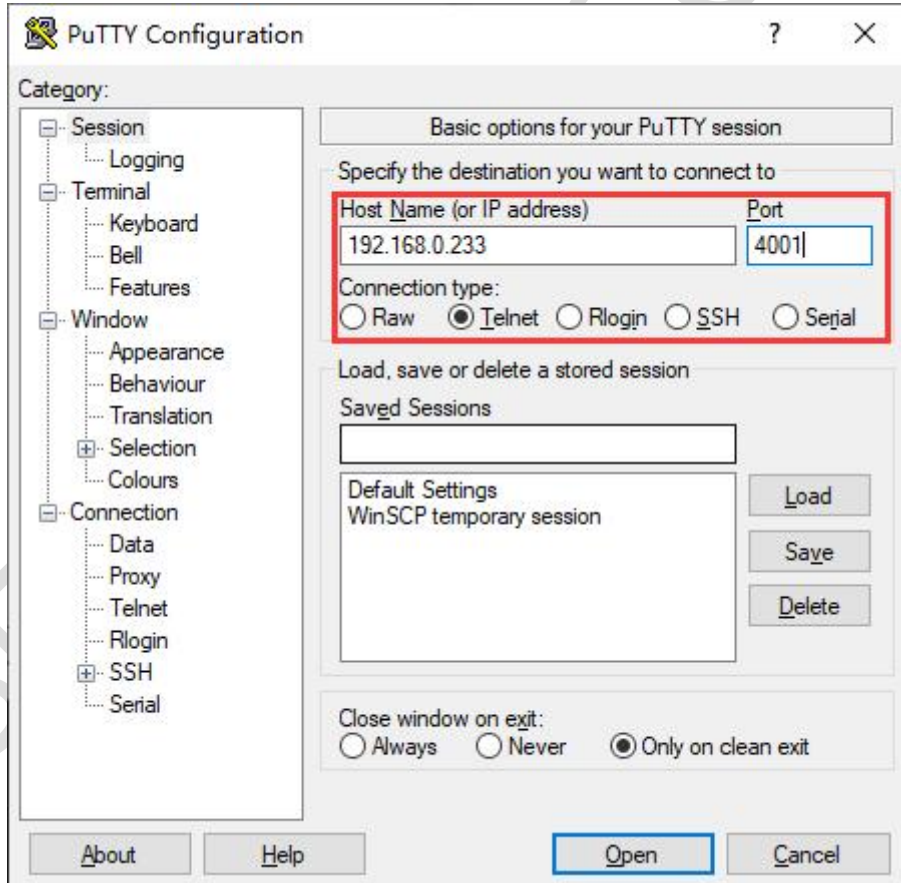
If no error is prompted after opening, a pure black dialog box will be displayed, as shown below.

Click the putty dialog box, enter any character, and the result is as follows.
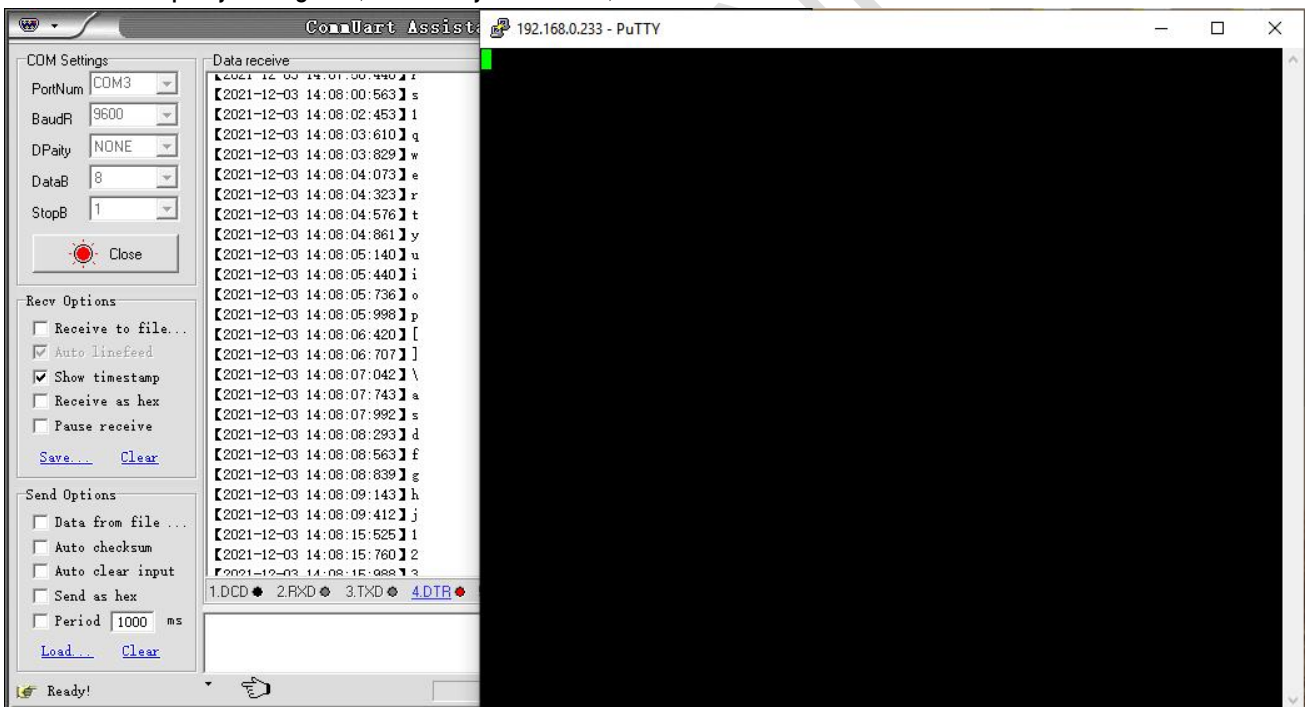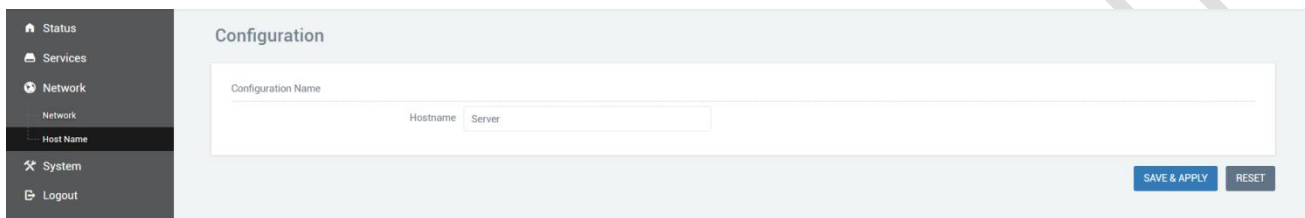
Chapter 3 Other Features

3.1 Host Name

The host name is modifiable, it can be displayed on the status page after modification, and the modified host name will be displayed when using the search tool, see Section 2.3.2 for details.

Select "Network" >>> "Host Name", click Save and Apply after modification.
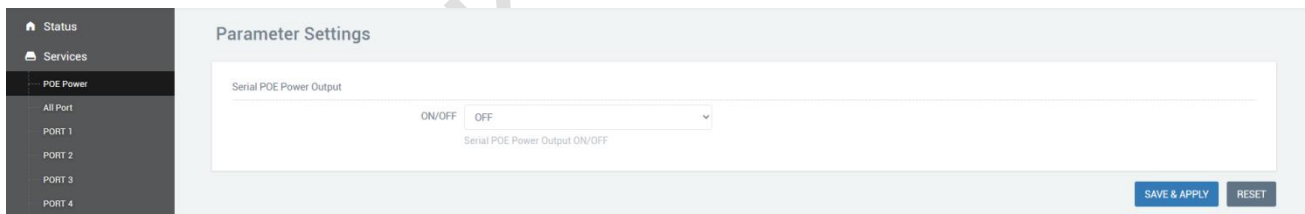
3.2 SLK-S508R Unique features

3.2.1 PoE Power
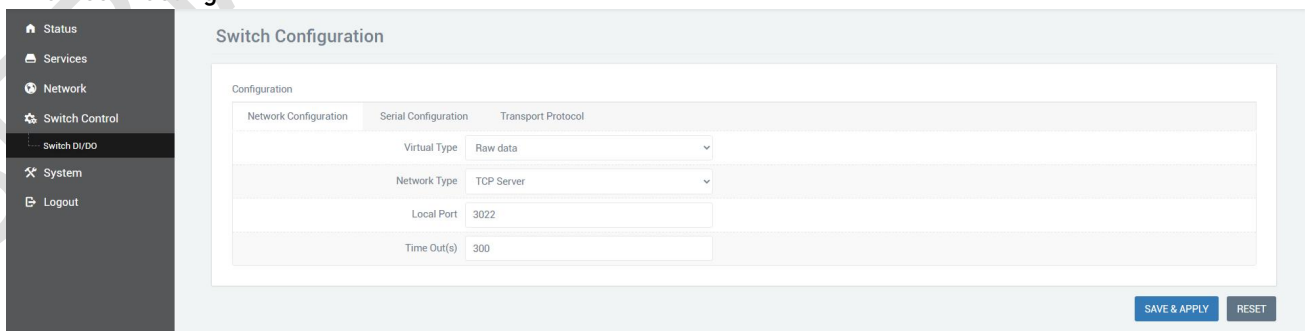
This function is currently only available in SLK-S508R, which is turned off by default, log in to the serial device server page when you need to use it, click "Services" >>> "POEPower", select Open, and then click Save and Apply.

3.2.2 IO Read control(Modbus RTU)

Click "Switch Control" >>> "Switch DI/DO" in turn, and only pay attention to the port number 3022 when connecting.

Communication protocol:

1，Read the DO status(0x01)

Taking the simultaneous acquisition of 4-channel DO as an example, the command is as follows：

Send, decimal：01 01 00 00 00 04 3D C9

Command interpretation：

01	01	0000	0004	3DC9
Slave address	Function code	Host the start address	The number of data read	CRC check
1 byte from device address 01	1 byte, 01, read register	2 bytes of register address to start reading	2 bytes, the number of registers to be read	Calculate the CRC check code based on the data

The command returned by the device is：

Receive, base 16：01 01 01 09 91 8E

Assume that the DO1 of the channel is closed, DO2 is disconnected, DO3 is disconnected, and DO4 is closed, and it is converted to binary 00001001 (the lower four bits are DO1, DO2, DO3, and DO4 from right to left) and hexadecimal is 0x09。

Command interpretation：

01	01	01	09	918E
Slave address	Function code	Data length	data	CRC check
1 byte from device address 01	1 byte, 01, read register	1 byte that returns the length of the data	1 byte, returns the read data	Calculate the CRC check code based on the data

2，Read DI status(0x02)

Taking the simultaneous acquisition of 6 DIs as an example, the command is as follows：

Send, decimal：01 02 00 00 00 06 F8 08

Command interpretation：

01	02	0000	0006	F808
Slave address	Function code	Host the start address	The number of data read	CRC check
1 byte from device address 01	1 byte, 02, read register	2 bytes of register address to start reading	2 bytes, the number of registers to be read	Calculate the CRC check code based on the data

The command returned by the device is：

Receive, base 16：01 02 01 07 E0 4A

Assuming that the channel DI1-DI3 is closed, DI3-DI6 is off, it is converted to binary 00000111 (the lower 6 bits from right to left are DI1, DI2, DI3, DI4, DI5, DI6) hexadecimal is 0x07。

Command interpretation：

01	01	01	07	E04A
Slave address	Function code	Data length	Data	CRC check
1 byte from device address 01	1 byte, 01, read register	1 byte that returns the length of the data	1 byte, returns the read data	Calculate the CRC check code based on the data

Write a single DO state(0x05)

When writing the DO1 (first output) state, you can write FF00H or write 0000H to the register, FF00H value request is closed, 0000H value request DO is in the disconnected state. Close DO1 with the following command：

Send, decimal：01 05 00 00 FF 00 8C 3A

Command interpretation：

01	05	0000	FF00	8C3A
Slave address	Function code	Host the start address	data	CRC check
1 byte from device address 01	1 byte, 05, write a single register	2 bytes of register address to start reading	2 bytes,FF00 epresents the closed state	Calculate the CRC check code based on the data

If the device executes the command normally, the returned data is as follows：

Receive, base 16：01 05 00 00 FF 00 8C 3A

Command interpretation：

01	05	0000	FF00	8C3A
Slave address	Function code	Host the start address	data	CRC check
1 byte from device address 01	1 byte, 05, write a single register	2 bytes of register address to start reading	FF00 represents the closed state	Calculate the CRC check code based on the data
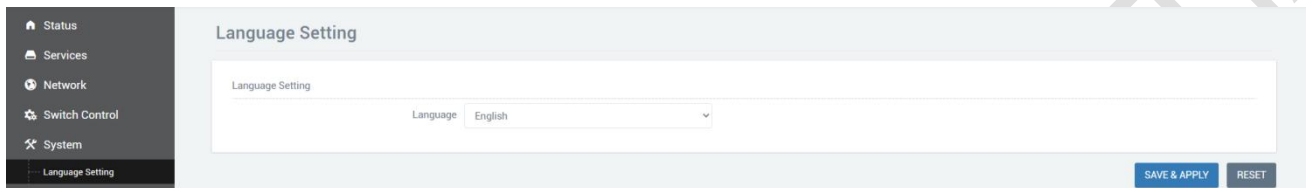
A single DO operation instruction

Status	Send	reception
DO1disconnection	01 05 00 00 00 00 CD CA	01 05 00 00 00 00 CD CA
DO1close	01 05 00 00 FF 00 8C 3A	01 05 00 00 FF 00 8C 3A
DO2close	01 05 00 01 FF 00 DD FA	01 05 00 01 FF 00 DD FA
DO3disconnection	01 05 00 02 00 00 6C 0A	01 05 00 02 00 00 6C 0A
DO3close	01 05 00 02 FF 00 2D FA	01 05 00 02 FF 00 2D FA
DO4disconnection	01 05 00 03 00 00 3D CA	01 05 00 03 00 00 3D CA
DO4close	01 05 00 03 FF 00 7C 3A	01 05 00 03 FF 00 7C 3A

Chapter 4 System
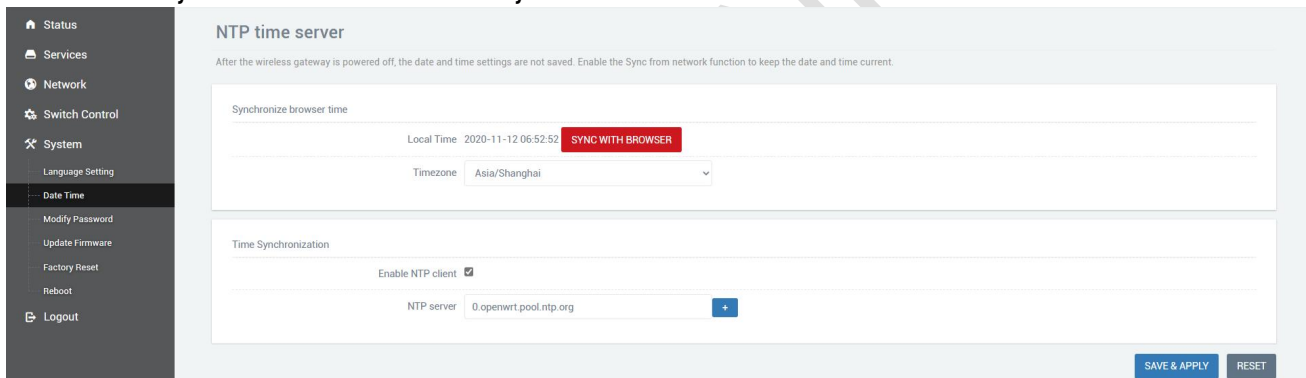
4.1 Language Setting

Select "System" >>> "Language Setting" to modify the serial device server language, select the language and click Save.

4.2 Date Time

Select "System" >>> "Date Time" to synchronize the local time or the time of the NTP server.

4.3 Modify Password
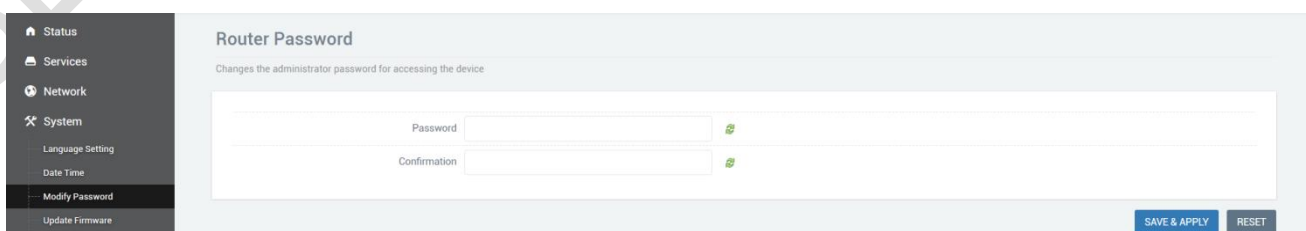
Select "System" >>> "Modify Password" to modify the login password of the serial device server page.

Password：Specify the password that you want to modify.

Confirmation：Confirm the password you want to change.

If the password does not match the confirm password, the password modification fails.

If it is consistent, the modification is successful, and after the password is changed, the password will take effect on the next login page.

4.4 Update Firmware
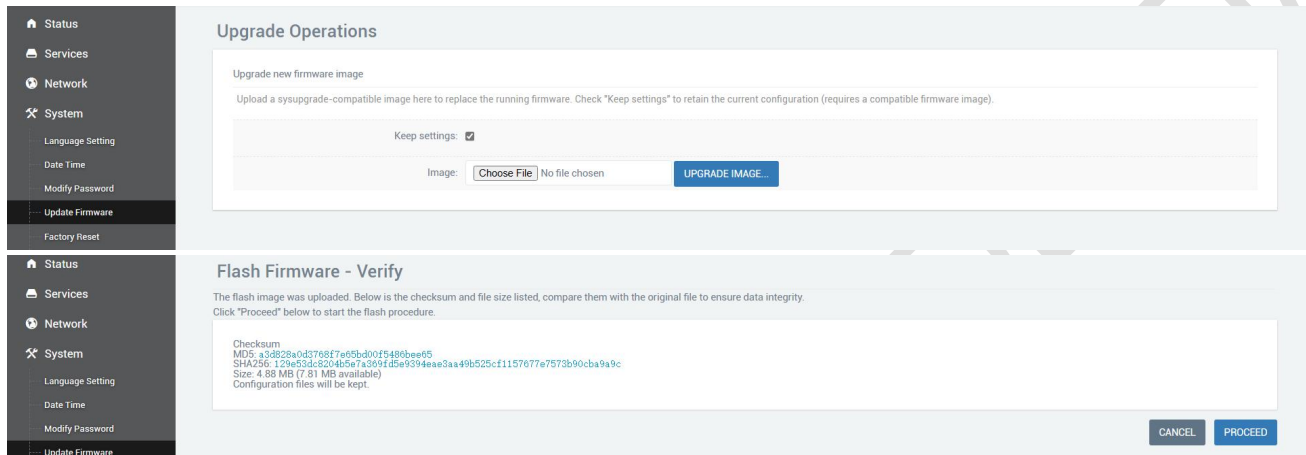
Select "System">>>"Update Firmware".

Image：Click "Choose File" to select your firmware file. Click "UPGRADE IMAGE...".

MD5：MD5 of firmware.   **Size**：The size of the firmware file.

Click "PROCEED" to start the firmware upgrade, it is recommended not to retain the configuration when the firmware is updated.

4.5 Factory Reset

Select "System" >>> "Factory Reset" in turn, and the factory reset can effectively solve some errors caused by improper configuration.

4.6 Reboot

Select "System">>>"Reboot"。

Device Reboot: Click Perform reboot and the device restarts.
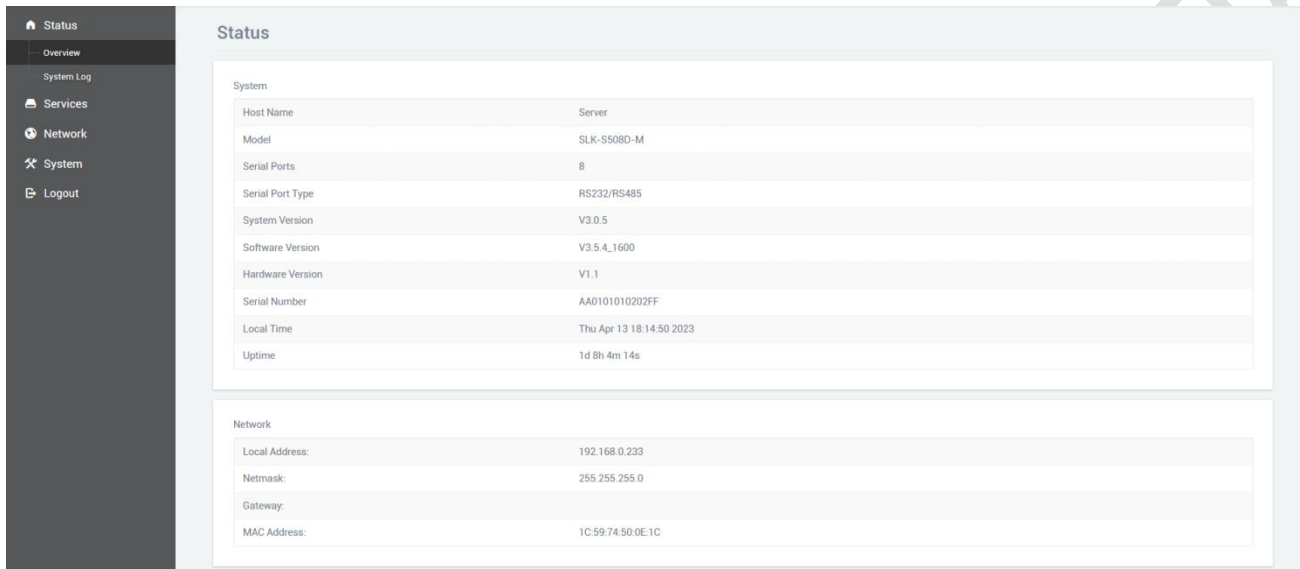
Chapter 5 Check

5.1 Status

Select "Status">>>"Overview",Displays system-related information.

5.2 System Log

Select "Status">>>"System Log", Displays the system log.

Chapter 6 Logout

Click "Logout" to exit the current page and enter the login interface.

Thank you for your support of SERIALLINK products.

If you have any questions, please email: info@seriallink.net or www.seriallink.net