3onedata



Serial Server

User Manual

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Industrial Ethernet Communication Solution Expert **3onedata Co., Ltd.**

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Preface

This manual has introduced the serial server:

- COM Mode
- Overview of related principles of network management

Note

The screenshot reference model for this manual is 16 3IN1 serial ports + 2 100M copper ports + 2 220VAC power inputs. Other types of products in addition to the supported serial type (RS-232, RS-422, RS-485), and the number of network ports, serial ports and power supplies, the interface functions and operation are the same.

Audience

This manual applies to the following engineers:

- Network administrators
- Technical support engineers

Text Format Convention

Format	Description
" "	Words with “” represent the interface words. Such as: “Port No.“.
>	Multi-level path is separated by ">". Such as opening the local connection path description: Open "Control Panel> Network Connection> Local Area Connection".
Light Blue Font	It represents the words clicked to achieve hyperlink. The font color is as follows: ‘Light Blue’.
About this chapter	The section ‘about this chapter’ provide links to various sections of this chapter, as well as links to the Principles Operations Section of this chapter.

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Symbols

Format	Description
 Notice	Remind the announcements in the operation, improper operation may result in data loss or equipment damage.
 Warning	Pay attention to the notes on the mark, improper operation may cause personal injury.
 Note	Conduct a necessary supplements and explanations for the description of operation content.
 Key	Configuration, operation, or tips for device usage.
 Tips	Pay attention to the operation or information to ensure success device configuration or normal working.

Port Convention

The port number in this manual is only an example, and does not represent the actual port with this number on the device. In actual use, the port number existing on the device shall prevail.

Revision Record

Version No.	Date	Revision note
01	06/09/2017	Manual development
02	10/10/2017	Add Password Verification Function
03	08/28/2018	Change screenshots
04	12/06/2021	Upgrade
05	29-03-2022	Optimize the description of Password Verification Function

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1 Log in the Web Interface

About This Chapter

Content	Link
This Chapter	1.1 System Requirements for WEB Browsing 1.2 Setting IP Address of PC 1.3 Log in the Web Configuration Interface

1.1 System Requirements for WEB Browsing

Using this equipment, the system should meet the following conditions.

Hardware and Software	System Requirements
CPU	Above Pentium 586
Memory	Above 128MB
Resolution	Above 1024x768
Color	256 color or above
Browser	Internet Explorer 6.0 or above
Operating system	Windows XP/7/8/10

1.2 Setting IP Address of PC

The router default management is as follows:

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IP Settings	Default Value
IP address (LINK1)	192.168.1.254
Subnet mask	255.255.255.0

Note

The network configuration of parts of double IP device supports single IP and double IP modes.

- In the single IP mode, the default IP address of Ethernet port LINK1/LINK2 is 192.168.1.254.
- In the Dual IP mode, the default IP address of Ethernet port LINK1 is 192.168.1.254, the default IP address of Ethernet port LINK2 is 192.168.8.254.

When configuring a device through the Web:

- Before conducting remote configuration, please confirm the route between computer and device is reachable.
- Before making a local configuration, make sure that the IP address of the computer and the serial server are on the same subnet.

Note

While configuring the device for the first time, if it's the local configuration mode, first confirm the network segment of current PC is 1.

Eg: Assume that the IP address of the current PC is 192.168.5.60, change the network segment "5" of the IP address to "1".

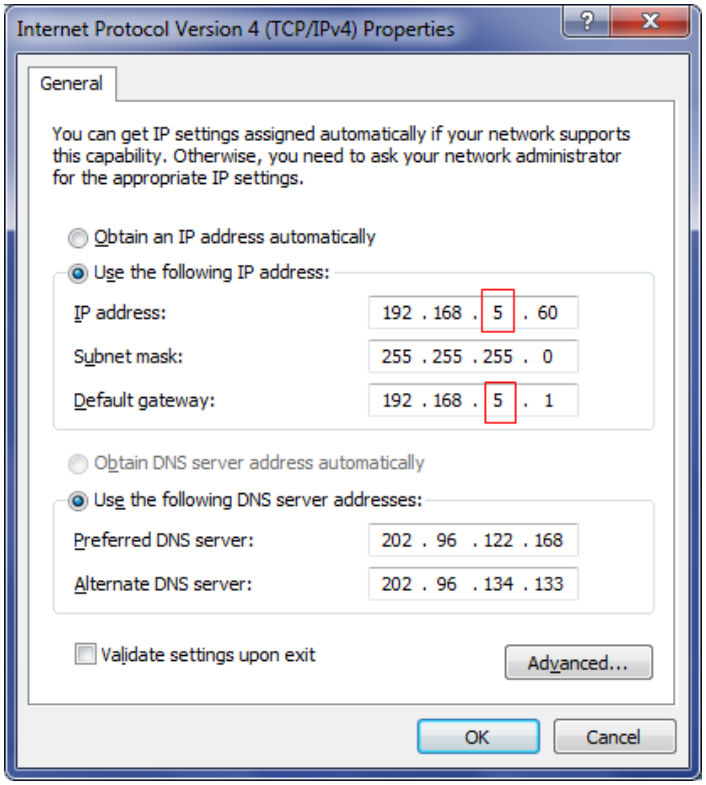
Operation Steps

Amendment steps as follow:

Step 1 Open "Control Panel> Network Connection> Local Area Connection> Properties> Internet Protocol Version 4 (TCP / IPv4)> Properties".

Step 2 Change the selected "5" in red frame of the picture below to "1".

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Step 3 Click “OK”, IP address is modified successfully.

Step 4 End.

1.3 Log in the Web Configuration Interface

Operation Steps

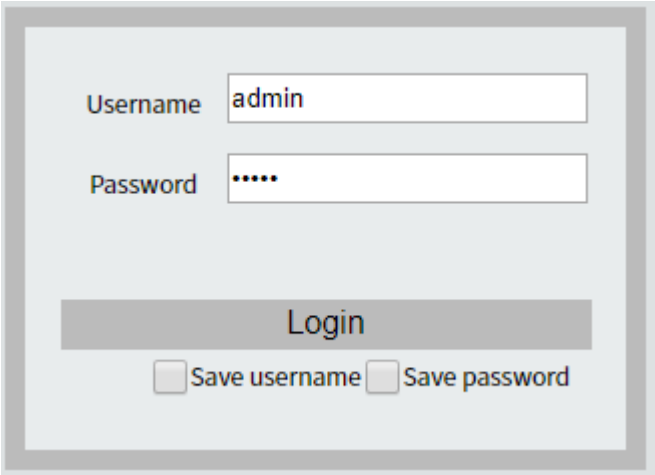
Login in the web configuration interface as follow:

Step 1 Run the computer browser.

Step 2 Enter the address of the device "http://192.168.1.254" in the address bar of the browser.

Step 3 Click the “Enter” key.

Step 4 Pop-up dialog box as shown below, enter the user name and password in the login window.



Note:

- The default username and password are “admin”; please strictly distinguish capital and small letter while entering.
- Default user account has the administrator privileges.

Step 5 Click "Login".

Step 6 End.

After login in successfully, user can configure relative parameters and information according to demands.

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2 System Information

About this chapter

Content	Link
This Chapter	2.1 Product Information 2.2 Network information

2.1 Product Information

Function Description

In “Device information” interface, user can check Device name,Device model, Serial No, Firmware Ver, Device time, Description, Number of LAN, CPU Utilization, Memory Utilization and so on.

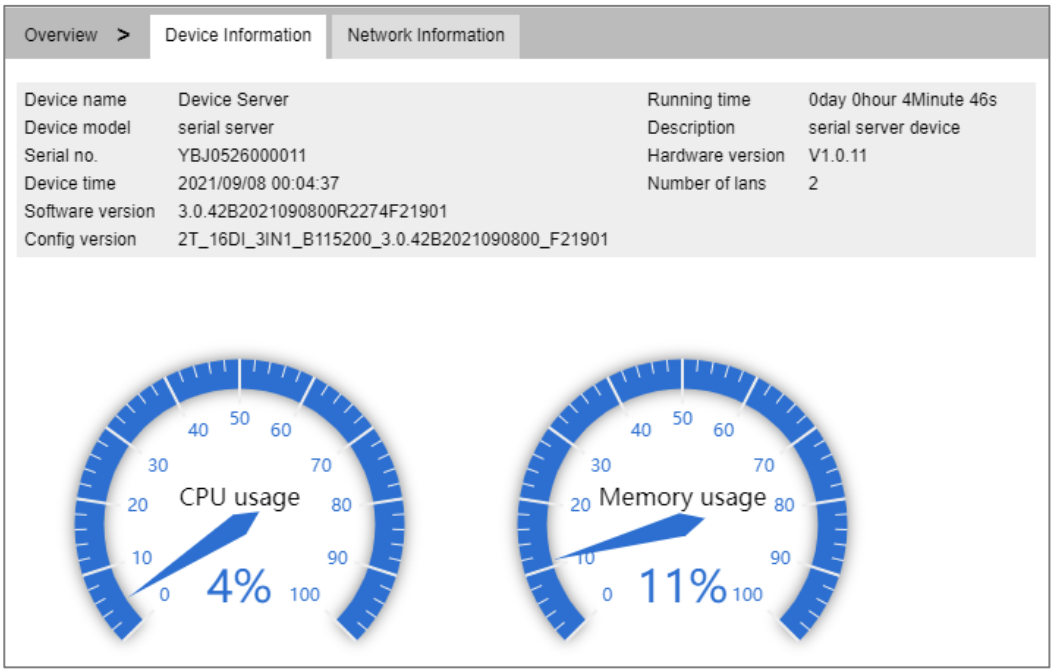
Operation Path

Open in order: “System Maintenance > Device information”.

Interface Description

The product information interface is as follows:

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The main elements configuration description of device information interface:

Interface Element	Description
Device name	Network identity or device type of the device. Note: Configure the device name on the "System Management > Device Information Configuration" page.
Device model	Equipment model or name of the device.
Serial No.	Serial number of the device
Device time	The time display of current device, which can synchronize the time of local PC or NTP server.
Software Version	Software version information of the device.
Config version	Software version information of the device.
Running time	Running time of the current device.
Description	Description information of the device. Note: Configure the device information On the "System Management > Device Information Configuration" page.
Hardware Version	Current hardware version information, pay attention to the hardware version limits in software version.
Number of LAN	The network port number of the device.
CPU usage	CPU usage of the current device.
Memory usage	Memory usage of the current device.

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2.2 Network Information

Function Description

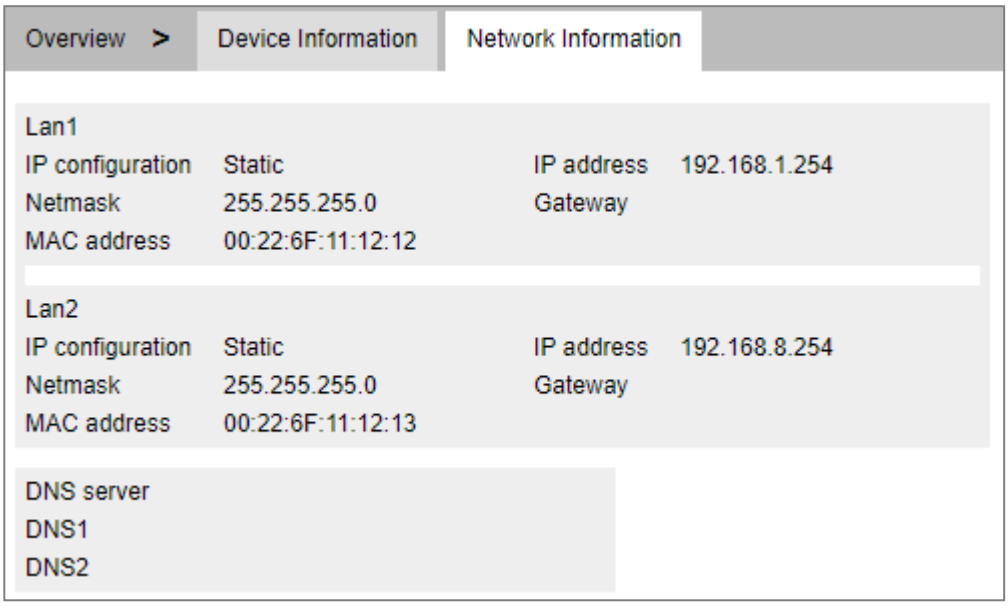
On the page of "Network information", user can check device network address information and DNS server information.

Operation Path

Open in order: “System Information > Network Information”.

Interface Description

Network information interface as follows:



The main elements configuration description of network information interface.

Interface Element	Description
LAN1	**LAN1 information bar**
IP Configuration	Shows how the LAN 1 of the device gets the IP address.
Netmask	Display device subnet mask.
MAC Address	Display the MAC address of device LAN1.
IP Address	Display LAN1 IP address.
Gateway	Display LAN1 gateway address.
LAN2	**LAN2 information bar**
IP Configuration	Shows how the LAN 2 of the device gets the IP address.
Netmask	Display device LAN2 subnet mask.

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Interface Element	Description
MAC Address	Display device LAN 2 MAC address.
IP Address	Display LAN2 IP address.
Gateway	Display LAN2 IP address.
DNS server	**DNS server information bar**
DNS1	Display the main DNS server address of the device.
DNS2	Display device backup DNS server address.

Note

The dual-port device or dual-IP mode displays the "Lan1" and "Lan2" columns. The single-port device or single-IP mode displays only the "Lan1" column.

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3 Network Configuration

Function Description

On the “Network Settings” page, user can set the IP address and DNS address of this device. The IP address of the device supports DHCP/BOOTP protocol dynamic acquisition or manual static configuration.

Note

- Parts of dual-IP device provide two Ethernet ports, which can work in single IP mode (redundant mode / switching mode) or dual IP mode to meet the requirements of various network environments.
- The configuration of single-IP device is the same with that of dual-IP device, except the network address of single-IP device doesn’t support “Network Mode” and “Mode Setting”.

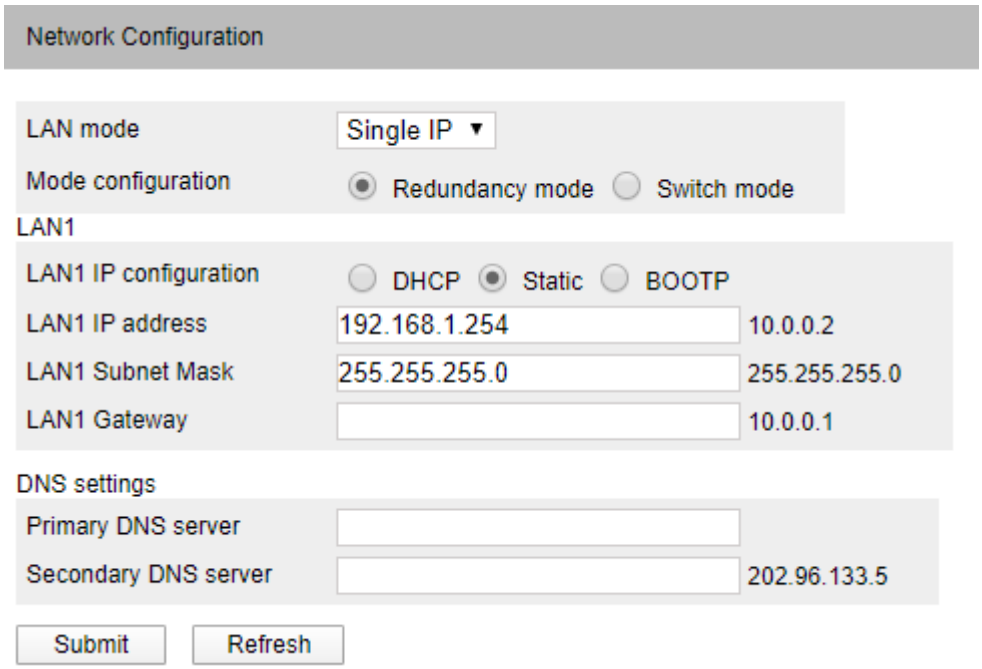
Operation Path

Open: “Network Configuration”.

Interface Description 1: Single IP

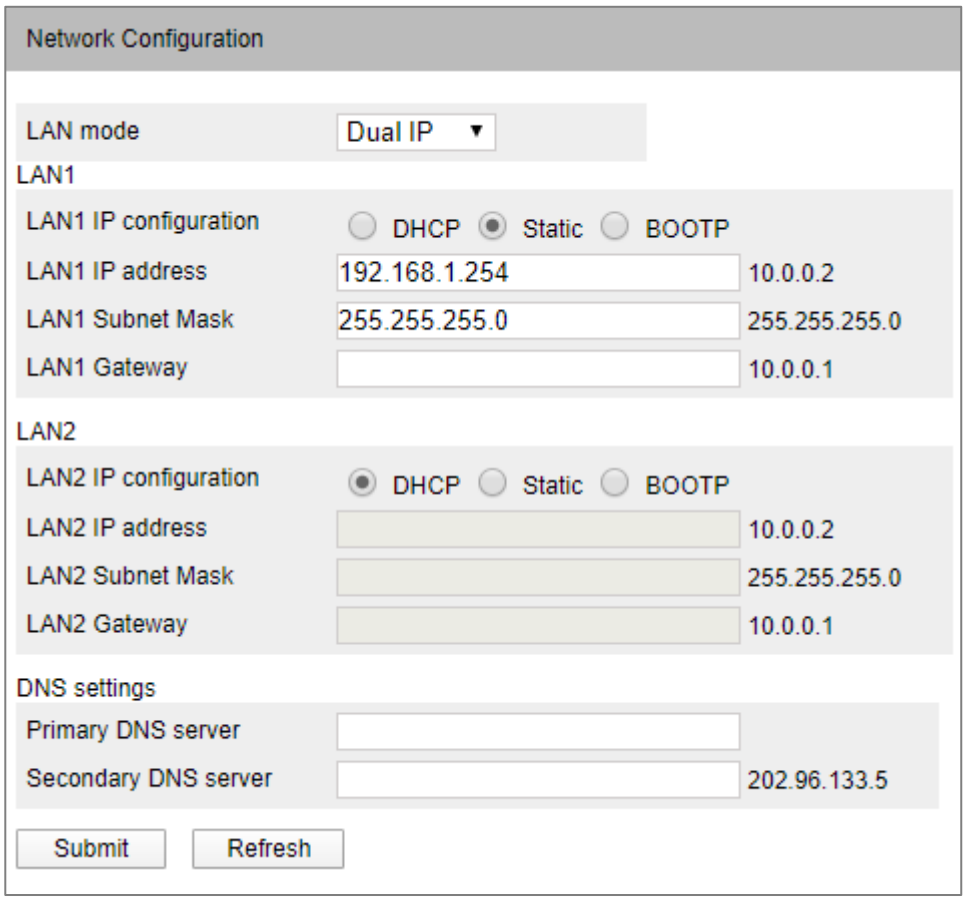
Single IP interface is as below:

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Interface Description 2: Dual IP

Dual IP interface is as below:



The main element configuration description of network configuration interface:

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Interface Element	Description
LAN Mode	The network mode drop-down list of the device can be selected as follows: • Single IP: the device ports LINK1 and LINK2 are in the same network LAN1; • Dual IP: the device has dual IP and dual MAC addresses, with port LINK1 in network LAN1 and port LINK2 in network LAN2.
Mode Configuration	In the single IP mode, the operation mode of the equipment network port can be checked as follows: • Redundancy mode: Ports LINK1 and LINK2 are redundant ports, which support link backup. One port is in active state and one port is in backup state; • Switch mode: ports LINK1 and LINK2 are normal Ethernet ports.
LAN1	**LAN1 Configuration Bar**
LAN1 IP Configuration	Configuration of network address of device LAN 1: • Obtain an IP address automatically(DHCP): Obtain an IP address, subnet mask, and gateway address automatically from DHCP server. • Manual setting: manually configure the IP address, subnet mask, and gateway address. • BOOTP: Automatically obtain IP address, subnet mask and default gateway address from BOOTP(Bootstrap Protocol) server.
LAN1 IP Address	Manually set the IP address of the device LAN1, which is 192.168.1.254 by default.
LAN1 Subnet Mask.	Manually set the subnet mask of the device LAN1, which is 255.255.255.0 by default.
LAN1 Gateway	Manually set the gateway address of the device LAN 1.
LAN 2	**LAN2 configuration bar**
LAN2 IP Configuration	Configuration of network address of device LAN 2: • Obtain an IP address automatically(DHCP): Obtain an IP address, subnet mask, and gateway address automatically from DHCP server. • Manual setting: manually configure the IP address, subnet mask, and gateway address. • BOOTP: Automatically obtain IP address, subnet mask and default gateway address from BOOTP(Bootstrap Protocol) server.

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Interface Element	Description
LAN2 IP Address	Manually set the IP address of the device LAN 2, which is 192.168.1.254 by default.
LAN2 Subnet Mask.	Manually set the subnet mask of the device LAN 2, which is 255.255.255.0 by default.
LAN2 Gateway	Manually set the gateway address of the device LAN 2.
DNS Settings	**DNS Settings Bar**
Primary DNS server	DNS Sever IP address, for example: 202.96.133.4.
Secondary DNS server	DNS Sever backup IP address, for example: 202.96.133.5.

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4 COM Settings

Function Description

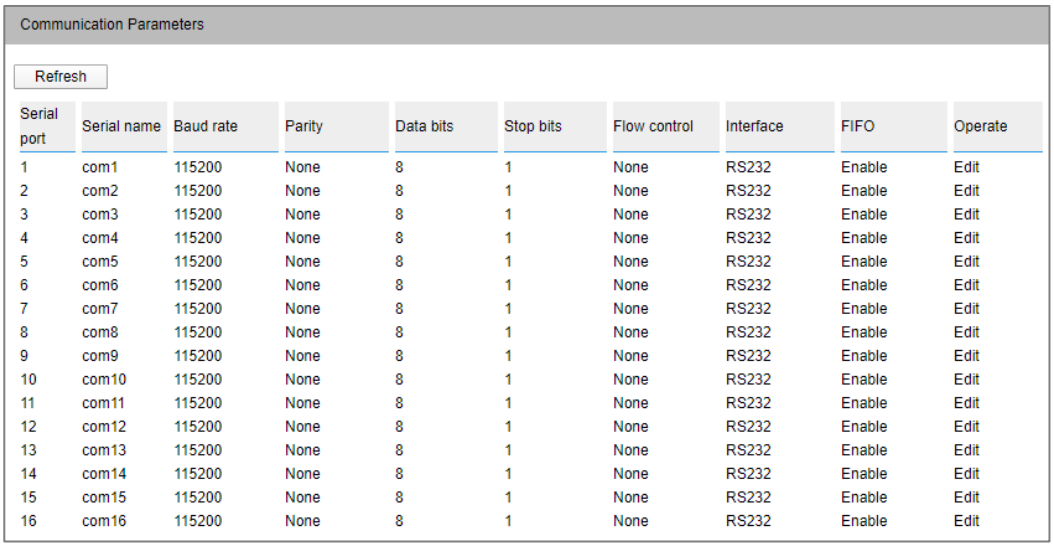
On the "COM Settings" page, you can view and configure the baud rate, parity bit, data bit, stop bit, flow control, interface type, FIFO function and other parameters of each serial port of the device.

Operation Path

Open: “COM Settings”.

Interface Description

COM setting interface as follows:



Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

The main element configuration description of serial port setup interface:

Interface Element	Description
Serial port	Display the serial port number of the device.

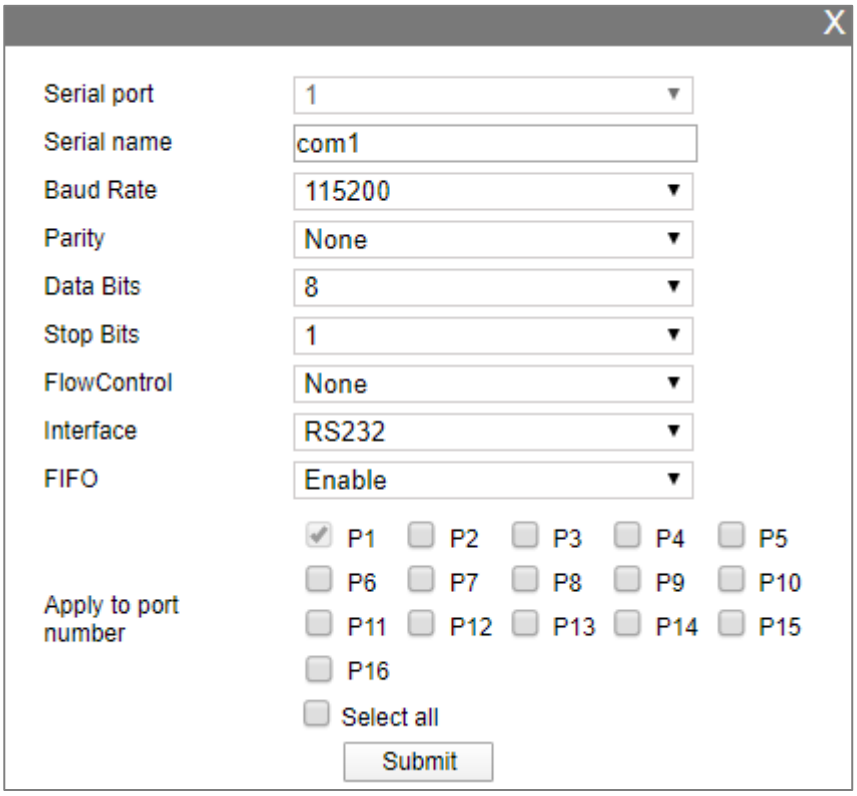
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Interface Element	Description
Serial name	Displays the name of the device.
Baud Rate	Displays the baud rate of the device's serial port.
Parity	Displays the parity bits of the device's serial Port.
Data Bit	Displays the data bits of the device's serial port.
Stop Bit	Displays the stop bits of the device's serial port.
Flow control	Displays whether the flow control function of the device's serial port is enabled.
Interface	Displays the interface mode of the device's serial port.
FIFO	Display whether the FIFO function of the device's serial port is enabled.
Operate	Click Edit to modify the parameters of the device's serial port.

Click Edit in the serial port entry to modify the current serial port parameters.

Interface Description: Edit

Edit interface is as follows:



Configuration description of main elements of the Edit interface:

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Interface Element	Description
Serial port	Display the serial port number of the device.
Serial name	The text box of serial port name, which supports 1-32 letters or numbers input, and can customize the name of the current serial port.
Baud Rate	Choose baud rate of corresponding serial port. Unit: bps. Options: 110/300/600/1200/2400/4800/9600/19200/38400/57600/115200
Parity	Select parity bits of corresponding serial number. Options: • None • Odd • Even • Mark • Space
Data Bit	Select data bits of corresponding serial number. Options: • 5 bits • 6 bits • 7 bits • 8 bits
Stop Bit	Select stop bits of corresponding serial number. Options: • 1 bits • 2 bits Note: When the data bit is 5bits, stop bit is 1bits and 1.5bits optional.
Flow control	Flow control is used in two data transmission speed of different devices in the control of data flow technology to ensure that two devices communicate with each other to avoid data loss. Click the "flow control" drop-down list box, select the flow control parameters, the options are: • None • RTS/CTS • DTR/DSR • XON/XOFF
Interface	Determined by both hardware and software, options are as follows: • RS232 • RS422 • RS485
FIFO	Enable or disable the FIFO function, if the serial device does

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Interface Element	Description
	not support data transceiver cache FIFO, FIFO function can be disabled to avoid data transmission errors.
Apply to port number	Check the serial port check box to apply the current settings to the specified serial port.

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5 COM Mode

About This Chapter

Content	Link
This Chapter	5.1 RealCom Mode 5.2 TCP Server Mode 5.3 TCP Client Mode 5.4 UDP Server Mode 5.5 UDP Client Mode 5.6 UDP Rang Mode 5.7 UDP Multicast Mode 5.8 Disable Mode

Function Description

On the "COM Mode" page, you can configure the working mode of the corresponding serial port number of the device.

The working modes supported by the device are:

- RealCom Mode
- TCP Server Mode
- TCP Client Mode

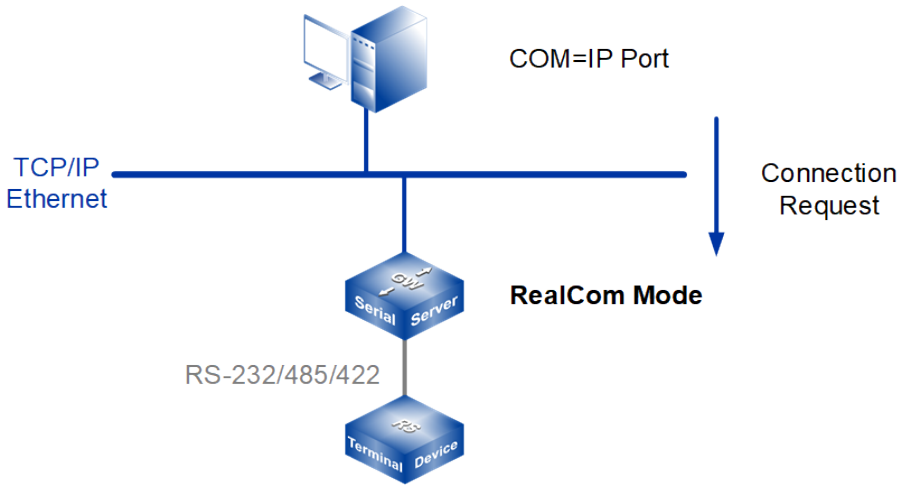
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- UDP Server Mode
- UDP Client Mode
- UDP Rang Mode
- UDP Multicast Mode
- Disable Mode

Operation Path

Open in order “COM Mode > Port1”. Under the menu of "COM Mode", the corresponding serial port information can be configured by entering different serial ports. The configuration operation mode of all serial ports' WEB interfaces is the same.

5.1 RealCom Mode



Note:

The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

In RealCom mode, the serial port server and Windows / Linux operating system with the RealCOM drive work cooperatively. RealCom COM/TTY driver establishes a transparent or secure network transmission connection between the host and the serial device in the operating system. Map the serial port of the serial port server to the local COM/TTY device of the host according to the user configured serial server IP address and serial port number and other parameters. The original serial device

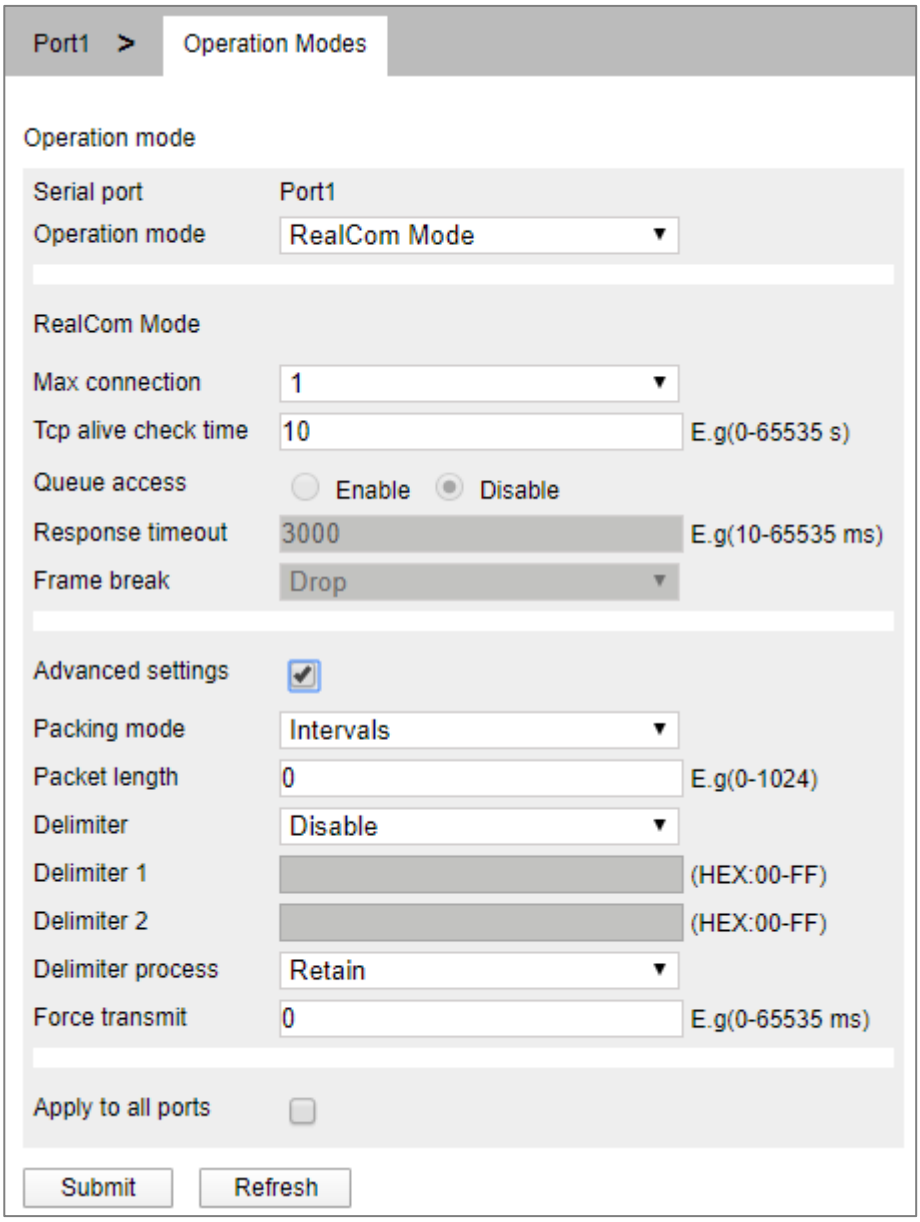
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software or communication module without modification can be used directly without modification.

The RealCom driver gets the data be sent to the local COM / TTY device of the host, then sends it over Ethernet in the form of TCP / IP packet. At the other end of the transmission, the serial server will receive the TCP / IP packet and analyse the packet, and after unpacking send the original data to the serial device through the corresponding serial port, and vice versa.

Interface Description

The interface of RealCom Mode is as follows:



Main element configuration instructions in RealCom Mode interface

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Interface Element	Description
Operation mode	**Operation Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode • Disable Mode
RealCom Mode	**RealCom Mode configuration bar**
Max connection	The number of host that one serial port connects to. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 connections.
TCP Alive Check Time	If there isn't any TCP activity within schedule time, the system will automatically send connection detection message and check whether the TCP connection is valid. If the reply packet of opposite side hasn't been received after sending probe packet for 3 times, system will regard the opposite side as down and forwardly close the communication connection.
Queue Access	With multiple host connections, the command mode only supports one request and one response from each host, and one response data can be cached in response to other same requests. Options are as follows: • Enable; • Disable; Note: Command mode is enabled when the number of connections is greater than 1.
Response timeout	Time interval that allows the serial server to respond to each host's request, the communication between serial server and host is deemed to be completed after schedule time, serial server continues to deal with the next host request.
Frame break	The processing mode of serial port data with no request and automatic response of serial port equipment is as follows: • Discard: discard the unrequested serial data; • Transmit to the last communication connection: transmit

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Interface Element	Description
	the unrequested serial port data to the last communication connection; • Transmit to all open connection: transmit the unrequested serial port data to all open connection;
Advanced Settings	**Advanced Settings Configuration Bar**
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	The frame length of serial data to Ethernet data. In the set time range, the data forwards when it is greater than or equals to the set frame length. The value range is 0~1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • Disable: disable delimiter function; • 1: enable delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is 00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte.

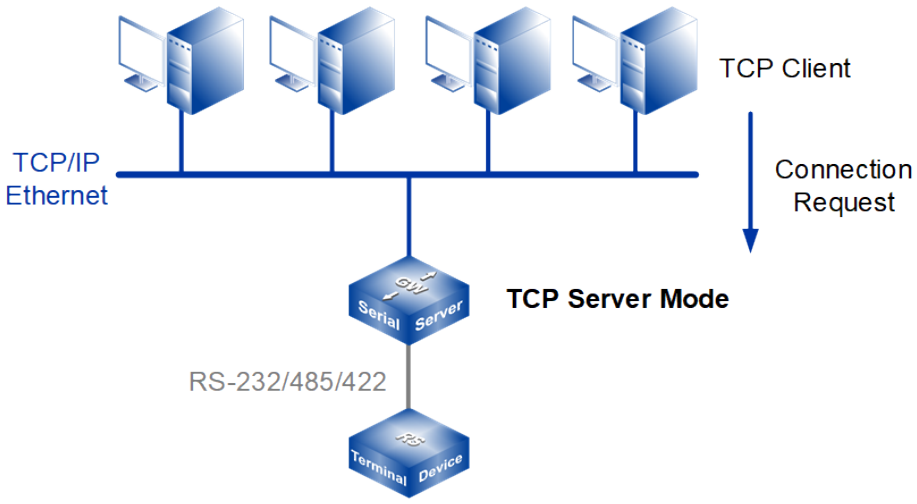
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Interface Element	Description
	• Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	If the transmission time is greater than 0, the system sends the serial data received within the specified time through a packet, in the range of 0 to 65535 ms. When the transfer time is 0, it means that the data transmission interval is not restricted.
Apply to All Ports	Check the “Apply to all port” check box to apply the current settings to all serial ports.

Notice

When the maximum number of connections is greater than 1, set the parameters to be consistent when multiple hosts are connected to the same serial port, otherwise it will cause communication error.

5.2 TCP Server Mode



Note:

The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

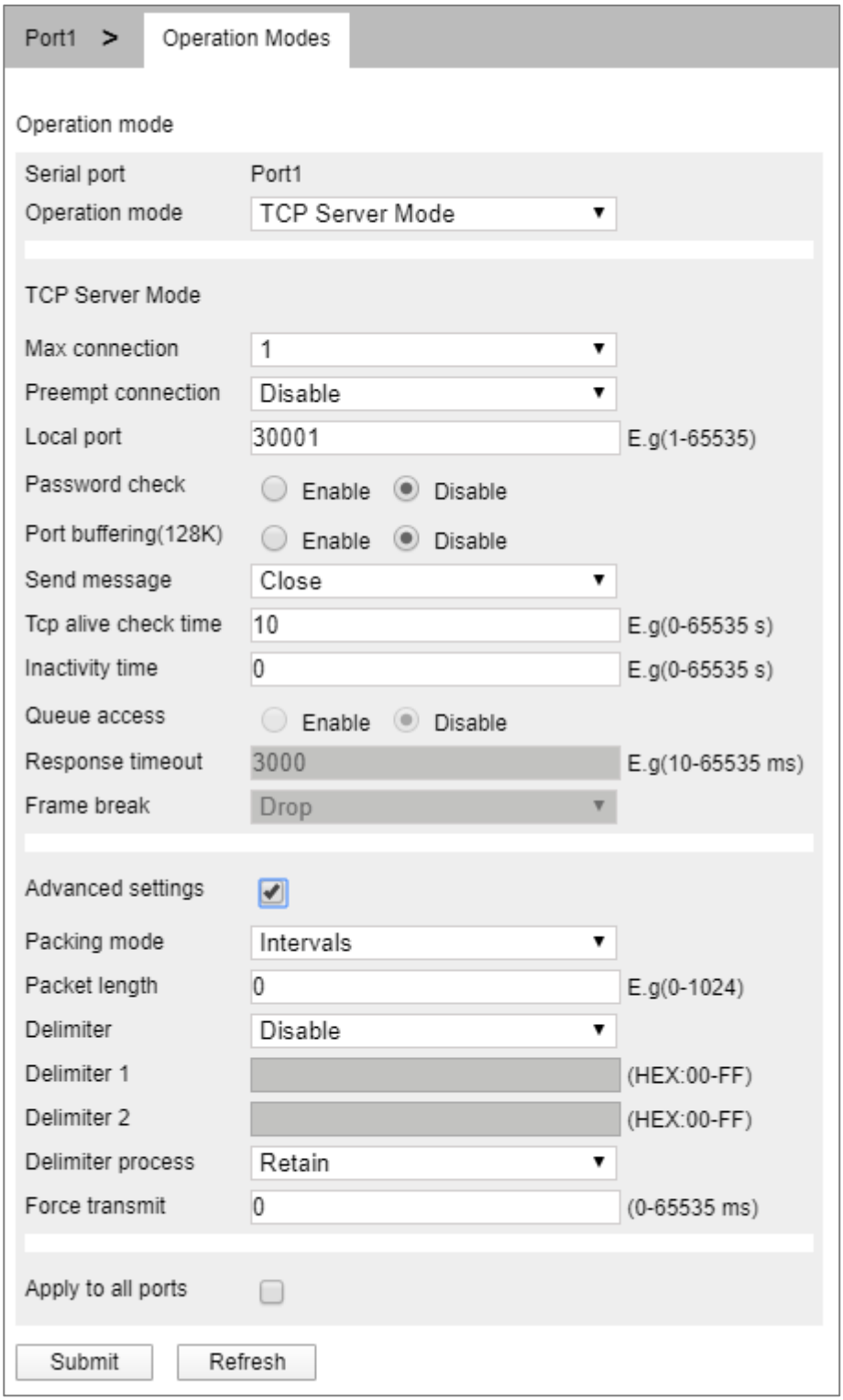
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In TCP server mode, the device is assigned an IP port number and passively waits for the host to connect. When the host initiates a connection request and establishes a connection with the device, the host can realize bidirectional transparent or encrypted data transmission through network connection and serial port. The TCP server mode supports up to four session connections simultaneously, allowing multiple hosts to simultaneously read or send Ethernet data to a serial device.

Interface Description

TCP server mode interface is as follows:

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TCP server mode interface main element configuration instructions:

Interface Element	Description
Operation mode	**Operation Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode

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Interface Element	Description
	• TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode • Disable Mode
TCP Server Mode	**TCP Server Mode Configuration bar**
Max connection	The number of host that one serial port connects to. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 connections.
Preempt Connection	When exceed the maximum number of connection request, the number of sessions that have established TCP connections can be preempted, options are as follows: • Disable: established TCP link are not allowed to be preempted; • First connection: the TCP link that first establishes will be preempted; • Longest uncommunicated: the longest uncommunicated TCP link will be preempted.
Local port	The destination connection port of TCP client.
Password check	After the device is connected with the opposite end, the opposite end needs to send the authentication password to the device. If the authentication password is verified, the device and the opposite end can start communication. Options are: • Disable: disable password authentication function. • Enable: enable password authentication function. Note: When password authentication is enabled, only users with administrator privileges can send/receive messages using this device. • The first data sent by the opposite end to the device defaults to the authentication password. • The authentication password is a hexadecimal data with 64 bytes. The first 32 bytes are the administrator account, fill with 0 if less than 32 bytes; the last 32 bytes are the administrator password, fill with 0 if less than 32 bytes. • If the authentication password is entered incorrectly, the

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Interface Element	Description
	connection will be broken. After re-establishing the connection with the opposite end, you can re-enter the authentication password. Take the administrator whose account and password are "admin" as an example. The hexadecimal data corresponding to "admin" is "61 64 6D 69 6E", then the check code of the first and the last 32 bytes are "61 64 6D 69 6E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00", the authentication password is "61 64 6D 69 6E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 61 64 6D 69 6E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00".
Port Buffering(128k)	Port data cache, which can cache COM port data up to 128K after the network is abnormal. When the network returns to normal, the cached data is forwarded. The tick options are as follows: • Enable • Disable
Send message	The information sent after the device is connected to the peer client. Options: • Ipaddr: After the connection is successful, send the IP address of the device to the remote client. • Devicename: After the connection is successful, send the devicename of the device to the remote client. • turnoff: After the connection is successful, no information is sent to the peer client.
TCP Alive Check Time	If there isn't any TCP activity within schedule time, the system will automatically send connection detection message and check whether the TCP connection is valid. If the reply packet of opposite side hasn't been received after sending probe packet for 3 times, system will regard the opposite side as down and forwardly close the communication connection.
Inactivity time	Set the idle time of current data communication link of the device. If the idle time-out during communication is larger than 0, the system would close the TCP connection without any data transmission activity occurring in the specified time automatically. 0 means the free TCP connection would not be closed automatically.
Queue access	With multiple host connections, the command mode only supports one request and one response from each host, and

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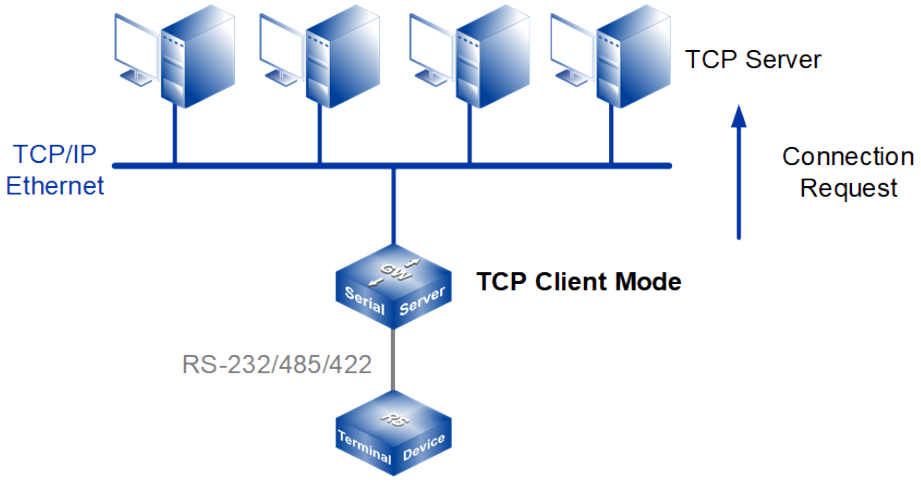
Interface Element	Description
	one response data can be cached in response to other same requests. Options are as follows: • Enable; • Disable; Note: Command mode is enabled when the number of connections is greater than 1.
Response timeout	The time it allowed for the device to respond to the request of each host. When the specified time arrives, the communication between the device and the host is considered complete, and the request of the next host continues to be processed.
Frame break	The processing mode of serial port data with no request and automatic response of serial port equipment is as follows: • Discard: discard the unrequested serial data; • Transmit to the last communication connection: transmit the unrequested serial port data to the last communication connection; • Transmit to all open connection: transmit the unrequested serial port data to all open connection;
Advanced Settings	**Advanced Settings Configuration Bar**
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	The frame length of serial data to Ethernet data. In the set time range, the data forwards when it is greater than or equals to the set frame length. The value range is 0~1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • Disable: disable delimiter function;

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Interface Element	Description
	• 1: enable delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is 00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte. • Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	If the transmission time is greater than 0, the system sends the serial data received within the specified time through a packet, in the range of 0 to 65535 ms. When the transfer time is 0, it means that the data transmission interval is not restricted.
Apply to All Ports	Check the “Apply to all port” check box to apply the current settings to all serial ports.

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5.3 TCP Client Mode



Note:

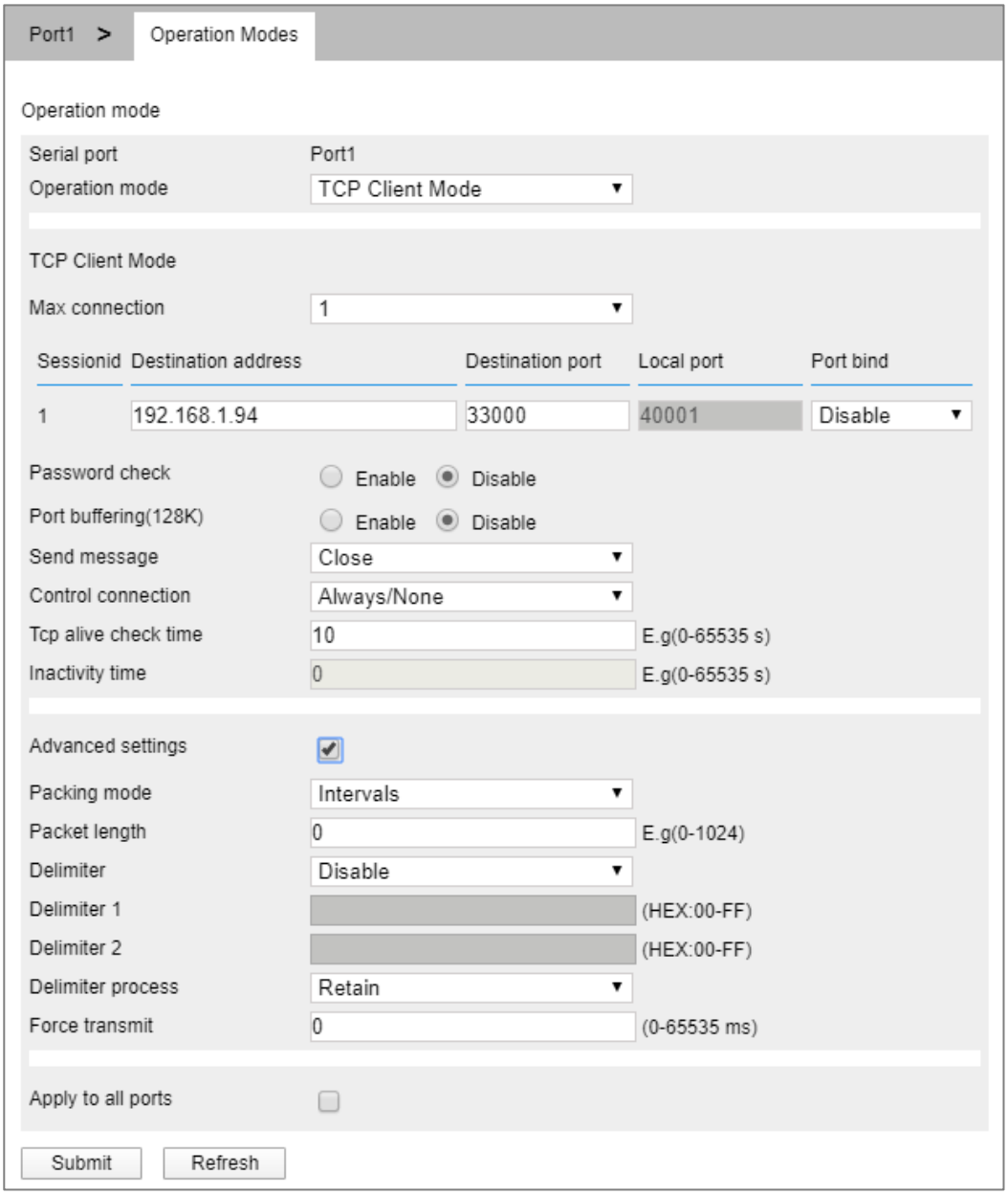
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

In TCP client mode, the device can actively establish a network connection with the host specified by the user when the serial port data arrives. After the data transmission is completed, the device will automatically close the network connection according to TCP keep-alive time/idle timeout and other parameters. Similarly, TCP client mode can support up to four session connections at the same time, so that multiple hosts can simultaneously read or send Ethernet data to a serial device.

Interface Description

TCP Client mode interface is as follows:

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TCP client mode interface main element configuration instructions:

Interface Element	Description
Operation mode	**Working Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode

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Interface Element	Description
	• Disable Mode
TCP Client Mode	**TCP Client Mode Configuration Bar**
Max connection	The number of host that one serial port connects to. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 connections.
Session id	The number of TCP connection sessions corresponds to the maximum number of connections.
Destination Address	Enter the IP address of the server to which the device is connected.
Destination Port	Enter the TCP port number of the server to which the device is connected.
Local Port	A local port number assigned by the device for TCP connection, which can provide service or connection to the outside world, is used to connect and communicate with the server.
Port bind	Local port fixed, options are as follows: • Disable: the system automatically selects the idle local port to establish a connection with the server; • Enable: connect to the server using a manually configured local port.
Password check	After the device is connected with the opposite end, the opposite end needs to send the authentication password to the device. If the authentication password is verified, the device and the opposite end can start communication. Options are: • Disable: disable password authentication function. • Enable: enable password authentication function. Note: When password authentication is enabled, only users with administrator privileges can send/receive messages using this device. • The first data sent by the opposite end to the device defaults to the authentication password. • The authentication password is a hexadecimal data with 64 bytes. The first 32 bytes are the administrator account, fill with 0 if less than 32 bytes; the last 32 bytes are the administrator password, fill with 0 if less than 32 bytes. • If the authentication password is entered incorrectly, the

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Interface Element	Description
	connection will be broken. After re-establishing the connection with the opposite end, you can re-enter the authentication password. Take the administrator whose account and password are "admin" as an example. The hexadecimal data corresponding to "admin" is "61 64 6D 69 6E", then the check code of the first and the last 32 bytes are "61 64 6D 69 6E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00", the authentication password is "61 64 6D 69 6E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 61 64 6D 69 6E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00".
Port Buffering(128k)	Port data cache, which can cache COM port data up to 128K after the network is abnormal. When the network returns to normal, the cached data is forwarded. The tick options are as follows: • Enable • Disable
Send message	The information sent after the device is connected to the peer client. Options: • Ipaddr: After the connection is successful, send the IP address of the device to the remote client. • Devicename: After the connection is successful, send the devicename of the device to the remote client. • turnoff: After the connection is successful, no information is sent to the peer client.
Connection control	Select how the device initiates a connection request and disconnectsit. Options: • Always/None – Always: Immediately tries to establish a connection with the target host after the system is started and automatically reconnects the target host after the connection is disconnected. – None: Never shut down the network connection automatically. • Char/None – Char: Automatically connects to the target host when receiving data from the serial port. – None: Never shut down the network connection automatically. • Char/Idel – Char: Automatically connects to the target host when

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Interface Element	Description
	receiving data from the serial port. – Idle: If the idle timeout time is greater than 0, the system will automatically shut down TCP connections that do not have any data send and receive activity for a specified period of time. • DSR On/ DSR Off – DSR On: Automatically connects to the target host when the DSR signal is detected. – DCD Off: Automatically shuts down the network connection when the DCD signal is detected invalid. • DSR On/ None – DSR On: Automatically connects to the target host when the DSR signal is detected. – None: Never shut down the network connection automatically. • DCD On / DCD Off – DCD On: Automatically connects to the target host when the DCD signal is detected. – DCD Off: Automatically shuts down the network connection when the DCD signal is detected invalid. • DCD On / None – DCD On: Automatically connects to the target host when the DCD signal is detected. – None: Never shut down the network connection automatically.
TCP Alive Check Time	If there isn't any TCP activity within schedule time, the system will automatically send connection detection message and check whether the TCP connection is valid. If the reply packet of opposite side hasn't been received after sending probe packet for 3 times, system will regard the opposite side as down and forwardly close the communication connection.
Inactivity time	Set the idle time of current data communication link of the device. If the idle time-out during communication is larger than 0, the system would close the TCP connection without any data transmission activity occurring in the specified time automatically. 0 means the free TCP connection would not be closed automatically.
Advanced Settings	**Advanced Settings Configuration Bar**

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Interface Element	Description
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	The frame length of serial data to Ethernet data. In the set time range, the data forwards when it is greater than or equals to the set frame length. The value range is 0~1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • Disable: disable delimiter function; • 1: enable delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is 00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte. • Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	If the transmission time is greater than 0, the system sends

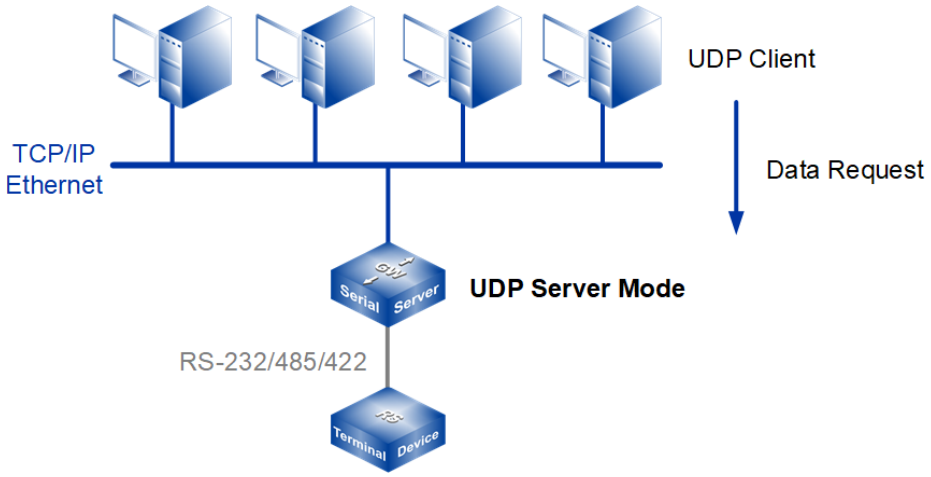
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Interface Element	Description
	the serial data received within the specified time through a packet, in the range of 0 to 65535 ms. When the transfer time is 0, it means that the data transmission interval is not restricted.
Apply to All Ports	Check the “Apply to all port” check box to apply the current settings to all serial ports.

Notice

The inactivity time takes effect only when "Control Connection" is set to "Char/Idle".

5.4 UDP Server Mode



Note:

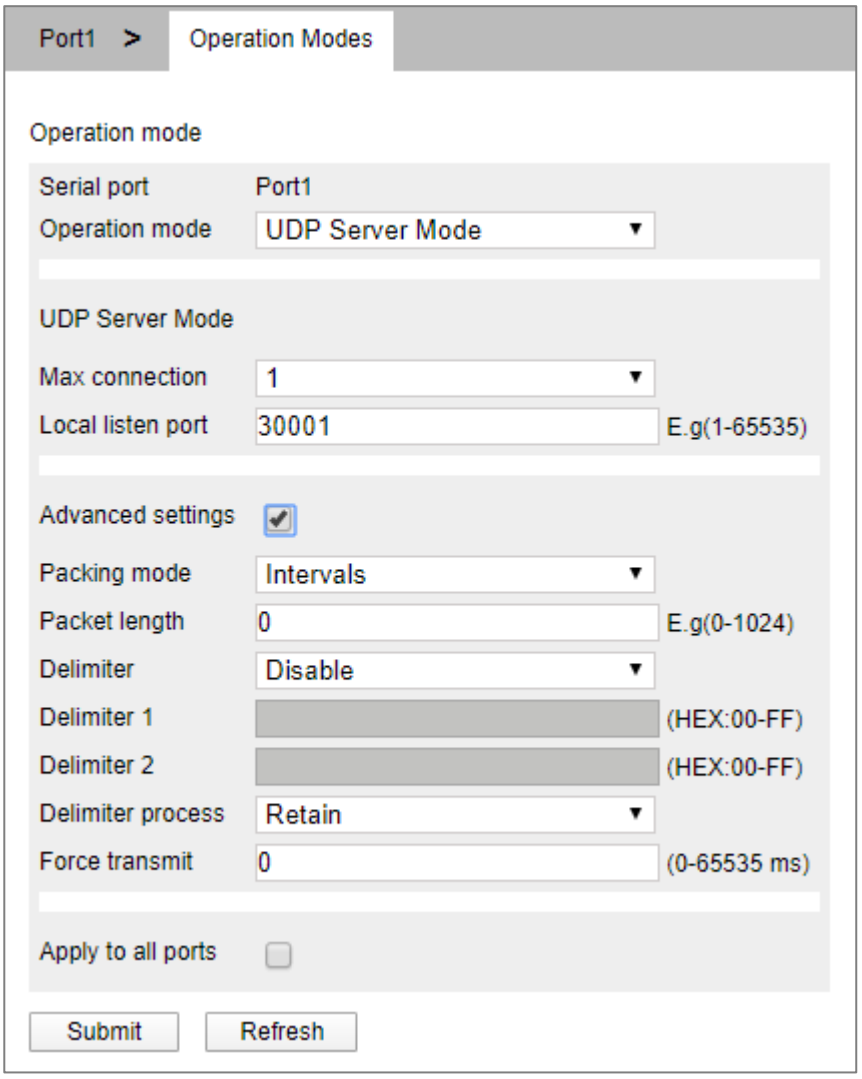
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

In UDP Server mode, the device, as a server, is assigned a UDP port number, passively waits for the host session, and transmits serial data with the host through UDP protocol. Devices in UDP mode can transmit data from serial devices to one or more hosts, and serial devices can also receive data from one or more hosts. Compared with TCP mode, UDP protocol is faster and more efficient.

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Interface Description

TCP Server Mode interface is as follows:



UDP Server Mode interface main element configuration instructions

Interface Element	Description
Operation mode	**Operation Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode

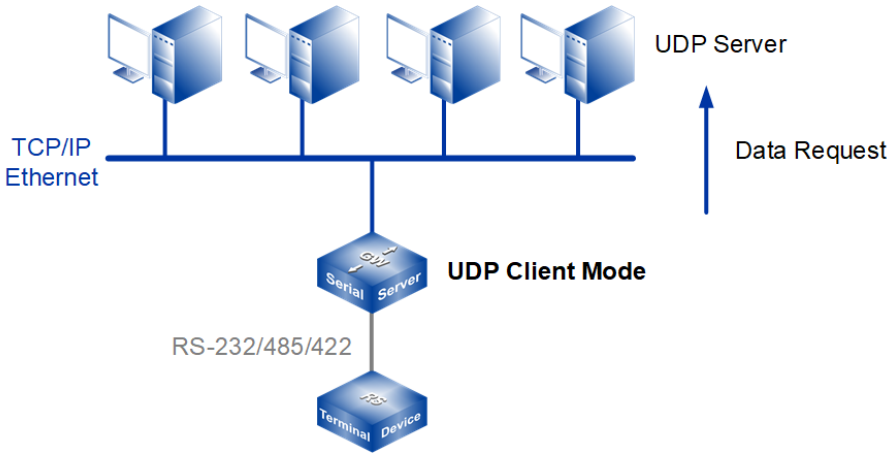
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Interface Element	Description
	• Disable Mode
UDP Server Mode	**TCP Server Mode Configuration Bar**
Max connection	The number of host that one serial port has session with. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 sessions.
Local listen port	The network receives the listening port of UDP data. The user must assign a unique listening port to each serial port so that the system can normally receive UDP data.
Advanced Settings	**Advanced Settings Configuration Bar**
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	The frame length of serial data to Ethernet data. In the set time range, the data forwards when it is greater than or equals to the set frame length. The value range is 0~1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • Disable: disable delimiter function; • 1: enable delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is

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Interface Element	Description
	00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte. • Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	If the transmission time is greater than 0, the system sends the serial data received within the specified time through a packet, in the range of 0 to 65535 ms. When the transfer time is 0, it means that the data transmission interval is not restricted.
Apply to All Ports	Check the “Apply to all port” check box to apply the current settings to all serial ports.

5.5 UDP Client Mode



Note:

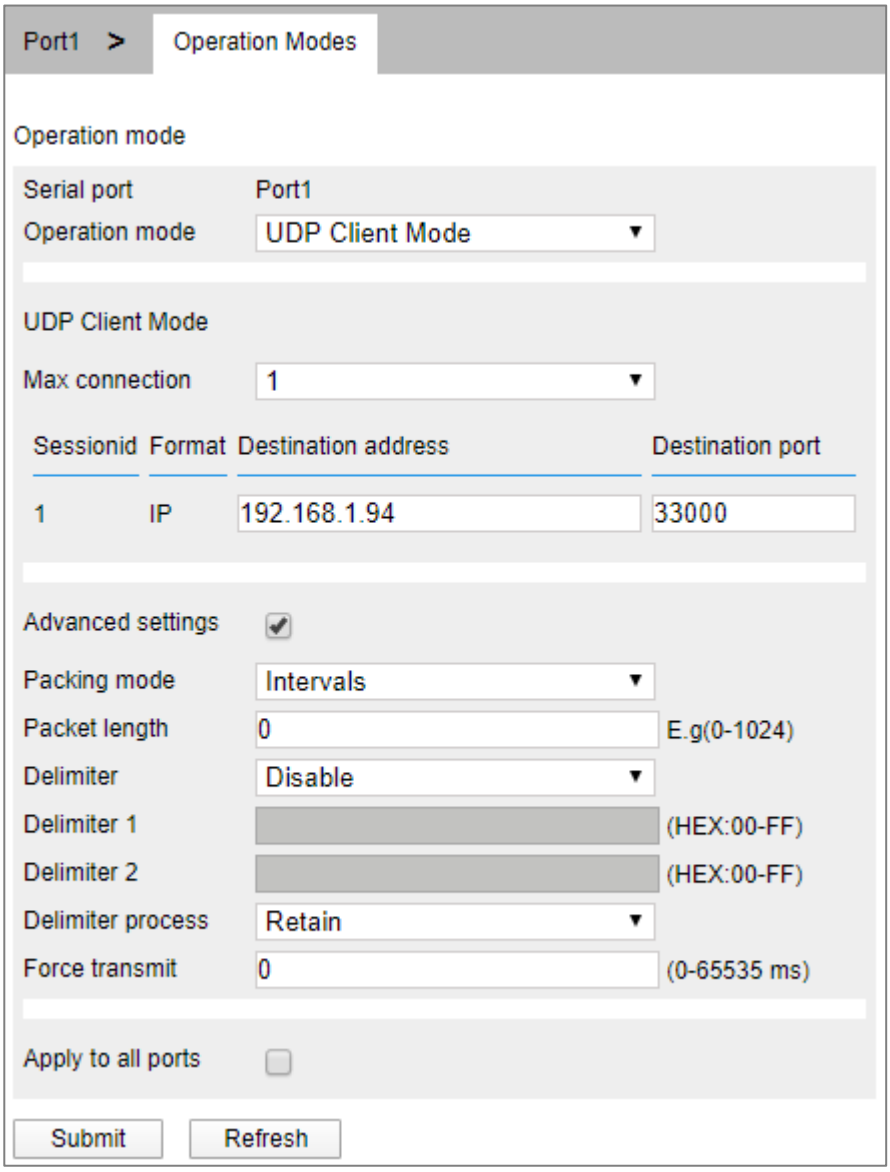
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

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Under CAN Client Mode, the device can be a client, and it can actively transmit serial data with the host user appointed under the UDP protocol. Devices in UDP mode can transmit data from serial devices to one or more hosts, and serial devices can also receive data from one or more hosts. Compared with TCP mode, UDP protocol is faster and more efficient.

Interface Description

UDP Client Mode interface is as follows:



UDP Client Mode interface main element configuration instructions:

Interface Element	Description
Operation mode	**Operation Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.

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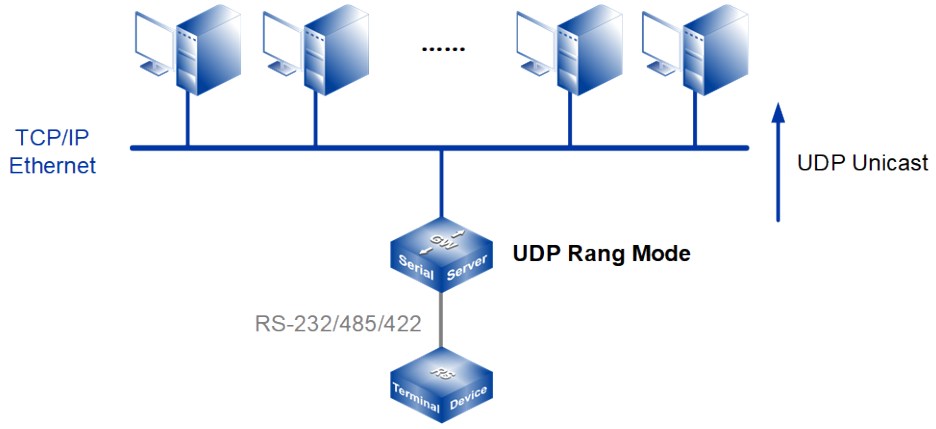
Interface Element	Description
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode • Disable Mode
UDP Client Mode	**UDP Client Mode Configuration Bar**
Max connection	The number of host that one serial port has session with. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 sessions.
Session id	The number of UDP sessions corresponds to the maximum number of connections.
Format	Destination address format.
Destination address	Enter the IP address of the server that the device needs to have session with.
Destination Port	Enter the UDP port number of the server that the device needs to have session with.
Advanced Settings	**Advanced Settings Configuration Bar**
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	The frame length of serial data to Ethernet data. In the set time range, the data forwards when it is greater than or equals to the set frame length. The value range is 0~1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as

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Interface Element	Description
	follows: • Disable: disable delimiter function; • 1: enable delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is 00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte. • Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	If the transmission time is greater than 0, the system sends the serial data received within the specified time through a packet, in the range of 0 to 65535 ms. When the transfer time is 0, it means that the data transmission interval is not restricted.
Apply to all port	Check the “Apply to all port” check box to apply the current settings to all serial ports.

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5.6 UDP Rang Mode



Note:

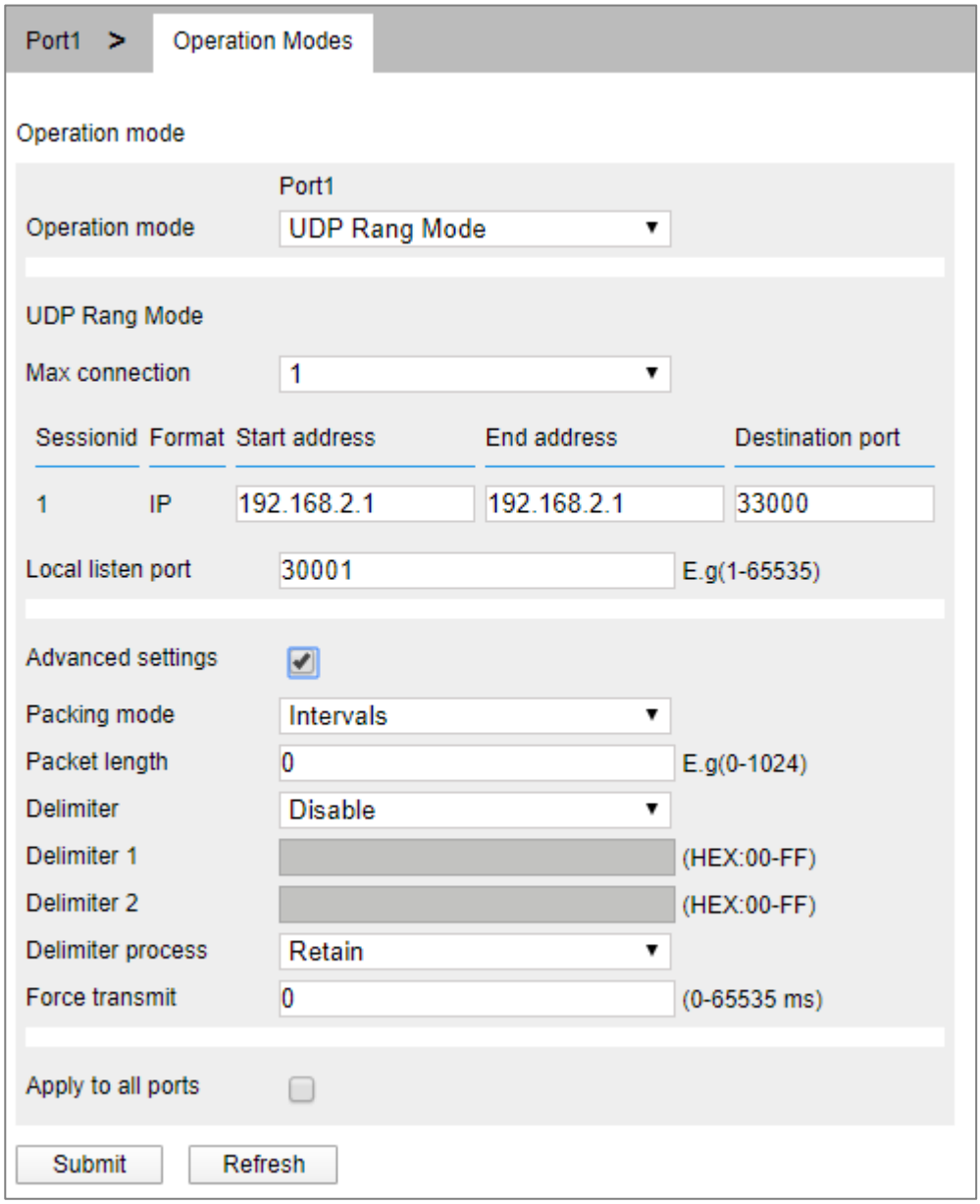
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

When routers, switches and other devices do not support multicast, they can work in UDP segment mode to realize multicast function. In this mode, the device transmits serial data with multiple hosts in the same network segment designated by the user through UDP protocol, which can realize point-to-many data communication. UDP port mode serial device can also receive data from one or more hosts.

Interface Description

UDP Rang Mode interface as follows:

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UDP Rang Mode interface main element configuration instructions:

Interface Element	Description
Operation mode	**Operation Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode

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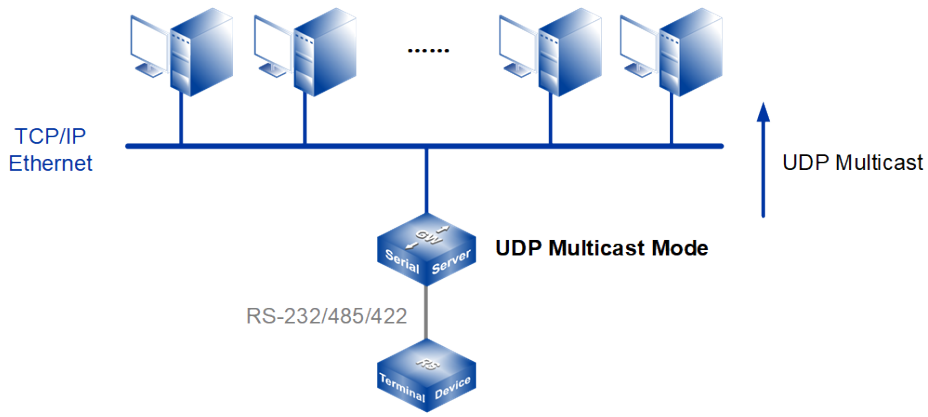
Interface Element	Description
	• Disable Mode
UDP Rang Mode	**UDP Rang Mode Configuration Bar**
Max connection	The number of host that one serial port has session with. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 sessions.
Session id	The number of UDP sessions corresponds to the maximum number of connections.
Format	Destination address format.
Start Address	Enter the start IP address of the UDP rang destination address.
End address	Enter the end IP address of the UDP rang destination address.
Destination Port	Enter the port number of the opposite host that the device needs to have session with.
Local listen port	The network receives the listening port of UDP data. The user must assign a unique listening port to each serial port so that the system can normally receive UDP data.
Advanced Settings	**Advanced Settings Configuration Bar**
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	The frame length of serial data to Ethernet data. In the set time range, the data forwards when it is greater than or equals to the set frame length. The value range is 0~1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • Disable: disable delimiter function;

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Interface Element	Description
	• 1: enable delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is 00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte. • Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	If the transmission time is greater than 0, the system sends the serial data received within the specified time through a packet, in the range of 0 to 65535 ms. When the transfer time is 0, it means that the data transmission interval is not restricted.
Apply to All Ports	Check the “Apply to all port” check box to apply the current settings to all serial ports.

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5.7 UDP Multicast Mode



Note:

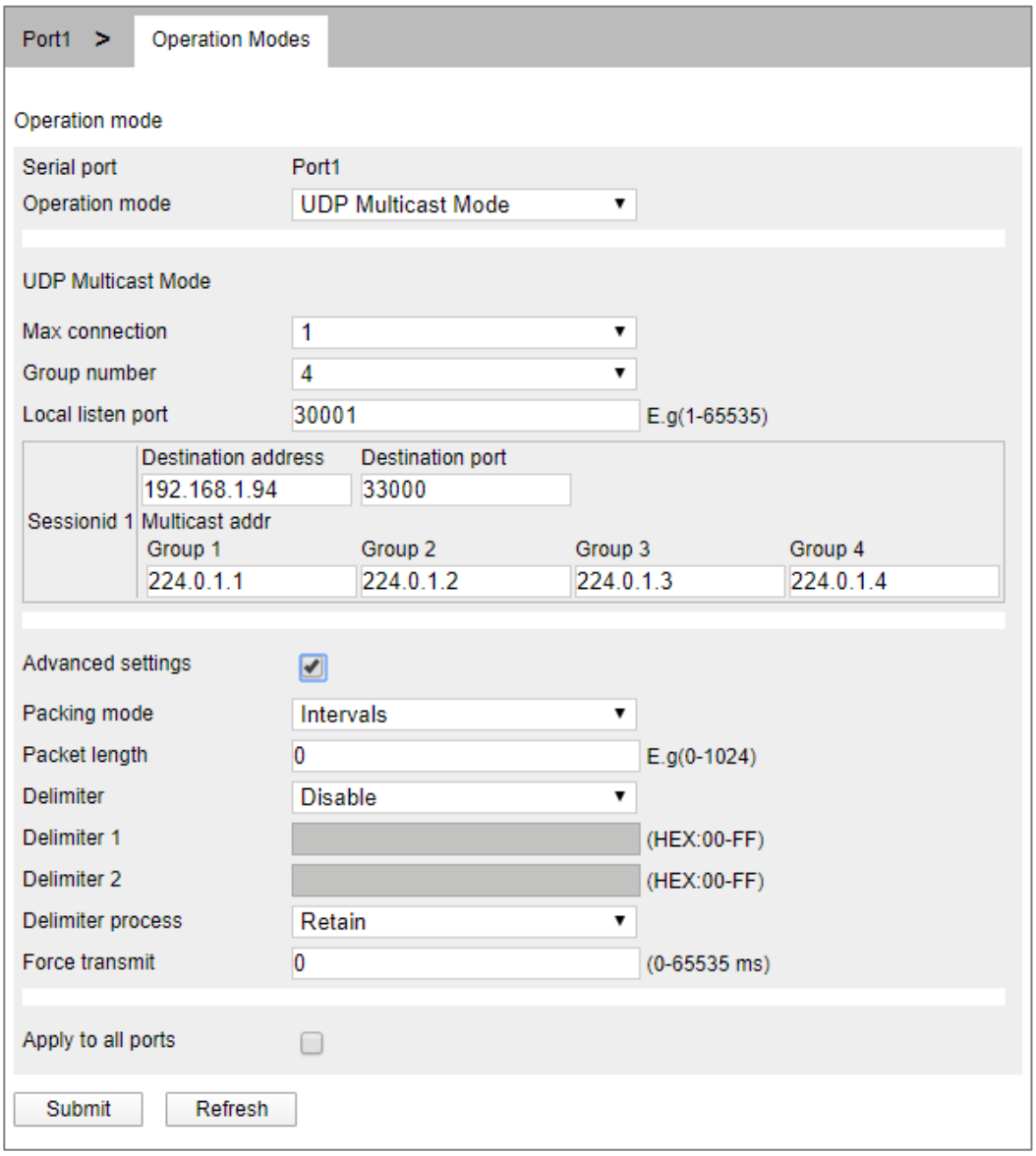
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

Under UDP multicast mode, devices can unicast or multicast the data of serial devices to one or more hosts designated by users through UDP protocol, and can also receive unicast and multicast data from one or more devices, thus realizing many-to-many communication.

Interface Description

UDP Multicast Mode interface as follows:

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UDP Multicast Mode interface main element configuration instructions:

Interface Element	Description
Operation mode	**Operation Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode

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Interface Element	Description
	• UDP Multicast Mode • Disable Mode
UDP Multicast Mode	**UDP Multicast Mode Configuration Bar**
Max connection	The number of host that one serial port has session with. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 sessions.
Multicast Number	Select the number of multicast groups and support up to four multicast groups.
Local listen port	The network receives the listening port of UDP data. The user must assign a unique listening port to each serial port so that the system can normally receive UDP data.
Destination address	Enter the multicast IP address of the opposite host that the device needs to have session with.
Destination Port	Enter the port number of the opposite host that the device needs to have session with.
Multicast address	The multicast address of the serial port, which is used for identifying an IP multicast group, multicast address range is: 224.0.0.0 ~ 239.255.255.255. The device can send or receive group data to or from multiple hosts.
Advanced Settings	**Advanced Settings Configuration Bar**
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	The frame length of serial data to Ethernet data. In the set time range, the data forwards when it is greater than or equals to the set frame length. The value range is 0~1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are

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Interface Element	Description
	as follows: • Disable: disable delimiter function; • 1: enable delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is 00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte. • Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	If the transmission time is greater than 0, the system sends the serial data received within the specified time through a packet, in the range of 0 to 65535 ms. When the transfer time is 0, it means that the data transmission interval is not restricted.
Apply to All Ports	Check the “Apply to all port” check box to apply the current settings to all serial ports.

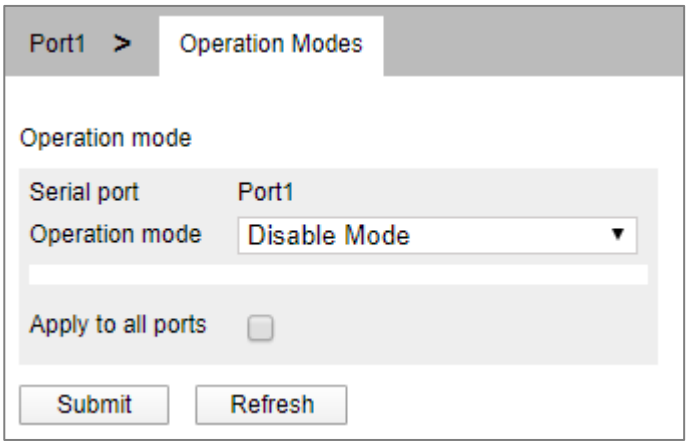
5.8 Disable Mode

In Disable Mode, the serial port will be closed and cannot be used normally.

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Interface Description

The interface of Disable Mode is as follows:



Main element configuration instructions in Disable Mode interface:

Interface Element	Description
Operation mode	**Operation Mode Configuration Bar**
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working modes of serial port of the device are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode • Disable Mode
Apply to All Ports	Check the “Apply to all port” check box to apply the current settings to all serial ports.

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6 COM State

About This Chapter

Content	Link
This Chapter	6.1 Serial Port Communication Statistics 6.2 Serial Port Status 6.3 Network Connection state 6.4 Serial Port Error Count

6.1 Serial Port Communication Statistics

Function Description

On the "Serial Port Statistics" page, you can view the statistics of the number of bytes received and sent during the conversion between each serial port and the network.

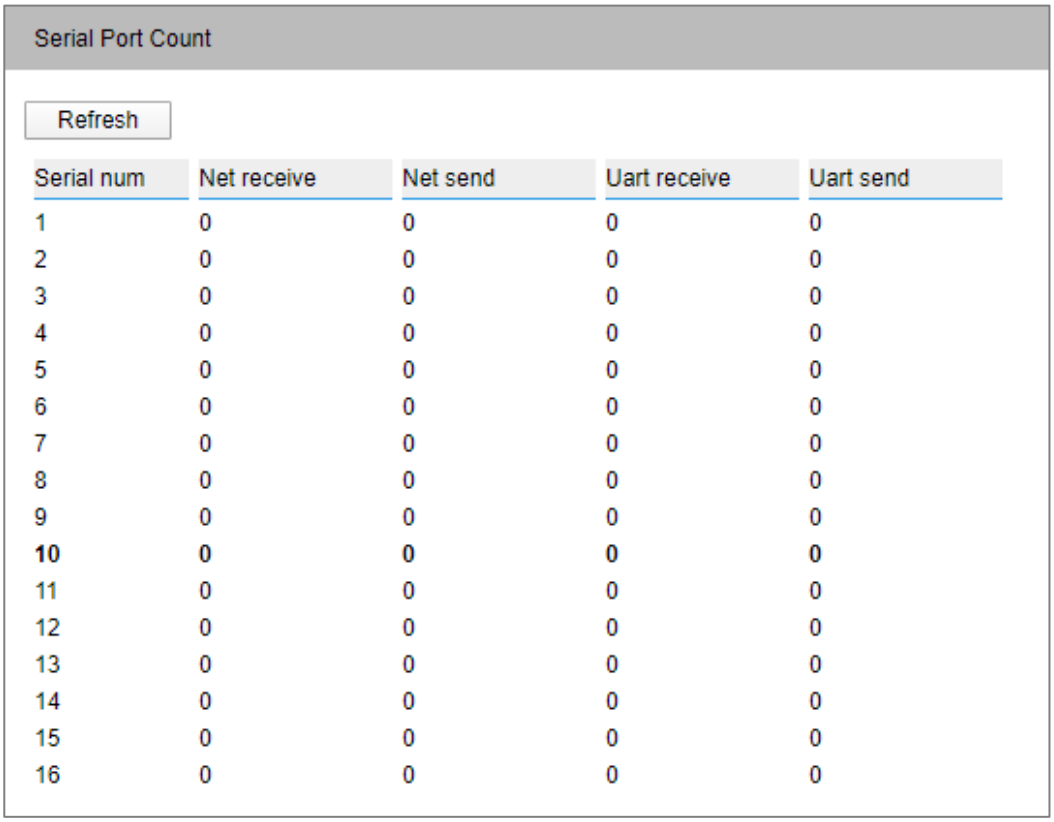
Operation Path

Open in order: "COM Status> COM Communication Statistics" .

Interface Description

The interface of COM Communication Statistics is as follows:

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The main element configuration description of Serial Port Count interface:

Interface Element	Description
Serial num	Display corresponding device serial port.
Net receive	Number of bytes received by the device network interface.
Net send	Number of bytes sent by the device network interface.
Uart receive	Number of bytes received by the serial port of the device.
Uart send	Number of bytes sent by serial port of device.

6.2 Serial Port Status

Function Description

On the "Serial Port Status" page, you can view the pin status of each serial port of the device.

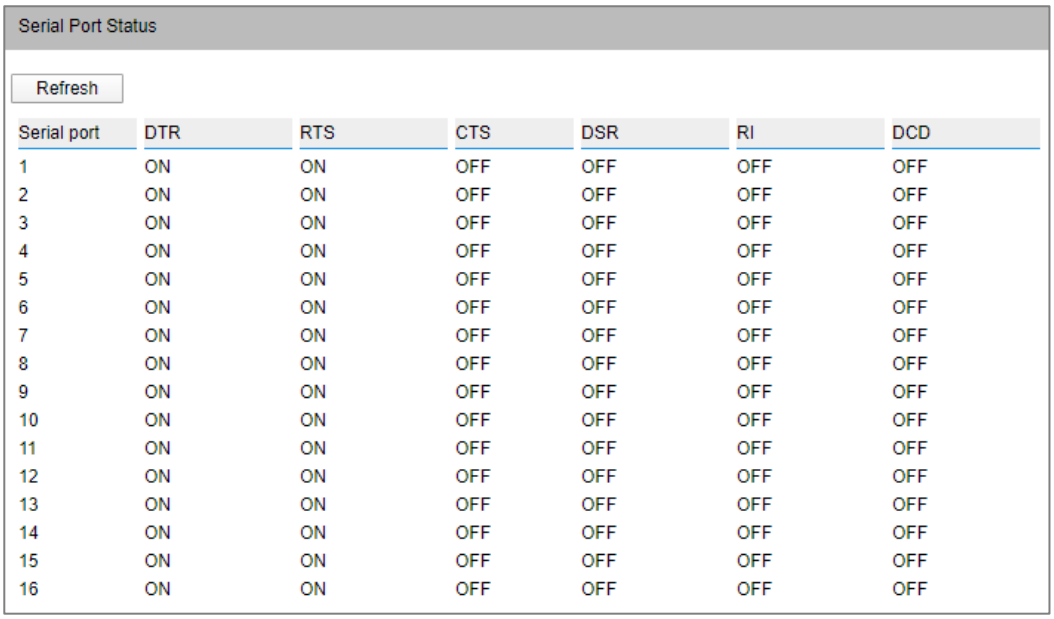
Operation Path

Open in order: "COM Status > Serial Port Status".

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Interface Description

Serial Port Status interface is as follows:



Main element configuration instructions in Serial Port Status interface:

Interface Element	Description
Serial port	Display corresponding device serial port.
DTR	the status of DTR(Data Terminal Ready) pin of serial port can be displayed as follows: • ON Status • OFF
RTS	At present, the status of RTS(Request To Send) pin of serial port can be displayed as follows: • ON Status • OFF
CTS	At present, the status of CTS(Clear To Send) pin of serial port can be displayed as follows: • ON Status • OFF
DSR	The current status of DSR(Data Set Ready) pin of serial port can be displayed as follows: • ON Status • OFF
RI	The current status of RI(Ring Indicator) pin of serial port can be displayed as follows:

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Interface Element	Description
	• ON Status • OFF
DCD	The current status of DCD(Data Carrier Detect) pin of serial port can be displayed as follows: • ON Status • OFF

6.3 Network Connection state

Function Description

On the "Network Connection Status" page, you can view the working mode and network session connection status of each serial port of the device.

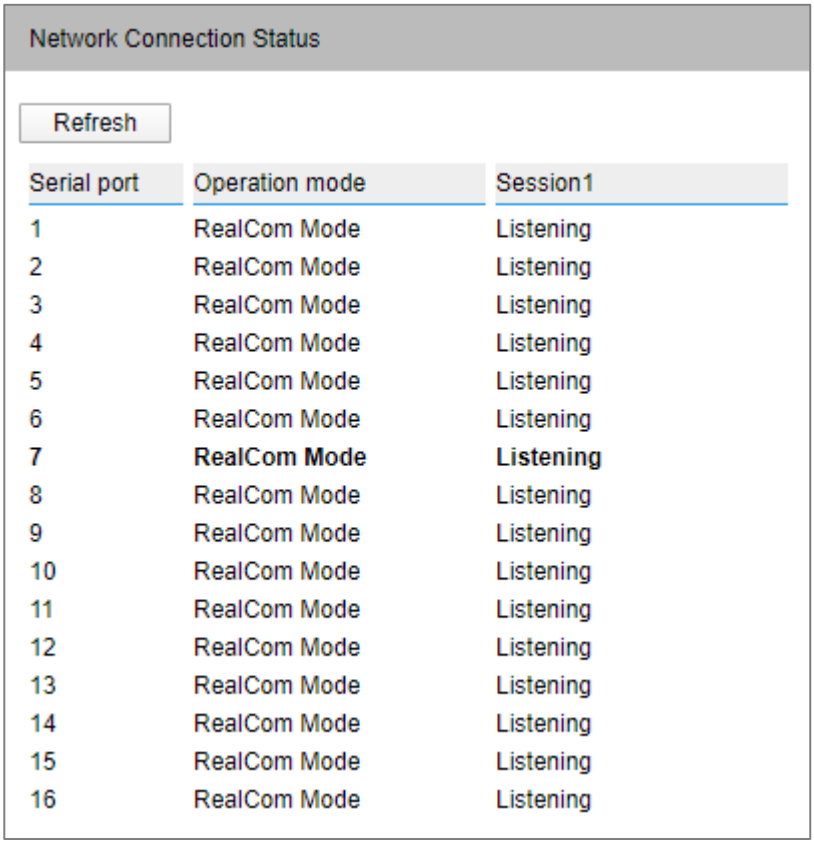
Operation Path

Open in order: "COM Status > Network Connection Status".

Interface Description

The network connection status interface is as follows:

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The main elements configuration descriptions of the network connection status interface:

Interface Element	Description
Serial port	Display corresponding device serial port.
Operation mode	The operation mode of current serial port are as follows: • RealCom Mode • TCP Server Mode • TCP Client Mode • UDP Server Mode • UDP Client Mode • UDP Rang Mode • UDP Multicast Mode • Disable Mode
Session1	The current connection state of network session 1 of the serial port can be displayed as follows: • Connected • Connecting • Listening • (None): the session is not enabled or UDP is not connected

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Interface Element	Description
Session2	The current connection state of network session 2 of the serial port can be displayed as follows: • Connected • Connecting • Listening • (None): the session is not enabled or UDP is not connected
Session3	The current connection state of network session 3 of the serial port can be displayed as follows: • Connected • Connecting • Listening • (None): the session is not enabled or UDP is not connected
Session4	The current connection state of network session 4 of the serial port can be displayed as follows: • Connected • Connecting • Listening • (None): the session is not enabled or UDP is not connected

6.4 Serial Port Error Count

Function Description

On the "Serial Port Error Count" page, user can check the error data count of each serial port of the device.

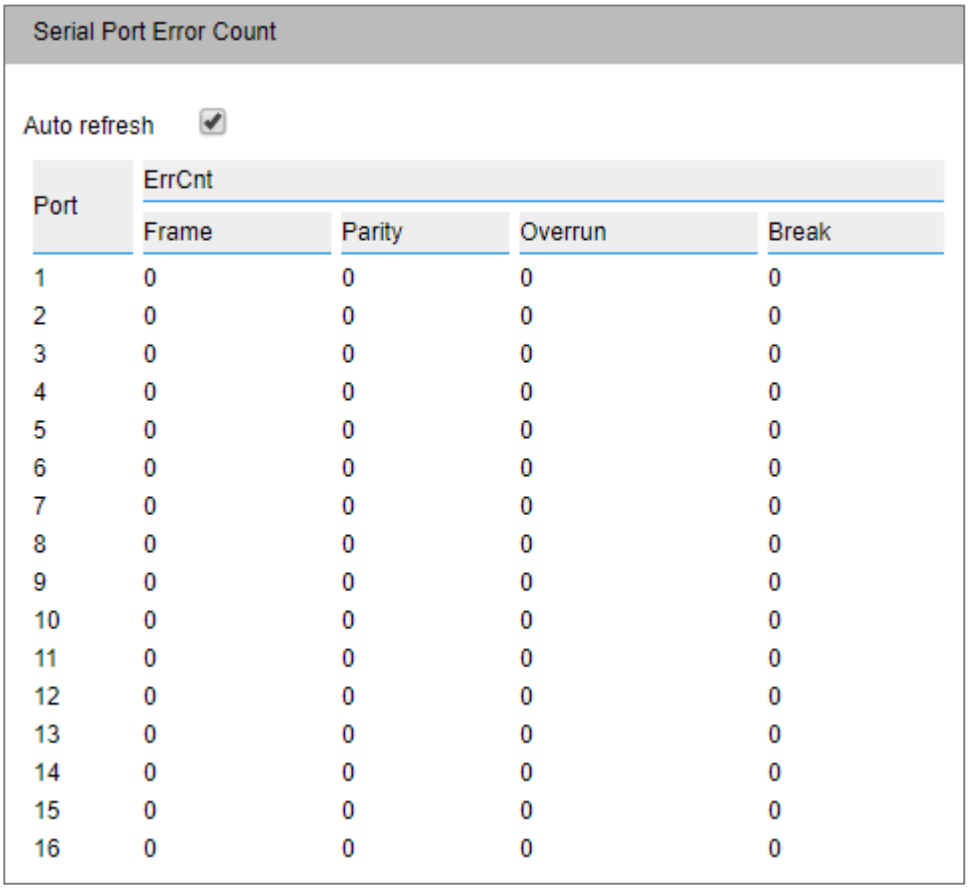
Operation Path

Open in order: "COM Status > Serial Port Error Count".

Interface Description

Serial Port Error Count interface as follows:

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The main element configuration description of serial port error count:

Interface Element	Description
Port	Display corresponding device serial port.
Frame	The number of data frames with wrong stop bits, the received data characters have no valid stop bits.
Parity	The number of data frames with wrong check mode, and the received data characters do not match the configured check bits.
Overrun	The number of overrun data frames, and the received data characters exceeded the processing speed of the device and caused the buffer overflow.
Break	The number of interrupted data frames, and the time that the received data characters remain low level exceeds the transmission time of one complete data frame (the total time of transmission start bit, data bit, check bit and stop bit).

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7 SNMP

About This Chapter

Content	Link
This Chapter	7.1 SNMP Agent Settings

SNMP (Simple Network Management Protocol)is a network management standard protocol widely used in TCP/IP networks. SNMP provides a way to manage devices by running network management software on a central computer (or network management workstation).

SNMP System consists of NMS (Network Management System), Agent Process, Management Object and MIB (Management Information Base) four parts. Agent: Agent is an agent process in the managed device, which is used to maintain the information data of the managed device and respond to the request from the NMS, and report the administration data to the NMS that sending the request.

7.1 SNMP Agent Settings

Function Description

In the "SNMP Agent Settings" page, the SNMP function can be enabled and disabled, and other related parameters such as SNMP community name, version and user information can be configured.

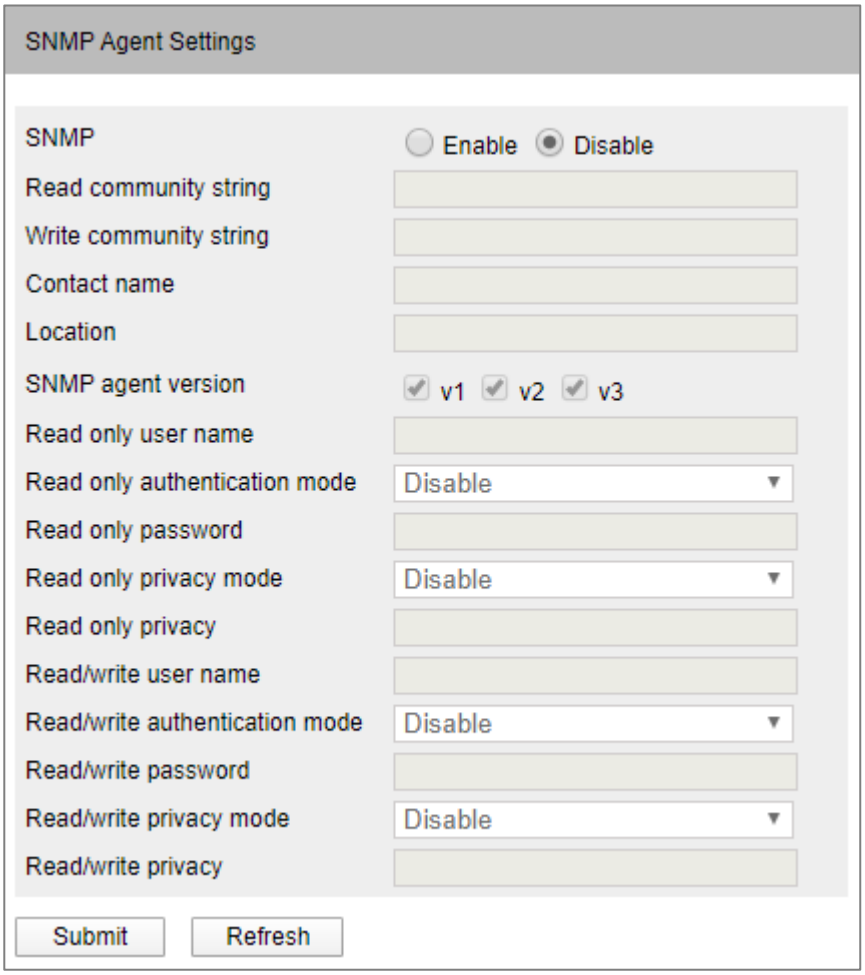
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Operation Path

Open in order: "SNMP > SNMP Agent Settings".

Interface Description

SNMP agent settings interface as follows:



Main elements configuration description of SNMP agent settings interface:

Interface Element	Description
SNMP	The radio box of enable/disable SNMP function, the options are as follows: • Enable • Disable
Read community string	The text box of readable community name, supporting 0-32bit character string input. The readable community name is used for authentication of Get operation between Agent and NMS.

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Interface Element	Description
Write community string	The text box of writable community name, supporting 0-32bit character string input. The writable community name is used to complete Set operation authentication between Agent and NMS.
Contact name	The text box of SNMP contact information, supporting 0-32bit character string input.
Location	The text box of position information, supporting 0-32bit character string input.
SNMP agent version	The check box of the SNMP agent version, which supports optional v1, v2 and v3 versions. Compared with v1/v2, version v3 mainly adds authentication and encryption.
Read only user name	The text box of read-only user name, supporting 0-32bit character string input.
Read only authentication mode	The drop-down list of read-only user authentication mode, the options are as follows: • Disable • MD5: message digest algorithm 5; • SHA: Secure Hash Standard.
Read only password	The text box of read-only user authentication key, supporting 0-32bit character string input.
Read only privacy mode	The drop-down list of read-only user data encryption mode, the options are as follows: • Disable • DES_CBC: The system encrypts the data by using the cipher group link code of the data encryption standard.
Read only privacy	Read-only user data encryption key text box, supporting 0-32bit character string input.
Read/Write user name	The text box of read/write user name, supporting 0-32bit character string input.
Read/Write authentication mode	The drop-down list of read/write user authentication mode, the options are as follows: • Disable • MD5 (message digest algorithm 5); • SHA: Secure Hash Standard.
Read/Write password	The text box of read/write user authentication key, supporting 0-32bit character string input.
Read/Write privacy	The drop-down list of read/write user data encryption mode,

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Interface Element	Description
mode	the options are as follows: • Disable • DES_CBC: The system encrypts the data by using the cipher group link code of the data encryption standard.
Read/Write privacy	The text box of read/write user data encryption key, supporting 0-32bit character string input.

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8 Alarm Settings

About this chapter

Content	Link
This Chapter	8.1 Mail Alarm Configuration 8.2 SNMP Trap Alarm Configuration 8.3 System Alert Settings

8.1 Mail Alarm Configuration

Function Description

On the "mail Alarm configuration" page, user can configure the sender, recipient, mailbox server and other parameters. The system can inform the hot start, cold start, login failure, static IP modification and password modification of the device by email.

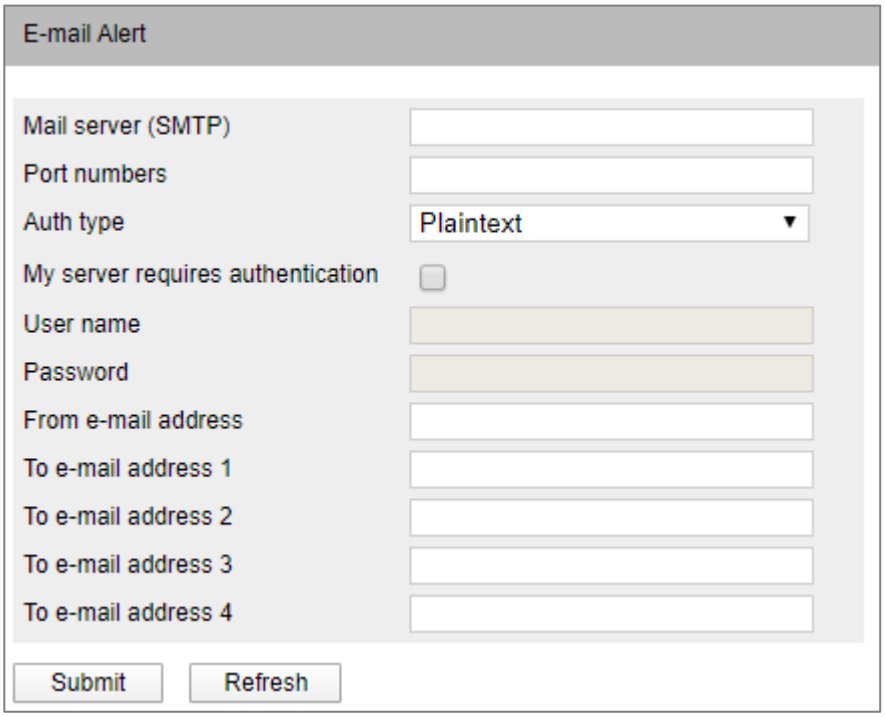
Operation Path

Open in order: "Alarm Configuration > Mail Alarm Settings".

Interface Description

Mail Alarm Settings configuration interface is as follows:

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Main element configuration instructions in E-mail alert interface:

Interface Element	Description
Mail server (SMTP)	Mailbox server address using SMTP simple mail transfer protocol provided by mailbox service provider, and mailbox server address used by sender when sending mail.
Port numbers	Port number of mailbox server.
Auth type	The drop-down list of authentication method, the options are as follows: • Plaintext: no encryption; • SSL: encryption protocol of Secure Sockets Layer; • TLS: encryption protocol of Transport Layer Security.
My server requires authentication	The check box of mailbox server authentication. Check the configuration according to the authentication requirements of mailbox server.
User name	The user name of the sender's mailbox server.
Password	Login password or authorization code of sender's mailbox server.
From e-mail address	The email address from which the sender sends a warning message.
To e-mail address 1	The input text box of Address 1, which is used to fill in the email address of receiving alarm mails.

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Interface Element	Description
To e-mail address 2	The input text box of Address 2, which is used to fill in the email address of receiving alarm mails.
To e-mail address 3	The input text box of Address 3, which is used to fill in the email address of receiving alarm mails.
To e-mail address 4	The input text box of Address 4, which is used to fill in the email address of receiving alarm mails.

8.2 SNMP Trap Alarm Configuration

Function Description

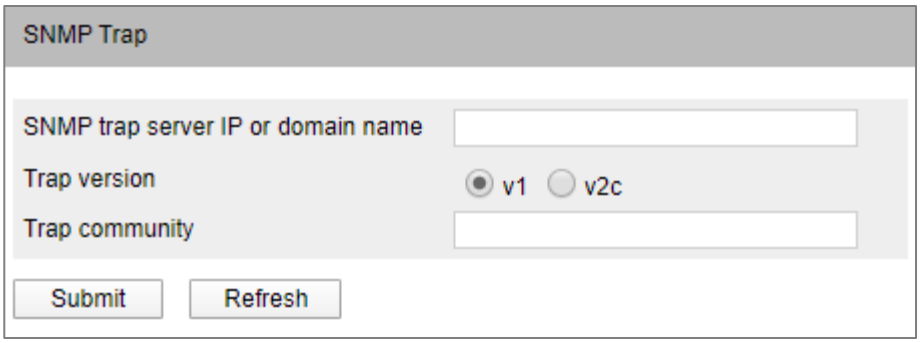
In the SNMP Trap Alarm page, you can configure the IP address or domain name of the server that receives SNMP Trap information.

Operation Path

Open in order: "Advanced Config > SNMP Trap Alarm Configuration".

Interface Description

The SNMP Trap Alarm Configuration interface as follows:



The main elements configuration description of SNMP Trap alarm interface:

Interface Element	Description
SNMP trap server IP or domain name	The text box of IP address or domain name of SNMP Trap server. The server is used to receive SNMP Trap information sent by devices.
Trap version	The radio box of SNMP Trap version, which supports optional v1 and v2c versions.

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Interface Element	Description
Trap community	The text box of SNMP Trap community name, which specifies SNMP community name.

8.3 System Alert Settings

Function Description

In the "System Alert Settings" page, the alarm type of system events can be configured.

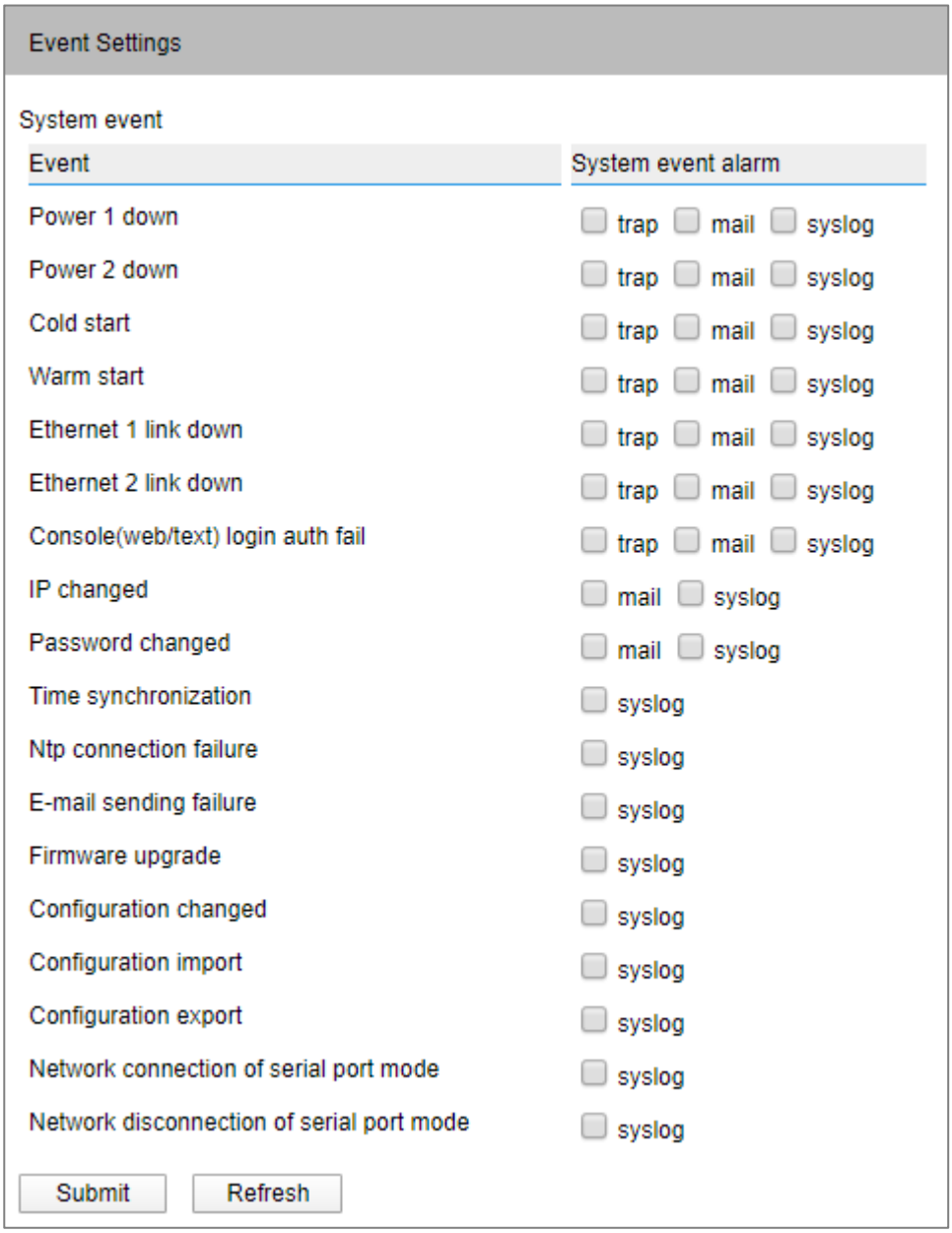
Operation Path

Open in order: "Alarm Configuration >System Alarm Settings".

Interface Description

System Alert Settings interface is as follows:

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Main elements configuration description of system alarm interface:

Interface Element	Description
System event	**System event configuration bar**
Event	System event alert types, shown as follows: • Power supply 1: When dual power supplies are input, device will send alarm if power1 is off. • Power supply 2: When dual power supplies are input, device will send alarm if power2 is off. • Cold start: device will send alarm after it is powered off and restarted. • Warm start: In the case of uninterrupted power supply, the device will send alarm after restarting the device via

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Interface Element	Description
	the Web or CLI configuration. • Network card1: device will send alarm when lan1 loses connection. • Network card2: device will send alarm when lan2 loses connection. • Login Failed: device will send alarm when web login password authentication fails. • Modify Static IP: device will send alarm when “Network Configuration” is modified. • Modify Password: device will send alarm when “User Configuration” is modified. • Timing: device will send alarm when “Time Setting” is modified. • NTP Connection Failed: device will send alarm when NTP sever connection fails. • E-mail Sending Failed: device will send alarm when mail sending fails due to network or other problems. • Firmware Upgrade: device will send alarm when the firmware is upgraded. • Modify Configuration: device will send alarm when part of webpage configuration is modified. • Import Configuration: device will send alarm when configuration file is imported. • Export Configuration: device will send alarm when configuration file is exported. • Serial port mode network connection: when the TCP/IP connection in serial port mode is established, the device will give an alarm. • Serial port mode network disconnection: when the TCP/IP connection in serial port mode is disconnected, the device will give an alarm.
System event alarm	System alert mode check box, the options are as follows: • Trap: after checked, device will send SNMP Trap message for alarm according to “SNMP Trap Alarm Configuration” information when the corresponding system event sends an alarm. • Mail: after checked, device will send mail for alarm according to “Mail Alarm Configuration” information when the corresponding system event sends an alarm. • Sys log: after checked, device will record alarm message in “System Log” information when the corresponding

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Interface Element	Description
	system event sends an alarm; device will send log message for alarm to remote syslog if it is enabled.

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9 System Status

About this chapter

Content	Link
This Chapter	9.1 Routing Table 9.2 System Network Status 9.3 System Log

9.1 Routing Table

Function Description

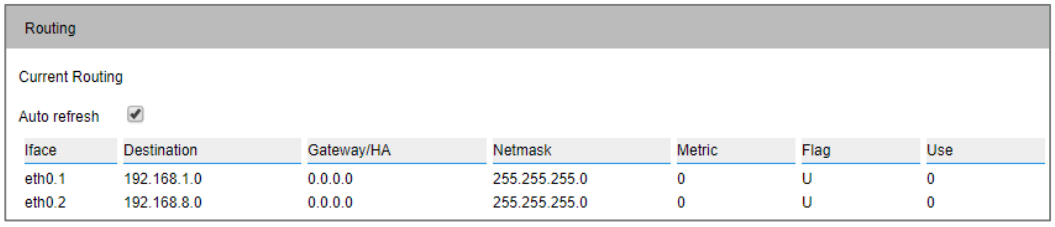
In “Routing” page, you can see the current route information.

Operation Path

Open in order: “System Status > Routing".

Interface Description

Route Table Interface Screenshot:



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The main elements configuration description of routing interface:

Interface Element	Description
Iface	Display the interface name of physical network.
Destination	Display the IP address of destination host or the network address of destination routing.
Gateway/HA	Display gateway IP address or next hop router IP address of.
Netmask	Display destination network subnet mask.
Metric	Display the router hops from source terminal to destination terminal.
Flag	Display routing status, valid status is: • U：UP • D：DOWN • G: Route to gateway • H: Route to host computer • T: Routing settings • R: RIP is dynamic
Use	The quantity of data packet which is sent correctly via the router.

9.2 System Network Status

Function Description

On the page of "System Network Status", user can check TCP connection information of the device.

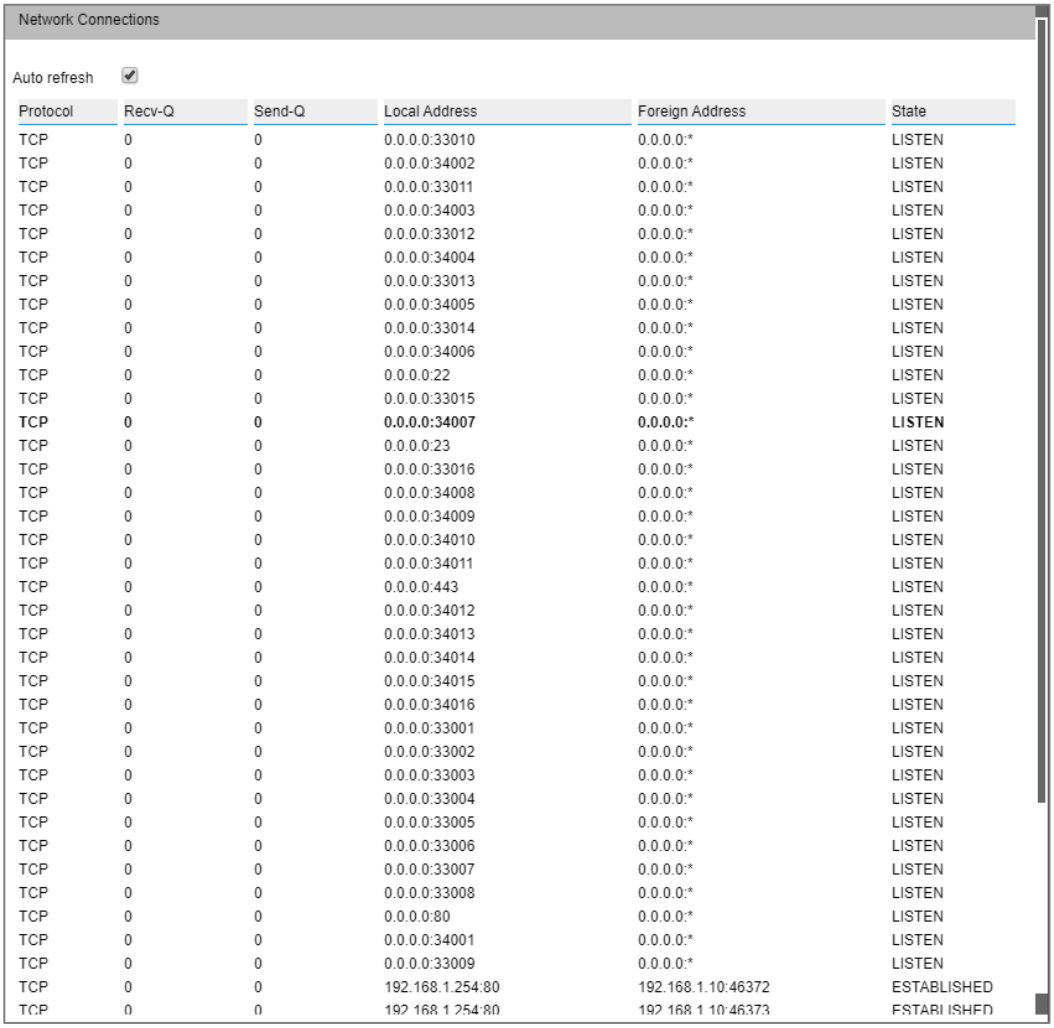
Operation Path

Open in order: “System Status > System Network Status”.

Interface Description

The system network status interface is as follows:

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The main element configuration description of system network status interface:

Interface Element	Description
Protocol	Network protocol type.
Recv-Q	Number of network receiving queues.
Send-Q	Number of network sending queues.
Local Address	Device IP address and network port number.
Foreign Address	IP address and network port number of remote host.
State	The status of the network socket is as follows: • LISTEN: listening state. • SYN_SENT: sending connection request. • SYN_RECV: the server should send an ACK to acknowledge the client's SYN and send a SYN of its own to the client. • ESTABLISHEN: represents an open connection, in which two parties can or have data interaction. • FIN_WAIT1: sending FIN actively to request to close

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Interface Element	Description
	connection state. • CLOSE_WAIT: when the passive close terminal receives FIN, it will send ACK to answer FIN request and enter CLOSE_WAIT state. • FIN_WAIT2: when the active close terminal receives ACK, it will enter FIN_WAIT2status. • LAST_ACK: After some time the passive close terminal receives end-of-file character, it will call CLOSE to close connection. Thus it's TCP also sends a FIN and waits the opposite ACK. It enters LAST-ACK status. • TIME_WAIT: when the active close terminal receives FIN, it will send ACK and enter CLOSE_WAIT state. • CLOSING: wait the remote terminal to confirm the connection interruption. • CLOSED: when the passive close terminal receives ACK package, it will enter CLOSED status. • UNKNOWN: unknown Socket status.

9.3 System Log

Function Description

On the "System log" page, you can view the log information of the device and upload the log information to the syslog server. During the operation of the device, the system will record all kinds of situations in operation, thus forming log information. The log information is mainly used to check the running status of device, analyze the status of network and locate the causes of problems, and provide basis for system diagnosis and maintenance. The generated log information can be saved on the device, and the log information can be output to the log server by using syslog protocol.

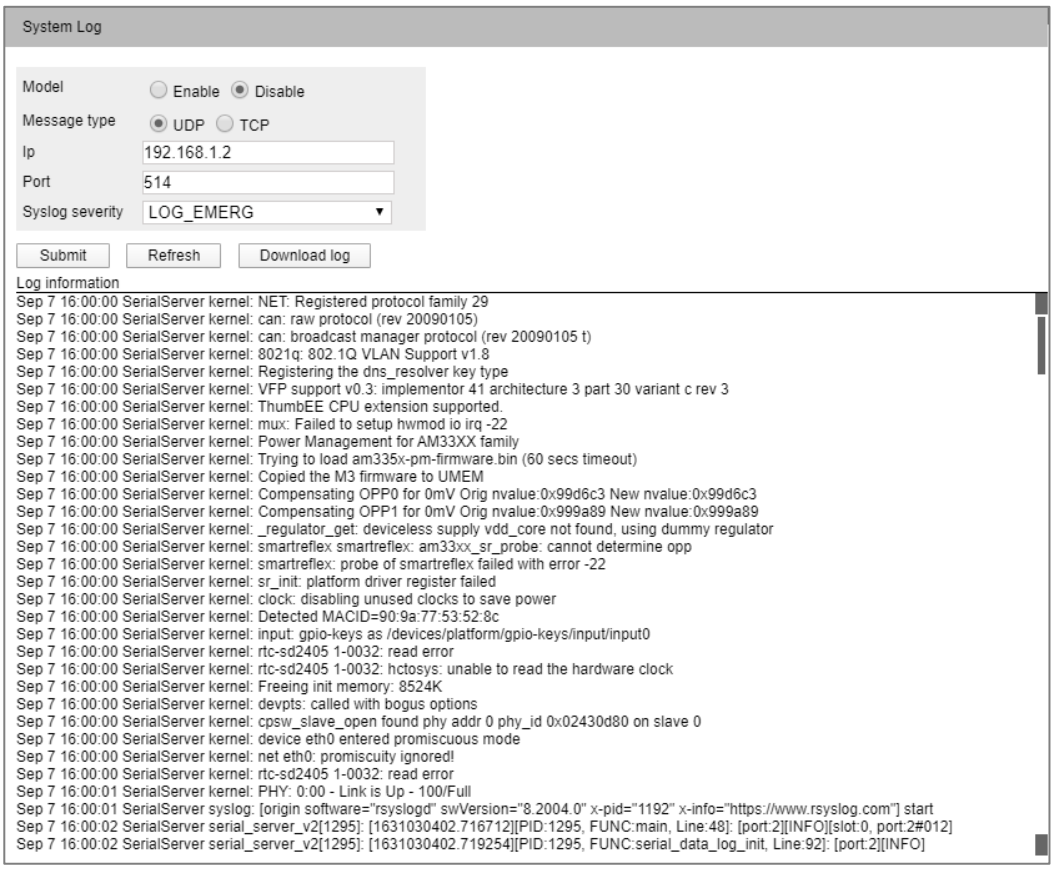
Operation Path

Open in order: "System Management > System Log".

Interface Description

The system log interface is as follows:

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The main elements configuration description of system log interface:

Interface Element	Description
Mode	System log server configuration type, which can be checked as follows: • Enable: when enabled, the system log will be saved to the remote system log server. • Disable: Disable the syslog server function.
Message Type	System log information transmission protocol, which can be selected as follows: • TCP: system log information is sent to the log server by TCP protocol. TCP (transmission control protocol), connection-oriented and reliable transmission-layer communication protocol; • UDP: the system log information is sent to the log server by UDP protocol. UDP (user datagram protocol), connectionless-oriented transmission-layer communication protocol.
IP	IP address of the syslog server.
Port	The port number of syslog server, and the default port of syslog protocol is 514.

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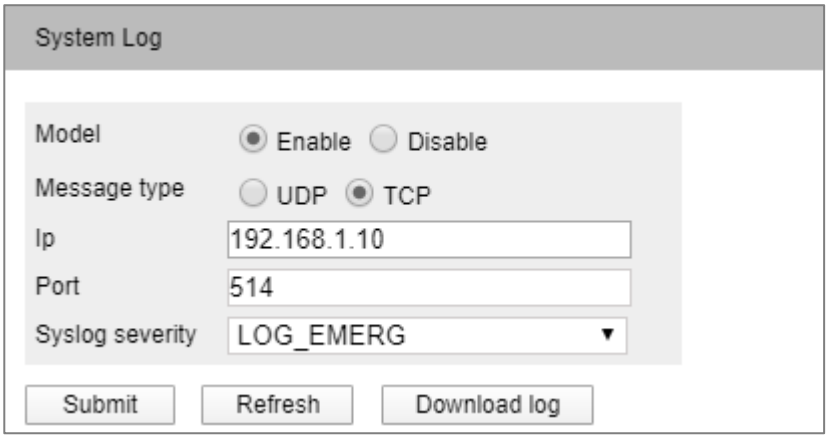
Interface Element	Description
Syslog severity	The level of system log can be selected as follows: • LOG_EMERG: extremely urgent error; • LOG_ALERT: an error that needs to be corrected immediately; • LOG_CRIT: a more serious error; • LOG_ERR: An error occurred; • LOG_WARNING: warning, there may be some error; • LOG_NOTICE: information to be noticed; • LOG_INFO: general prompt information; • LOG_DEBUG: debug information.
Download log	Click the "Download Log" button to export the current log file “messages” locally.

Configuration Instance

"Visual Sys log Server" is a free open source software for receiving and viewing syslog messages. At present, the host with "Visual Sys log Server" installed is used as the system log server, and the IP address of the host is 192.168.1.101. The device transmits log information to the host server through TCP protocol. The configuration steps are as follows:

Step 1 Log in to the device WEB interface.

Step 2 On the "System log" page, configure relevant parameters, as shown in the following figure:



1 Check “Enable” in the “Model” checkbox;

2 Check “TCP“ protocol in “Message Type” checkbox;

3 In the IP text box, enter the IP address "192.168.1.101" of the server.

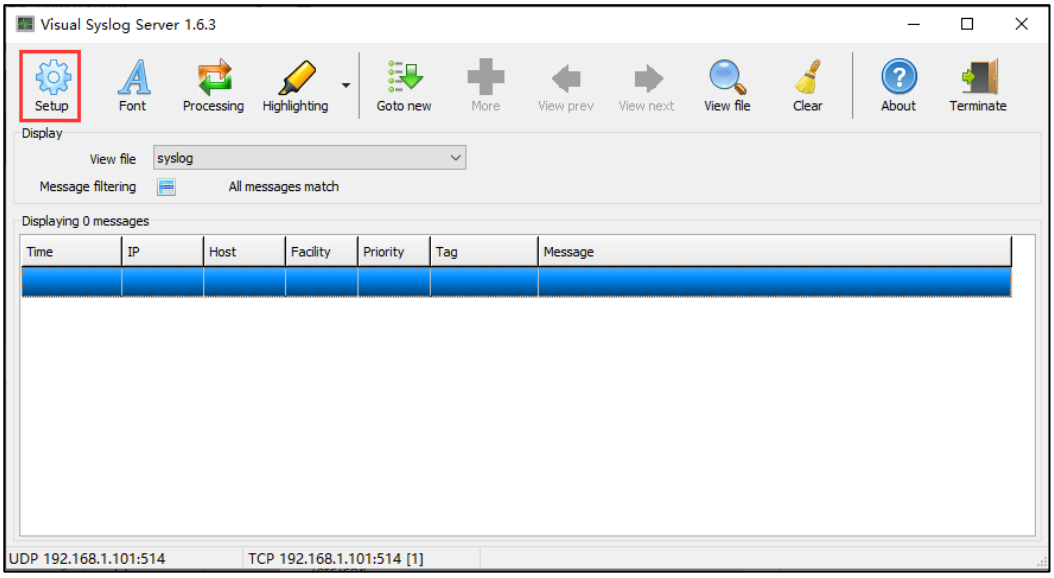
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4 In the "Port" text box, enter the port number of the server, and the default port of syslog protocol is 514;

5 In the “Log Level” drop-down list, select “LOG_INFO”;

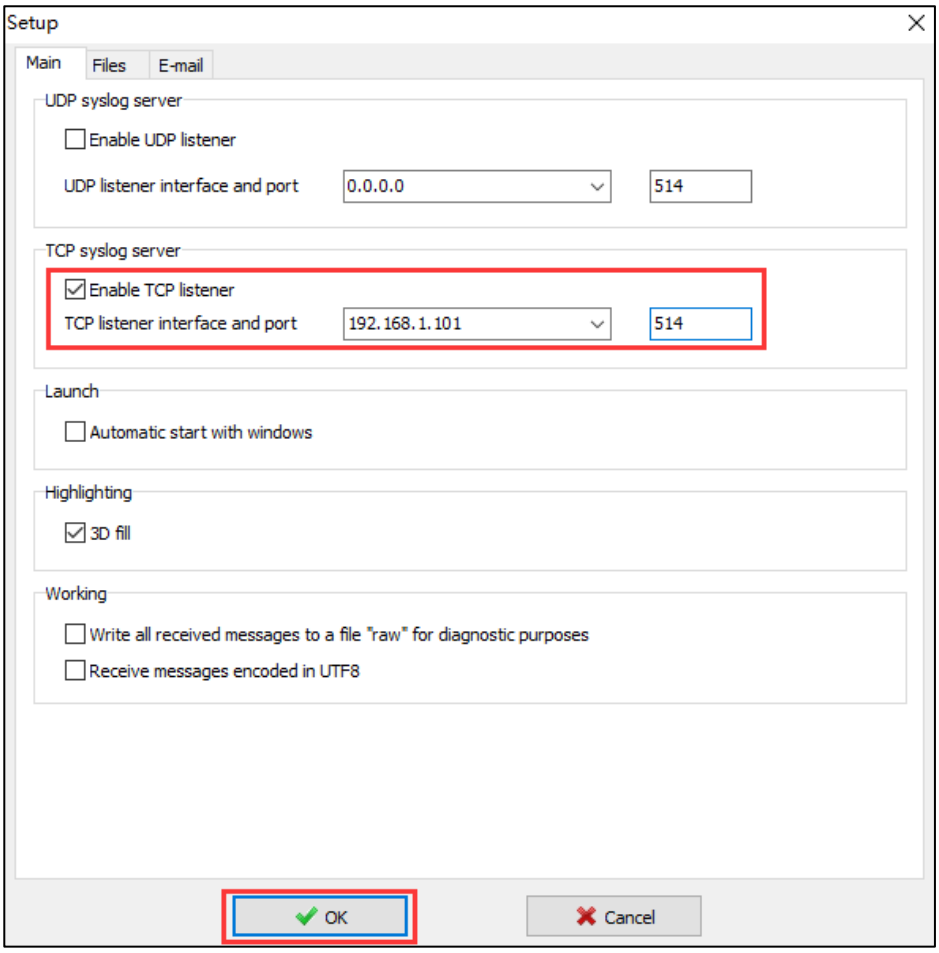
6 Click “Apply” button.

Step 3 Run "Visual Sys log Server" on the host to complete the configuration of relevant parameters, as shown below.



1 Click the "Setup" button, as shown in the above figure;

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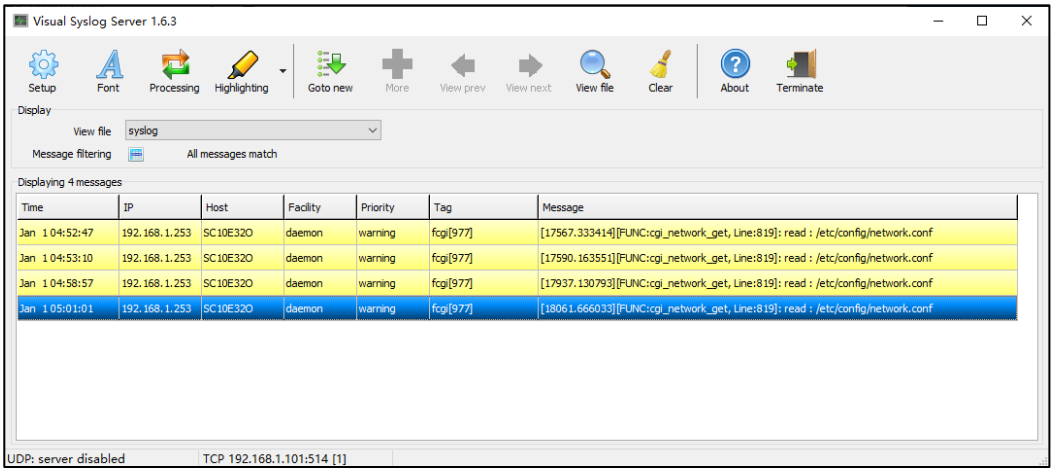


2 On the "Setup" page, in the Main configuration area, check "Enable TCP Listener", as shown in the above figure;

3 Select the IP address "192.168.1.101" and port number "514" of the server from the "TCP listener interface and port" drop-down list;

4 Click “OK” button.

Step 4 Check the log information in the "Visual Sys log Server" configuration interface, as shown in the following figure.



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Step 5 End.

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10 System Management

About this chapter

Content	Link
This Chapter	10.1 Device Information Configuration 10.2 Time Settings 10.3 Remote Management 10.4 User Configuration 10.5 IP Address Filtering 10.6 MAC Filtering 10.7 Static Routing Configuration 10.8 Free ARP 10.9 Diagnostic Test 10.10 System Maintenance

10.1 Device Information Configuration

Function Description

In the “Device Information Configuration” page, you can configure the device name, device description, and maintenance contact information.

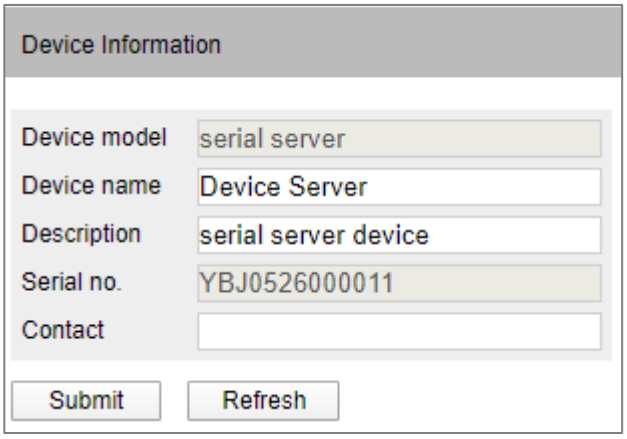
Copyright © 3onedata Co., Ltd.

Operation Path

Open in order: "System Management > Device Information Settings".

Interface Description

The screenshot of device information configuration interface:



The main elements configuration description of device information interface:

Interface Element	Description
Device model	Device model information, the input box is grayed and cannot be entered by default.
Device name	Enter the device name in the “Name” text box. To identify each device in the network, give the device a different name.
Description	Enter the device description in the “Description” text box.
Serial no.	Device serial information, the input box is grayed and cannot be entered by default.
Contact	Enter the contact information of the equipment maintenance personnel in the "Contact information" text box.

10.2 Time Settings

The full name of NTP protocol is Network Time Protocol. Its destination is to transmit uniform and standard time in international Internet. Specific implementation scheme is appointing several clock source websites in the network to provide user with timing service, and these websites should be able to mutually compare to improve the

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accuracy. It can provide millisecond time correction, and is confirmed by the encrypted way to prevent malicious protocol attacks.

Function Description

On the "Time Settings" page, user can configure the device time and NTP server information.

Operation Path

Open in order: "System manage > Time setting".

Interface Description

Time setting interface as follows:



The main elements configuration description of time settings interface:

Interface Element	Description
Time Zone	Time standard of different global regions.
Local Time	The device's own time. Click the "Change" button to manually modify the device time or synchronize it to the current computer time.
Time Server	IP address or domain name of NTP server. The device will automatically synchronize NTP server time.

10.3 Remote Management

HTTPS (full name: Hypertext Transfer Protocol over Secure Socket Layer) is an HTTP channel targeted for security, which in short is a Secure version of HTTP. HTTPS provides data encryption services to prevent the attacker to intercept the transmitted

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message between the Web browser and web server, obtain some sensitive information, such as credit card numbers, passwords, etc.

The full English name of SSH is Secure Shell. SSH is a security protocol based on application layer and transmission layer. Telnet is transmitted in plaintext, while SSH is transmitted in ciphertext, which is more secure. SSH is a reliable protocol which provides security for remote login sessions and other network services. Using SSH protocol can effectively prevent information leakage in the process of remote management, and can also prevent DNS and IP spoofing. In addition, the transmitted data is compressed so that the transmission speed can be increased.

Function Description

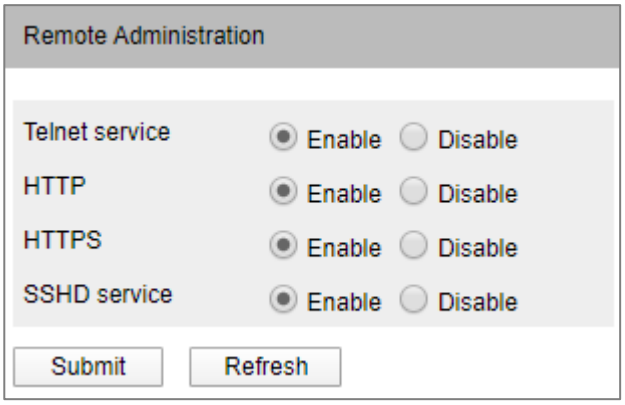
On the "Remote Administration" page, access methods such as TELNET, HTTP, HTTPS and SSHD can be restricted.

Operation Path

Open in order: "System Management > Remote Management".

Interface Description

The Remote management interface is as follows:



The main elements configuration description of Remote management interface:

Interface Element	Description
TELNET Service	TELNET service function status, the options are as follows: • Enable; • Disable. Note: When enabled, the TELNET client can access the CLI interface of the device.

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Interface Element	Description
HTTP	Device HTTP protocol function status, options are as follows: • Enable; • Disable. Note: When enabled, when using HTTP to access the WEB interface, the format is HTTP://192.168.1.254, and the address is the IP address of the corresponding device.
HTTPS	Device HTTPS protocol function status, options are as follows: • Enable; • Disable. Note: When enabled, when using HTTPS to access the WEB interface, the format is HTTPS://192.168.1.254, and the address is the IP address of the corresponding device.
SSHD service	SSH service function status, the options are as follows: • Enable; • Disable. Note: When enabled, the SSH client can access the CLI interface of the device.

10.4 User Configuration

Function Description

In the "user configuration" page, users can add and delete users freely. Users need to access the device by login with user name and password. The initial user name and password are both: admin.

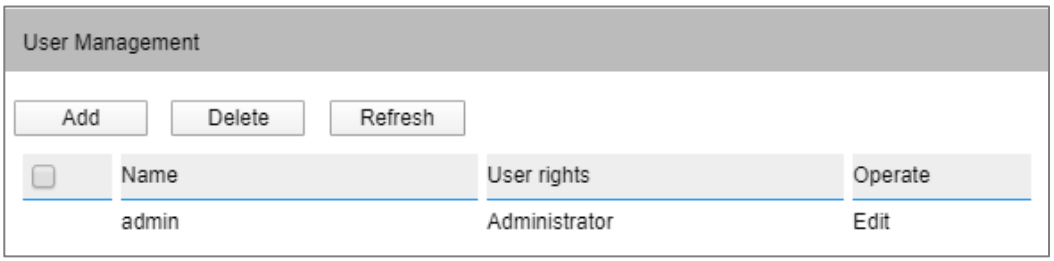
Operation Path

Open in order: "System Management > User Configuration".

Interface Description

The User Configuration interface is as follows:

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The main elements configuration description of user configuration interface:

Interface Element	Description
Name	Identification of the visitor. Note: User names and passwords can support up to 32 characters.
User Rights	The user's access rights are shown as follows: • Administrator: has administrator authority and can configure parameters of device; • General user: has viewing authority, and can view device configuration parameters and network diagnosis operations.
Operate	Click Edit to modify the password and user rights of the current user.

10.5 IP Address Filtering

Function Description

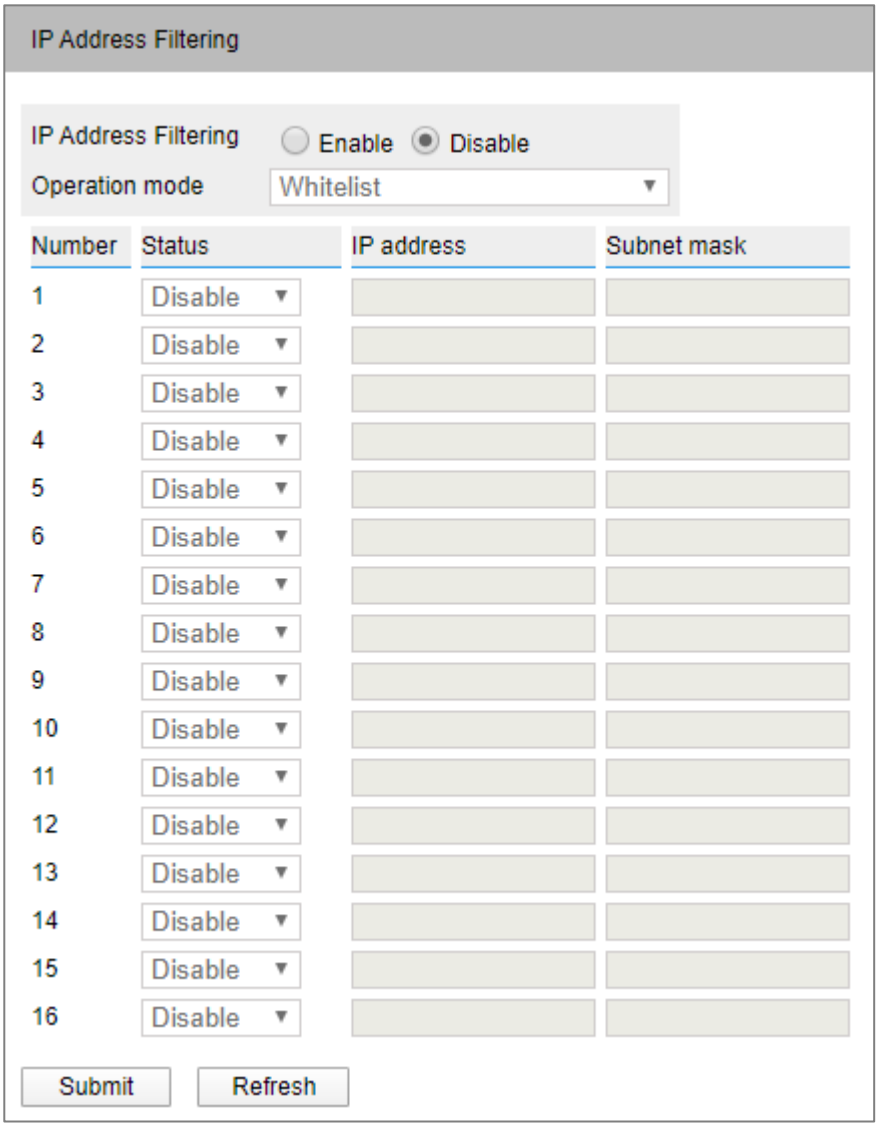
Users can limit the ongoing access or connected host IP address and subnet mask via setting access rules on the "IP Filter" page.

Operation Path

Open in order: “System Management> IP Address Filtering”.

Interface Description

IP filter interface shown as follows:



Main element configuration instructions in IP Filtering interface:

Interface Element	Description
IP Address Filtering	Enable or disable IP filtering rules. • Enable • Disable
Operation Mode	Set filtering rules for IP addresses. • White list: the IP address set in the filtering rule is allowed to access the device. • Blacklist: IP addresses set in filtering rules are prohibited from accessing devices. Notice: • When the white list is enabled, IP addresses outside the white list will not be able to access the device. • If the IP address in the white list cannot access the device, please clean the browser cache and access it again.

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Interface Element	Description
	• When the blacklist is enabled, the IP addresses covered by the blacklist will not be able to access the device.
Number	Displays the IP address filtering rule number.
Status	Enable or disable Filtering rules. • Enable • Disable
IP Address	Set the IP address in dotted decimal format in the filter rule, such as "192.168.1.61".
Subnet mask	Set the subnet mask in dotted decimal format in the filter rule, such as "255.255.255.0".

10.6 MAC Filtering

Function Description

On the "MAC Filter" page, user can restrict the host MAC address to access or connect by setting access rules.

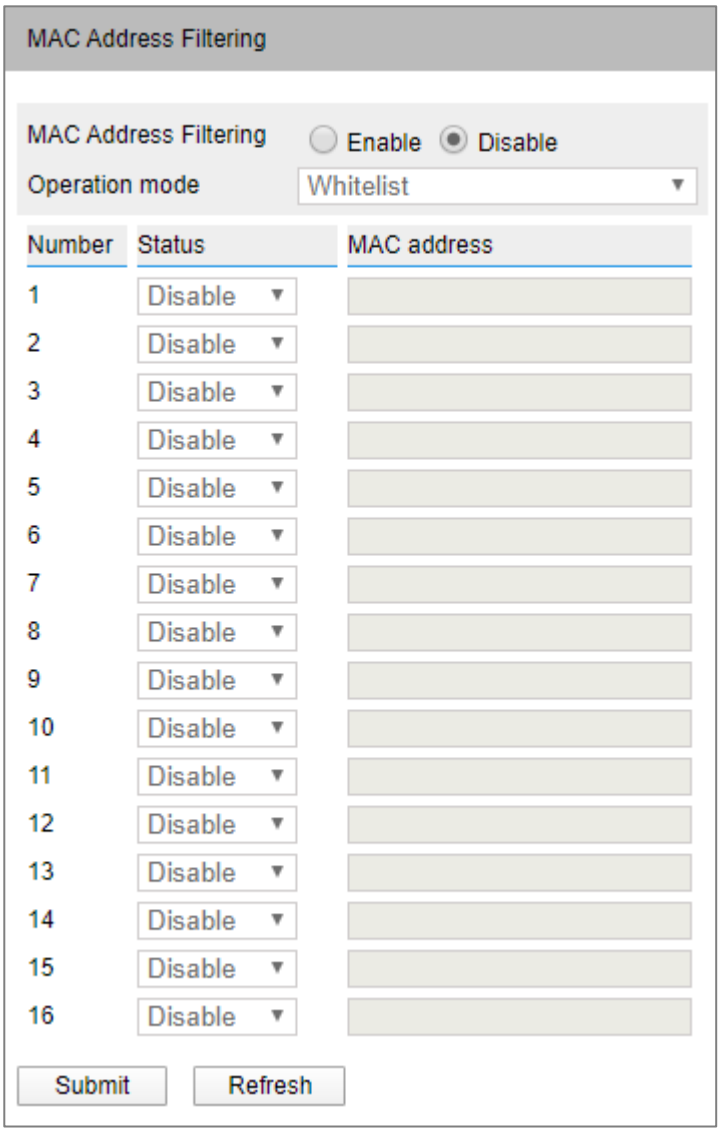
Operation Path

Open in order: “System Management > MAC Address Filtering”.

Interface Description

MAC filter interface shown as follows:

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The main elements configuration description of MAC Filter interface:

Interface Element	Description
MAC Address Filtering	Enables or disables MAC address filtering rules. • Enable • Disable
Operation Mode	Set filtering rules for MAC addresses. • White list: the MAC address set in the filtering rule is allowed to access the device. • Blacklist: MAC addresses set in filtering rules are prohibited from accessing devices. Notice: • When the white list is enabled, MAC addresses outside the white list will not be able to access the device. • When the blacklist is enabled, the MAC addresses covered by the blacklist will not be able to access the device.

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Interface Element	Description
Number	Displays the MAC address filtering rule number.
Status	Enable or disable Filtering rules. • Enable • Disable
MAC Address	Set the hexadecimal format MAC address in the filter rule, such as "00-22-6F-03-BD-52".

10.7 Static Routing Configuration

Function Description

In “Static Routing Configuration“ page, you can configure how to connect device with external network. In the dual IP mode, the data egress interface can be specified via static routing configuration when device is communicating across network segment. Device supports up to 32 routing entries, every entry must provide gateway, destination address, subnet mask, egress interface and other information.

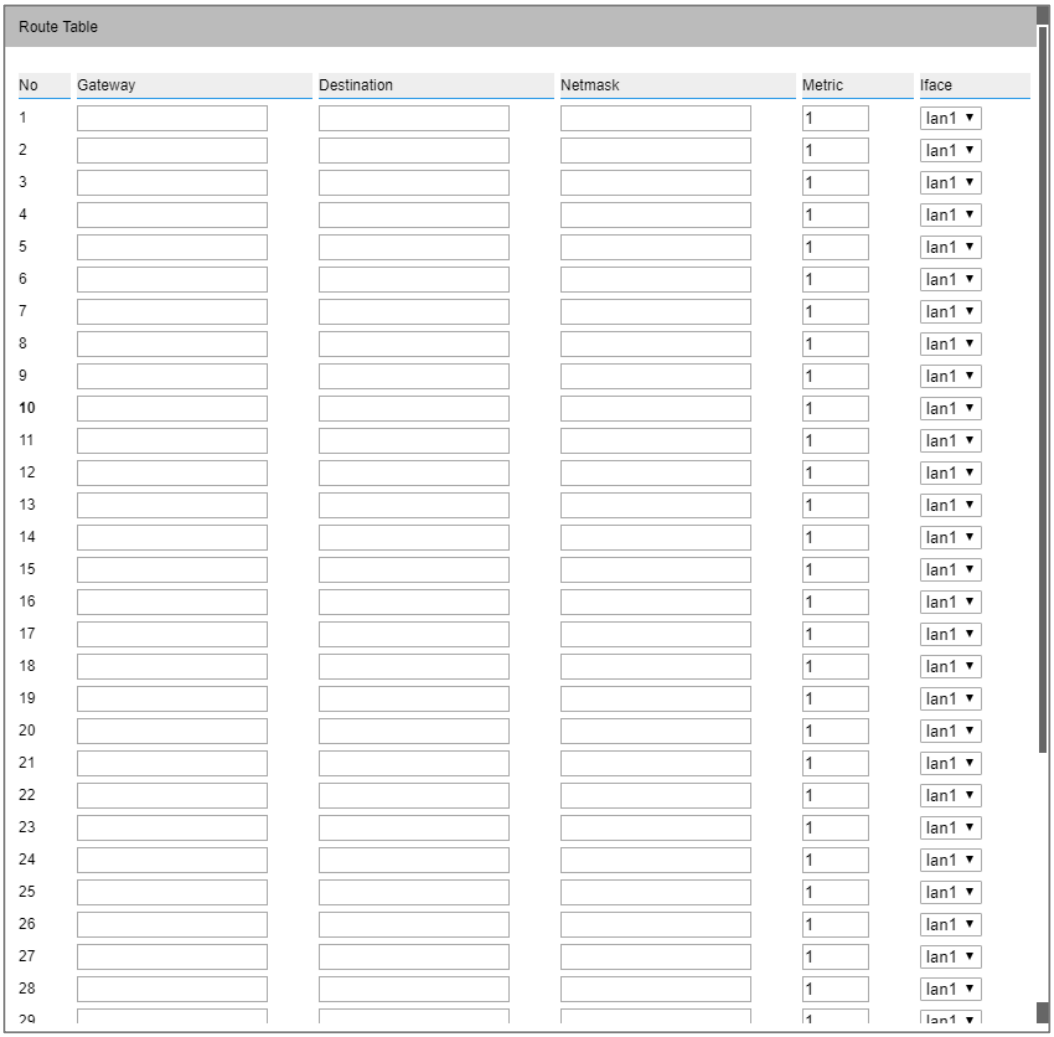
Operation Path

Open in order: "System Management > Static Routing Configuration".

Interface Description

The static routing configuration interface as follows:

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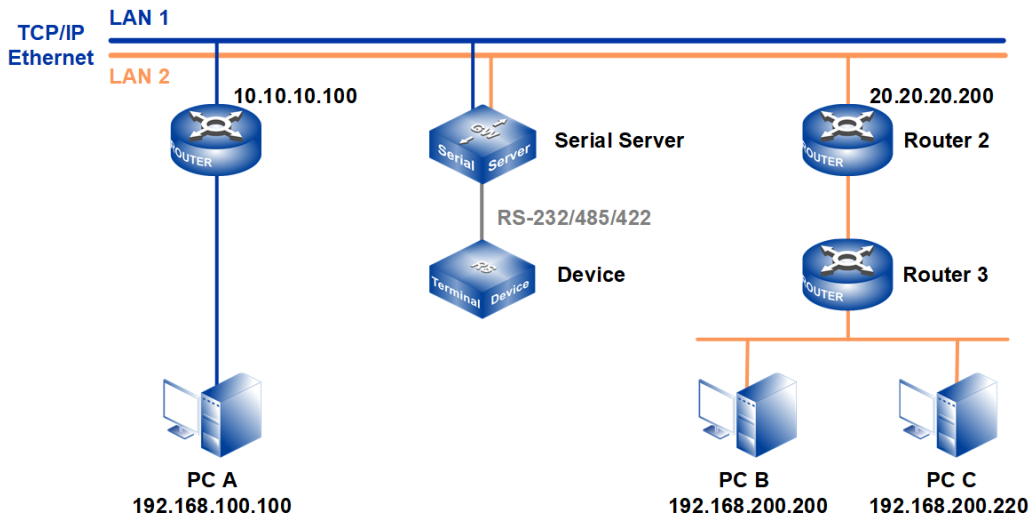
The main elements configuration description of static routing configuration interface:

Interface Element	Description
No	The entry number of static routing table.
Gateway	Gateway IP address or IP address of next hop router.
Destination	The IP address of destination host or the network address of destination routing.
Netmask	Subnet mask of destination network.
Metric	The number of routers from source terminal to destination terminal is hop. Device will prioritize the routing of data packets if more than one router is available to reach a given destination.
Iface	Network data egress, options are as follows: • lan1 • lan2

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Configuration Instance

Configure the static route of the serial server to communicate with PC A, PC B and PC C. Assume that the serial server LAN1 is connected with router 1 and communicates with PC A; Serial server LAN2 is connected with router 2 and communicates with PC B/PC C through router 3, as shown in the following figure.



Note:

The device picture mentioned in above figure is only an example, and the actual appearance of the device is subject to the device obtained.

The device communicates with PC A, the network parameters are as follows:

- IP address of network port 1 of serial server (LAN 1)：10.10.10.10
- Router1 IP address (LAN 1) : 10.10.10.100
- PC A IP address: 192.168.100.100

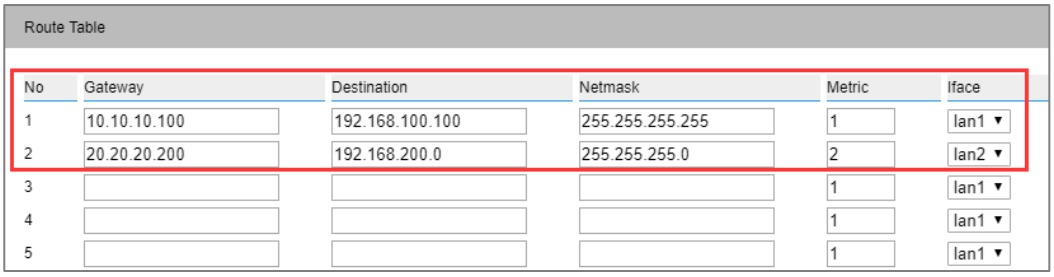
The device communicates with PC B/C, and the network parameters are as follows:

- IP address of network port 2 of serial server (LAN 2)：20.20.20.20
- Router2 IP address (LAN 2) : 20.20.20.200
- PC B IP address 192.168.200.200
- PC C IP address 192.168.200.200

When the device communicates with PC A, it passes through a router, and the hop count is 1, so a static routing table needs to be added, as shown in item 1 in the

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following figure. When the device communicates with PC B or PC C, it passes through two routers with a hop count of 2, so a static routing table needs to be added, as shown in item 2 in the following figure.



10.8 Free ARP

Function Description

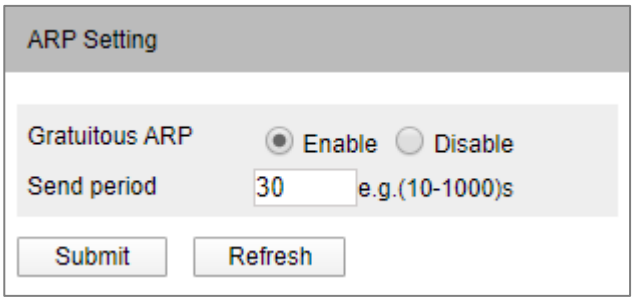
In “Free ARP” page, you can enable free ARP function and set parameter of sending period. Free ARP function can avoid the failure of communication due to device MAC address being aged by switch or router.

Operation Path

Open in order: “System Management > Free ARP”.

Interface Description

Free ARP interface is as below:



Main elements configuration descriptions of free ARP interface:

Interface Element	Description
Gratuitous ARP	Free ARP function status, options as follows: • Enable • Disable
Send period	The interval between sending Gratuitous ARP network

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Interface Element	Description
	packets is 10 by default, for example, 10-1000s.

10.9 Diagnostic Test

10.9.1 Ping

Function Description

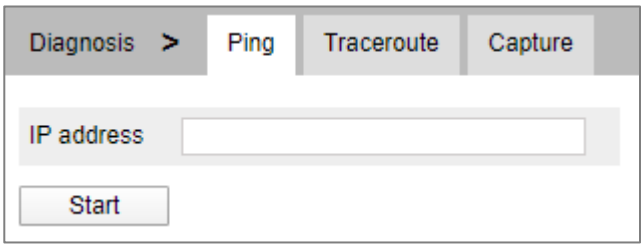
On the "Ping" page, users can use the Ping command to check whether the network is clear or the network connection speed. Ping utilizes the uniqueness of network machine IP address to send a data packet to the target IP address, and then ask the other side to return a similarly sized packet to determine whether two network machines are connected and communicated, and confirm the time delay.

Operation Path

Open in order: “System Management > Diagnosis > Ping".

Interface Description

The interface of Ping is as follows:



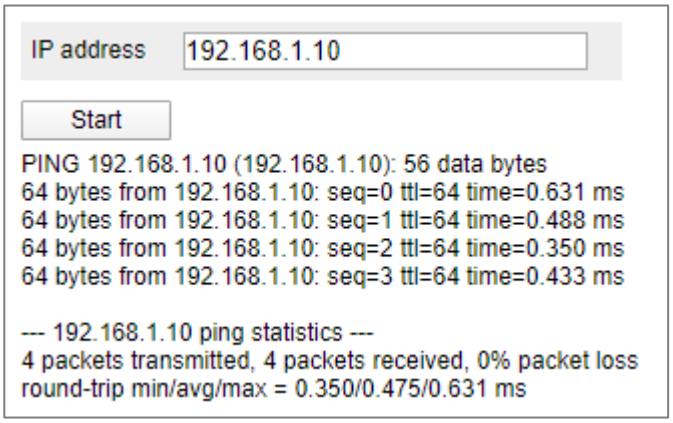
The main elements configuration description of Ping configuration interface:

Interface Element	Description
IP Address	The IP address of the detected device, that is, the destination address. The device can check the network intercommunity to other devices via the ping command.

Ping Configuration:

Step 1 Fill in the IP address that needs ping in the IP address text box;

Step 2 Click the "Start" button to check the ping results;



Step 3 End.

10.9.2 Traceroute

Function Description

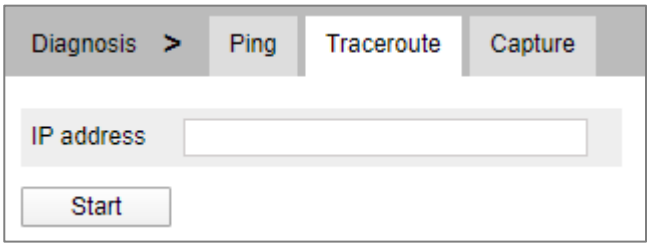
On the "Traceroute" page, users can test the network conditions between the device and the target host. Traceroute measures how long it takes by sending small packets to the destination device until they return. Each device on a path Traceroute returns three test results. Output result includes each test time (ms), device name (if exists) and the IP address.

Operation Path

Open in order: “System Management > Diagnose Test > Traceroute".

Interface Description

TRACEROUTE interface as follows:



The main element configuration description of Traceroute interfaces:

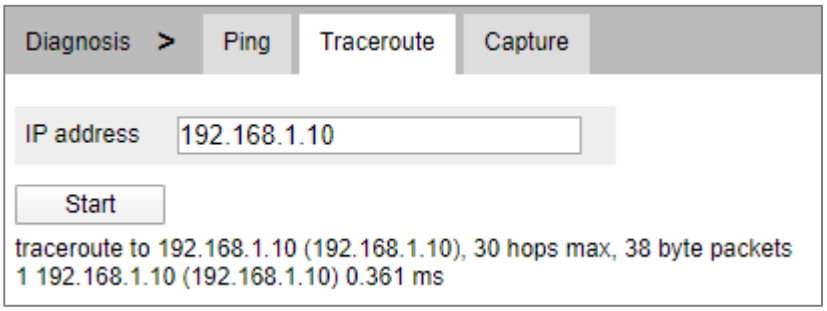
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Interface Element	Description
IP Address	IP address of the destination device, fill in the IP address of the opposite device that needs to be detected.

TRACEROUTE Configuration:

Step 1 Fill in the destination IP address in the "IP address" text box;

Step 2 Click the "Start" to see the results, as the picture below.



Note:

The above figure shows the time from the device to IP address 192.168.1.61, which takes 0.633ms after one hop.

Step 3 End.

10.9.3 Packet Capture Diagnosis

Function Description

On the "Packet Capture Diagnosis" page, the user can obtain the data packets sent and received by the Ethernet port of the device for network debugging and data analysis.

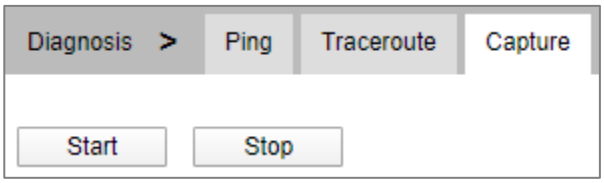
Operation Path

Open in order: “System Management > Diagnose Test > Packet Capture Diagnosis".

Interface Description

The Packet Capture Diagnosis interface screenshot is as follows:

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Main elements configuration description of Packet Capture Diagnosis interface:

Interface Element	Description
Start	Click the “Start” button, and the device will start capturing network packets.
Stop	Click the "End" button, the device stops capturing network packets, and saves the network packets captured during this period to the local client in ".pcap" format. Note: Users can use Wireshark or other third-party software to open the captured packets.

10.10System Maintenance

10.10.1 Configure File Management

Function Description

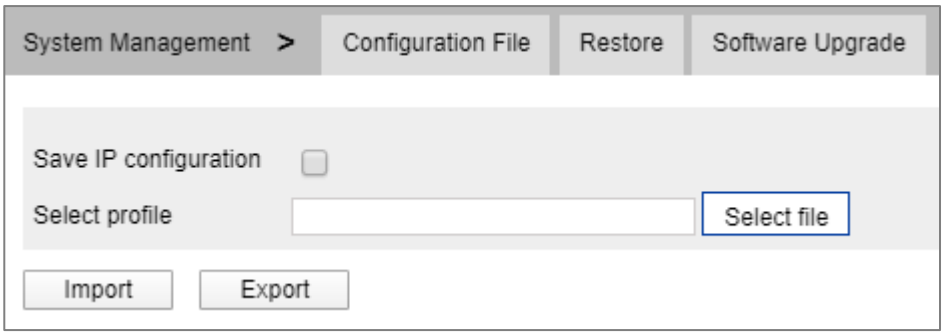
On the "Management File" page, user can download and upload configuration file.

Operation Path

Open in order: “System Management > System Maintenance > Configuration File Management”.

Interface Description

Configuration file management interface is as follows:



The main elements configuration description of configure file management interface:

Interface Element	Description
Save IP configuration	When checked, the device can keep the current IP address after importing the configuration file.
Select profile	Select the path to upload configuration file locally, click "Select File" to select required configuration file. Note: Uploaded configuration files need to be exported by devices of the same model.
Export	Download the configuration file of the current device in the format of. tar. Note: The downloaded configuration file will be saved in the format of ".tar", which is encrypted, so please do not decompress or modify it.
Import	Upload configuration file.

Note

- After finishing update, the device will automatically open a new page to "System Information", and the uploaded configuration file will be valid after the device is reset.
- After uploading the configuration file, if the static IP in the configuration file and the computer IP are not in the same network segment, the webpage cannot be opened.
- While uploading configuration file, if dynamic IP is used in the configuration file and there is no DHCP server in the network segment, relative IP portion won't be updated.
- Do not click on or configure other WEB pages of the device or restart the device when uploading configuration files or upgrading software. Otherwise, the configuration file upload or software update will fail, or the device system will crash.

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10.10.2 Restore Factory Settings

Function Description

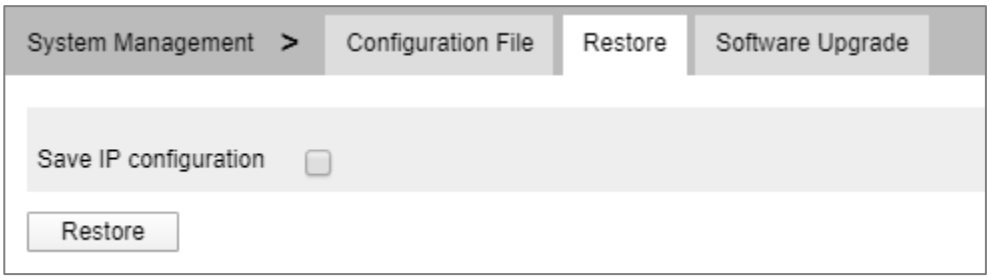
On the "Restore Factory Settings" page, user can restore the device to default setting.

Operation Path

Open in order: "System management > System Maintenance > Restore".

Interface Description

Restore Factory Settings interface is as follows:



The main element configuration description of restore factory settings interface:

Interface Element	Description
Save IP Configuration	When checked, the device can keep the current IP address after restoring the factory settings.
Restore	Click this button, the device will lose all existing configurations and reverts to factory settings.

Note

Restoring factory value settings will cause all configurations to be in the factory state, where the IP address is the static IP address "192.168.1.254", and the user name and password default to "admin".

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10.10.3 Upgrade

Function Description

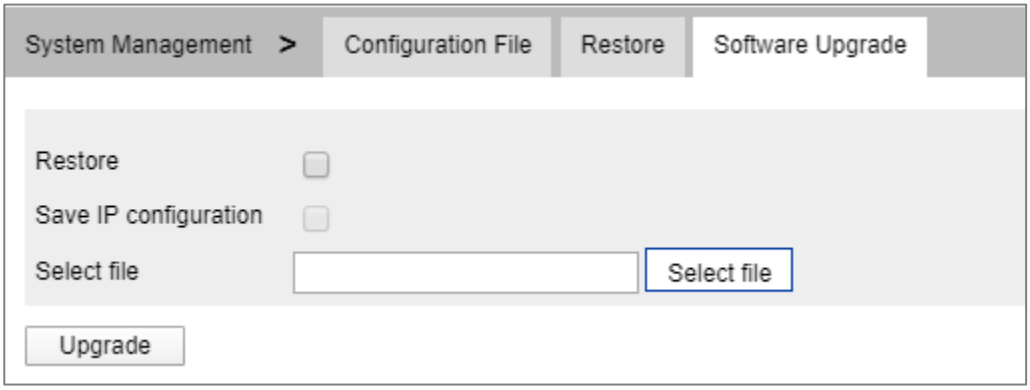
On the Software Upgrade page, you can update and upgrade the device program.

Operation Path

Open in order: "System management > System Maintenance > Software Upgrade".

Interface Description

The software update interface as follows:



The main elements configuration description of software update interface:

Interface Element	Description
Restore	When checked, the device will be restored to the factory settings after upgrading. After unchecking, the configuration parameters will be kept after the device software is upgraded.
Save IP Configuration	After the software upgrade is checked to restore the factory configuration, the IP configuration can be checked to keep the current IP address and other parameters will be restored to the factory configuration.
Select File	Select the path of the local upgrade file, and click “Select file” to select the required configuration file.
Upgrade	Click “upgrade” button to start the program upgrade.

Note

- Do not click on or configure other WEB pages of the device or restart the device or power

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off the device when upgrading software. Otherwise, the software update will fail, or the device system will crash.

- Maintain a reliable wired connection when upgrading.
- When the online upgrade is complete, the device will restart automatically.

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11 COM Work Mode Configuration Instance

About This Chapter

Content	Link
This Chapter	11.1 RealCom Mode 11.2 TCP Server Mode 11.3 TCP Client Mode 11.4 UDP Server Mode 11.5 UDP Client Mode 11.6 UDP Rang Mode 11.7 UDP Multicast Mode

Note

Interface elements, operation paths and some functions involved in the serial server and test software in the configuration example shall be subject to the actually acquired device and software. Because the software version is not updated or upgraded regularly, the configuration examples are for reference only.

11.1 RealCom Mode

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Background Introduction

Assume that the IP address of the serial server is: 192.168.1.250; COM1 is a real serial port, need to establish a connection with the virtual serial port COM2 in the management software VSP Manager.

The serial port information is as follows:

- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Operating Steps

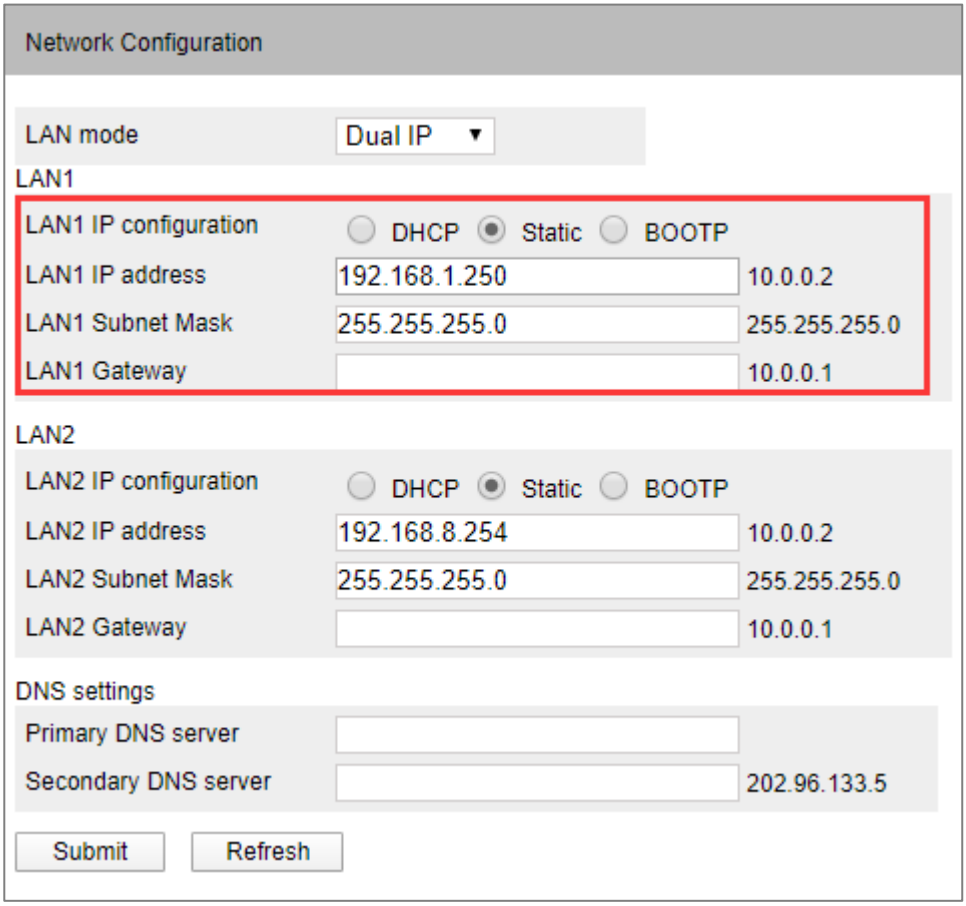
Step 1 Configure the IP address of the serial server.

1 Login in the Web configuration interface, choose "Network Setting".

2 In the "Network port 1" area, select "Network port 1 Configuration" as "Manual Setting", and enter the corresponding network address information such as "Network port 1 Address", "Network port 1 Subnet Mask" and "Network port 1 Gateway".

3 Other parameters remain the default, click "Submit".

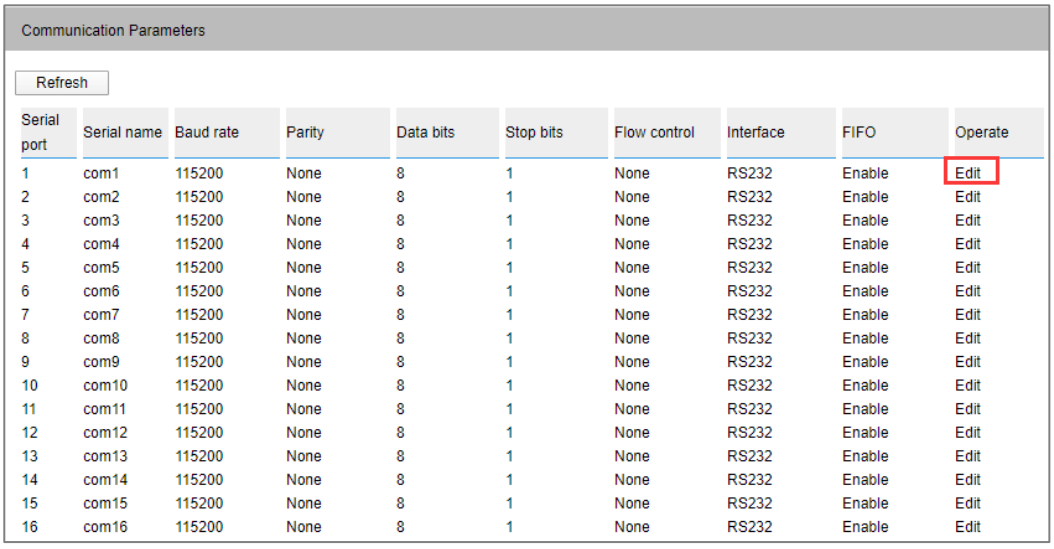
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Step 2 Configure the serial port parameter information.

1 Log in to the Web configuration interface and select "Serial Settings".

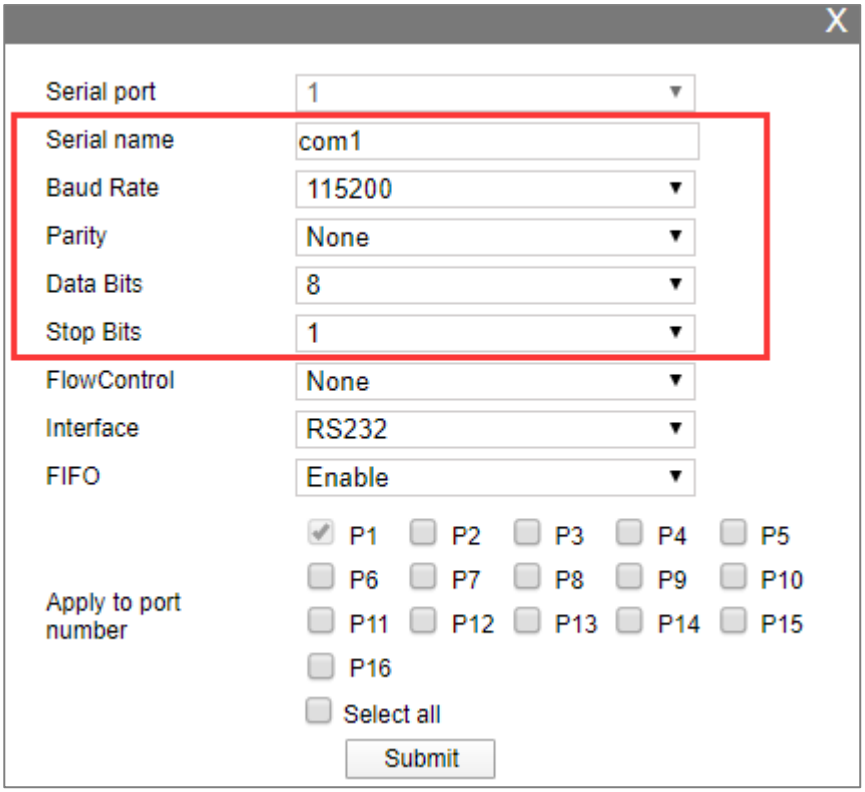
2 In the serial port 1 entry, click the "Edit" button under the operation, as shown in the following figure.



Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

3 In the “Edit” window, set “baud rate”, “parity bit”, “data bit” and “stop bit” respectively, as shown in the following figure.

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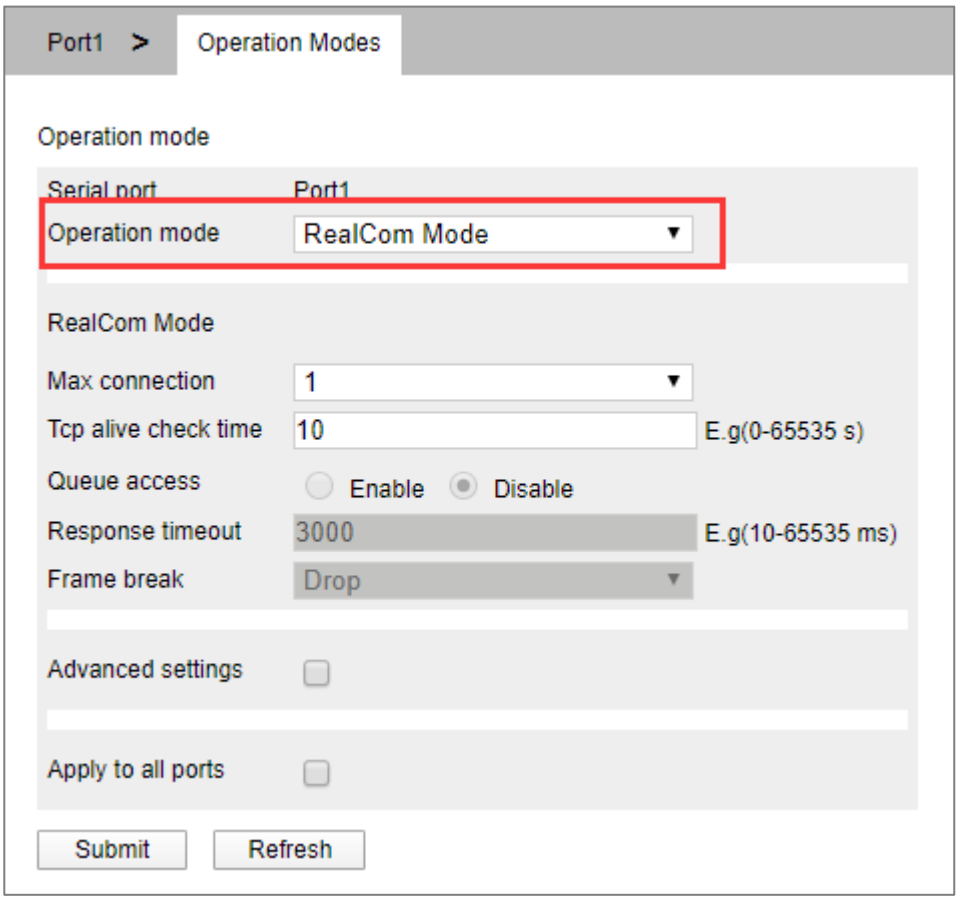


4 Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the serial server.

1 Log in to the WEB configuration interface and select "COM mode > Port1".

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2 Click the "Work Mode" drop-down list box and select "RealCom Mode".

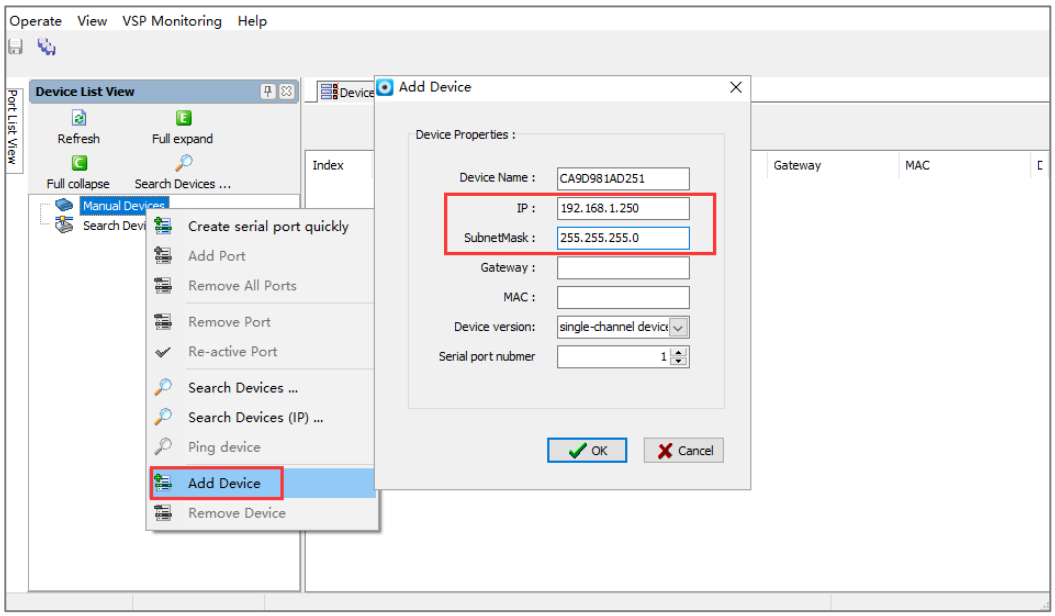
3 Click "Max Connection" drop-down list box, select "1".

4 Other parameters remain the default, click "Submit".

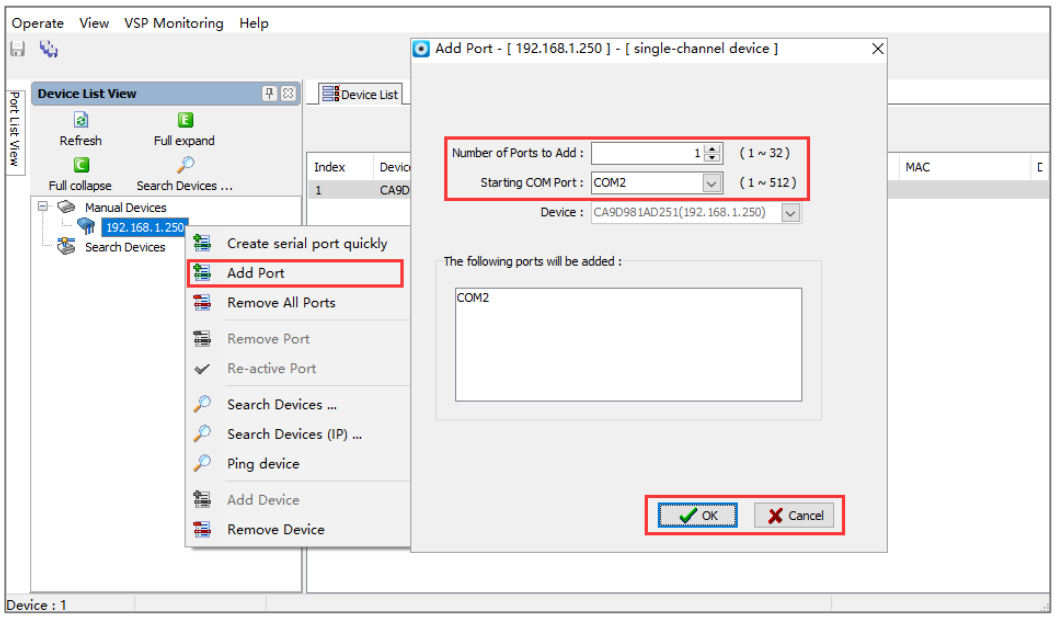
Step 4 Run "VSP Manager" software, configure the virtual serial port COM2.

1 Run the virtual serial port management software "VSP Manager", click "add device manually" in the left navigation bar, and select "add device". Enter the IP address and subnet mask of the serial server and click “OK”.

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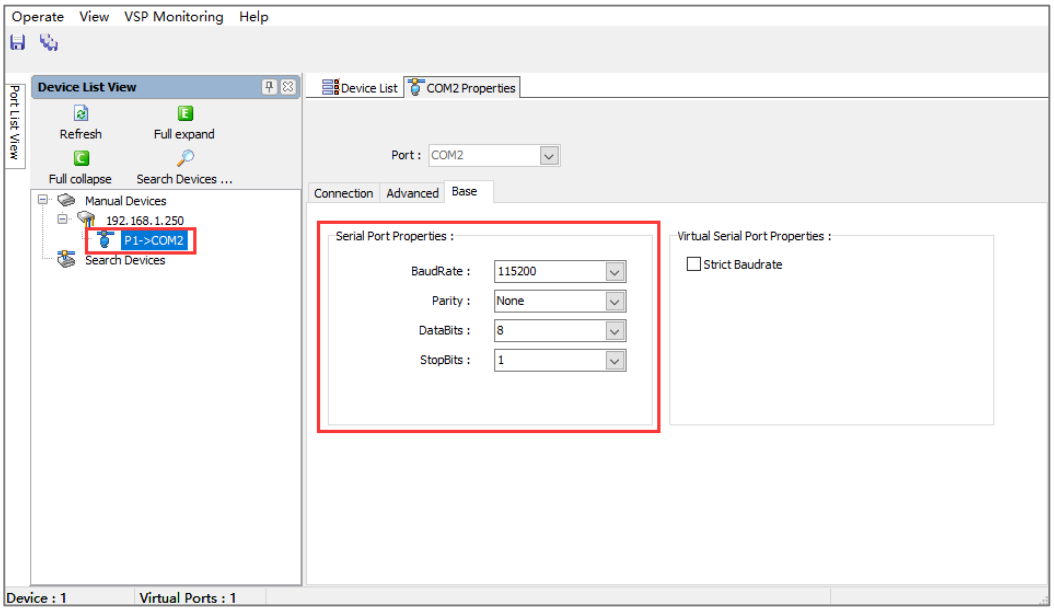


2 Click "192.168.1.250" and select "Create Serial Port". After creating the virtual serial port COM2, click “OK”.



3 Click "Base" in the “COM2 Properties” option box, configure the virtual serial port COM2 parameter information and real COM1 match the same.

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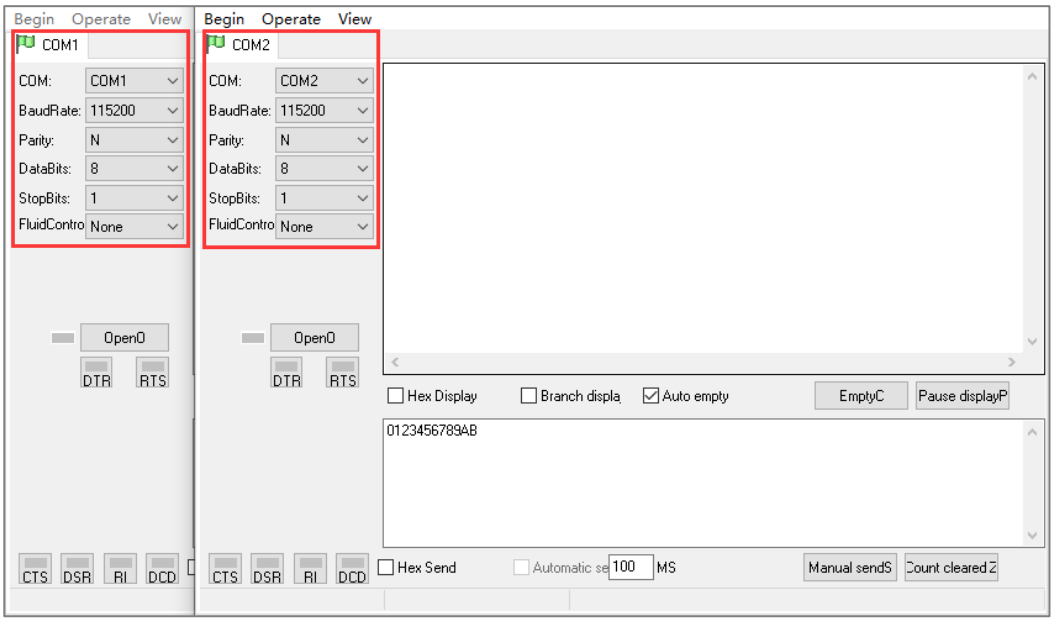


After the completion of the above configuration, between the real serial port COM1 and virtual COM2 connection can be successfully established to send data to each other.

Step 5 Run "ComTest" software to test the communication between real serial port COM1 and virtual serial port COM2.

1 Install and run "ComTest" software, and click "Add Window" in the "Start" menu.

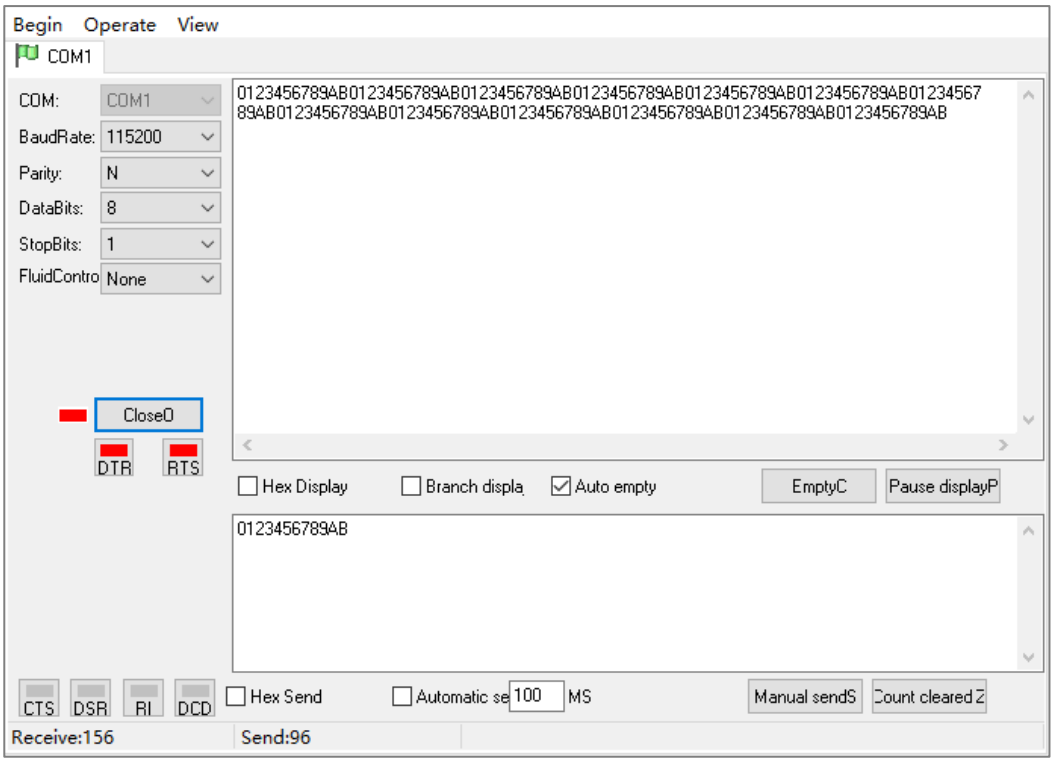
2 Add the real serial "COM1" and virtual serial "COM2" two windows, the "COM1" and "COM2" serial port parameter information match.

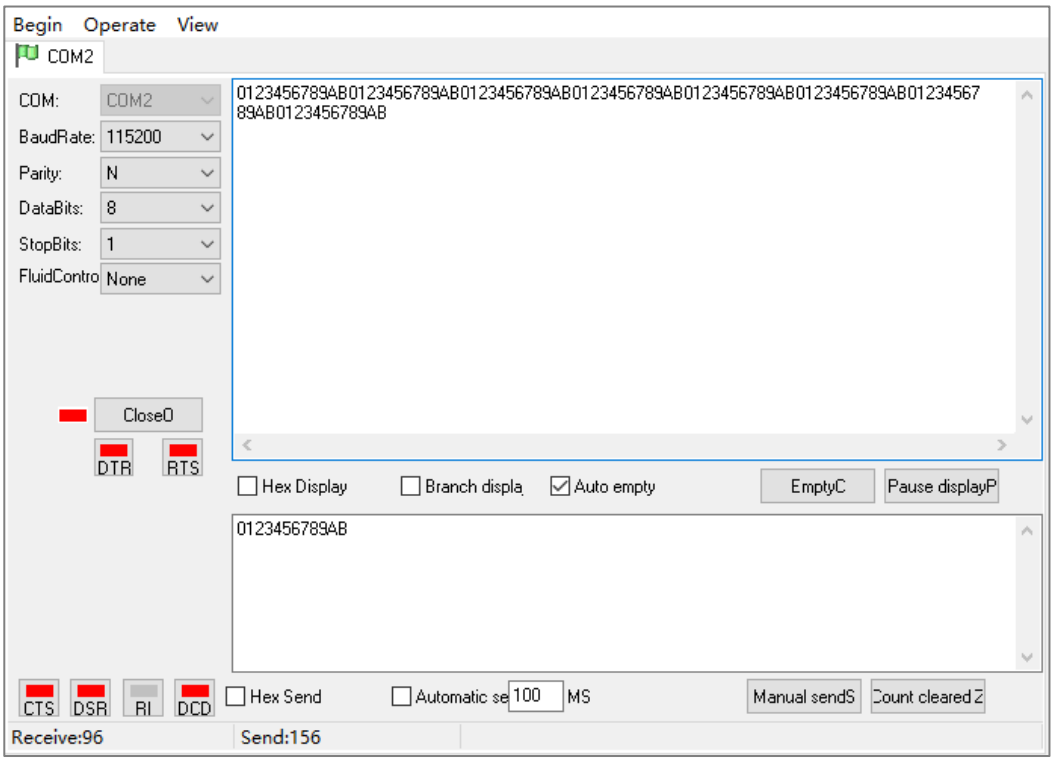


3 Turn on the serial signals of "COM1" and "COM2" respectively, and click the "send manually" button to test and check the data receiving and sending status

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between the real serial port COM1 and the virtual serial port COM2.





Step 6 End.

11.2 TCP Server Mode

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Background Introduction

Assuming that the serial port "COM1" of the serial server is operating in the "TCP server mode", passively waiting for one host PC to connect, and the host can read or send Ethernet data to a serial device.

The parameters of the serial server (TCP server) are as follows:

- IP address: 192.168.1.250
- Local Port: 30000
- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Host PC (TCP client mode) parameter information as follow:

- IP address: 192.168.1.61

Operating Steps

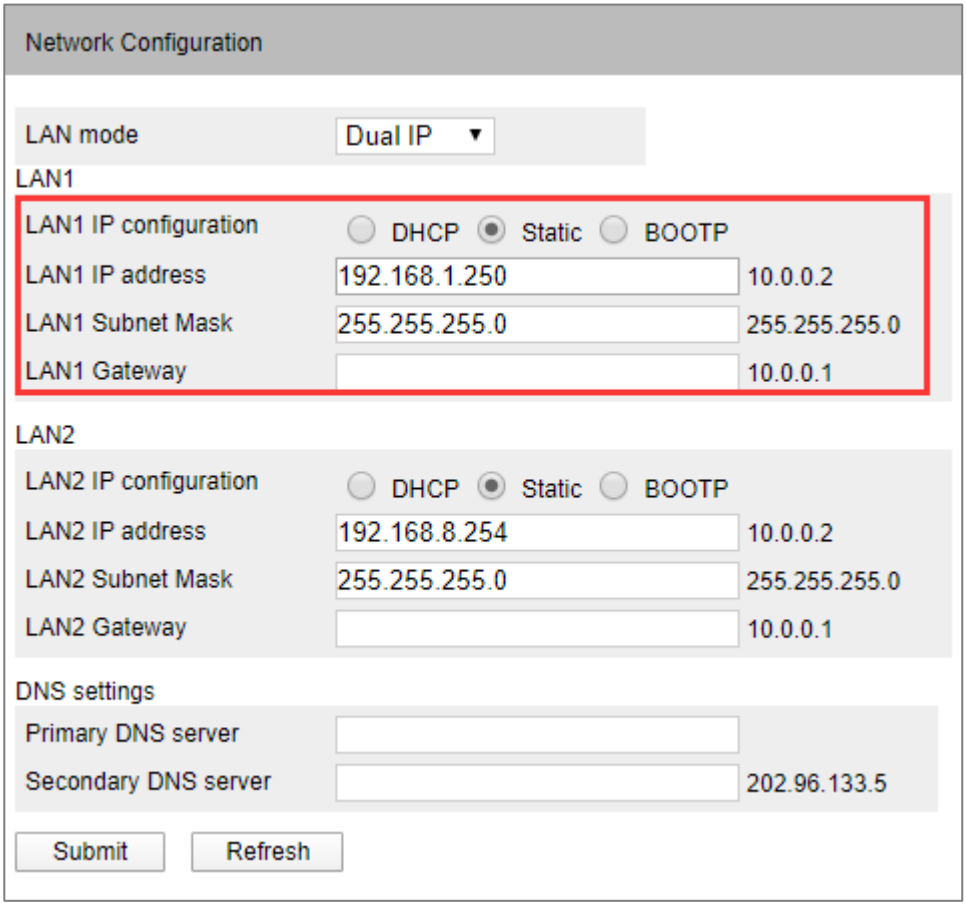
Step 1 Configure the IP address of the serial server.

1 Login in the Web configuration interface, choose "Network Setting".

2 In the "Network port 1" area, select "Network port 1 Configuration" as "Manual Setting", and enter the corresponding network address information such as "Network port 1 Address", "Network port 1 Subnet Mask" and "Network port 1 Gateway".

3 Other parameters remain the default, click "Submit".

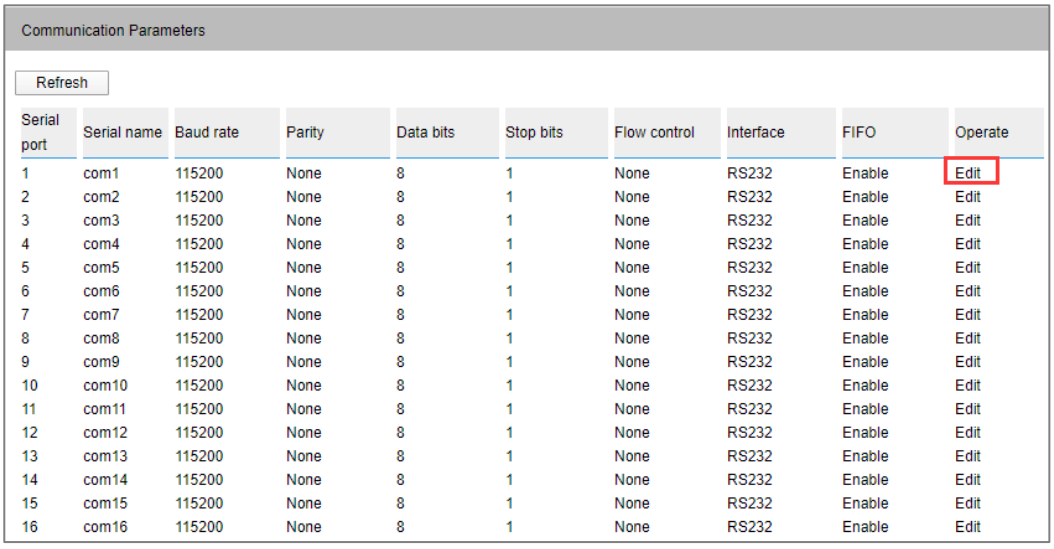
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Step 2 Configure the serial port parameter information.

1 Log in to the Web configuration interface and select "Serial Settings".

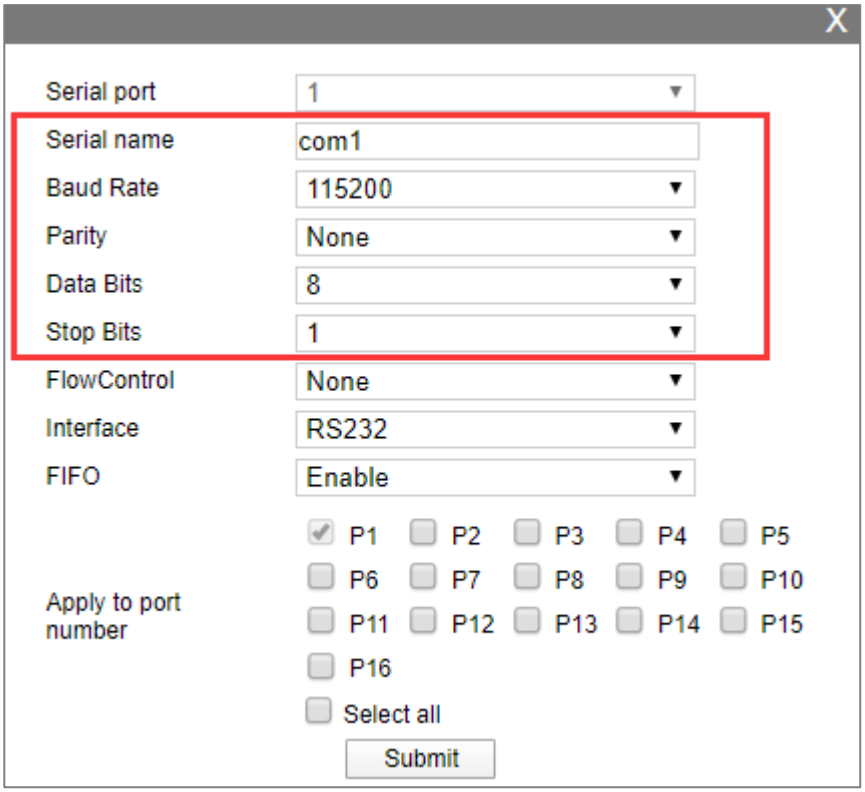
2 In the serial port 1 entry, click the "Edit" button under the operation, as shown in the following figure.



Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

3 In the “Edit” window, set “baud rate”, “parity bit”, “data bit” and “stop bit” respectively, as shown in the following figure.

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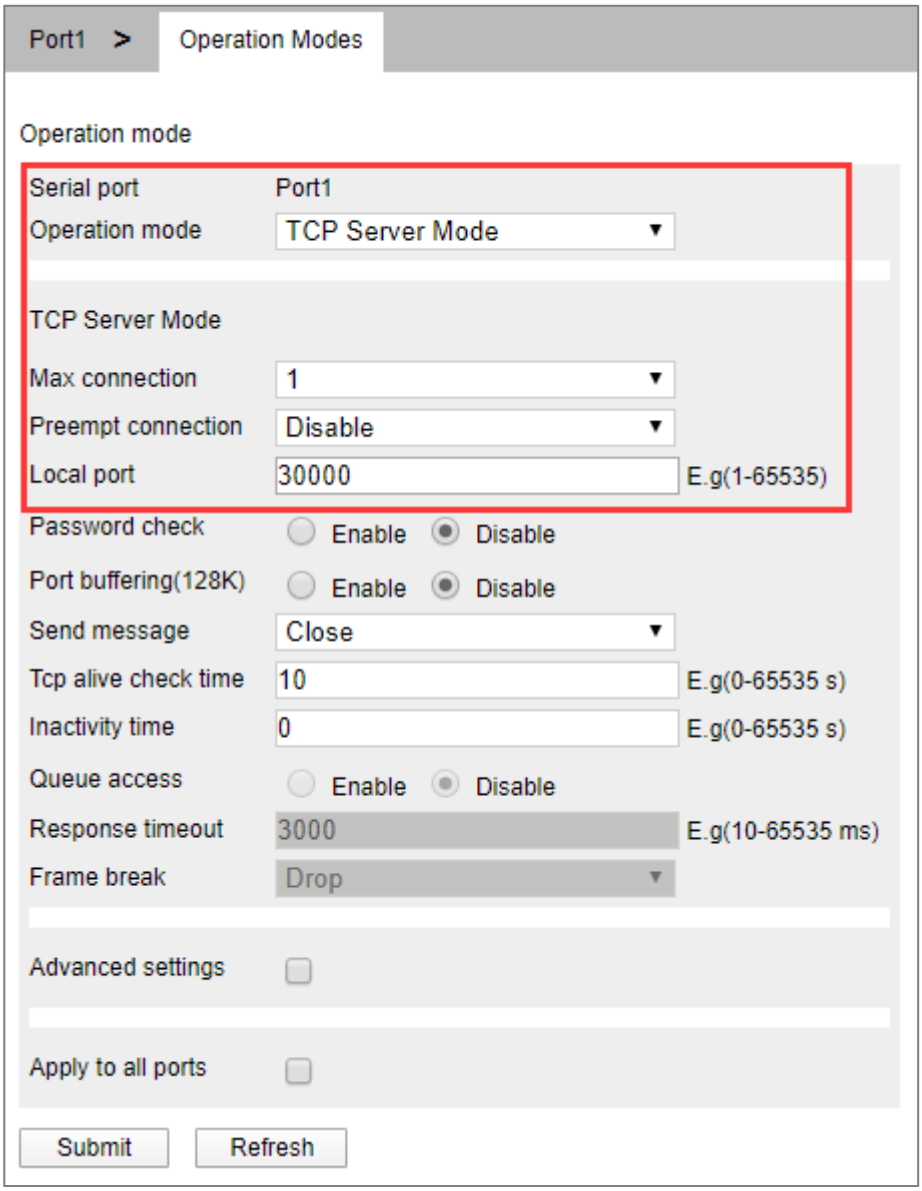


4 Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the serial server.

1 Log in to the WEB configuration interface and select "COM mode > Port1".

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2 Click the "Work Mode" drop-down list box and select "TCP Server Mode".

3 Click "Session Number" drop-down list box, select "1".

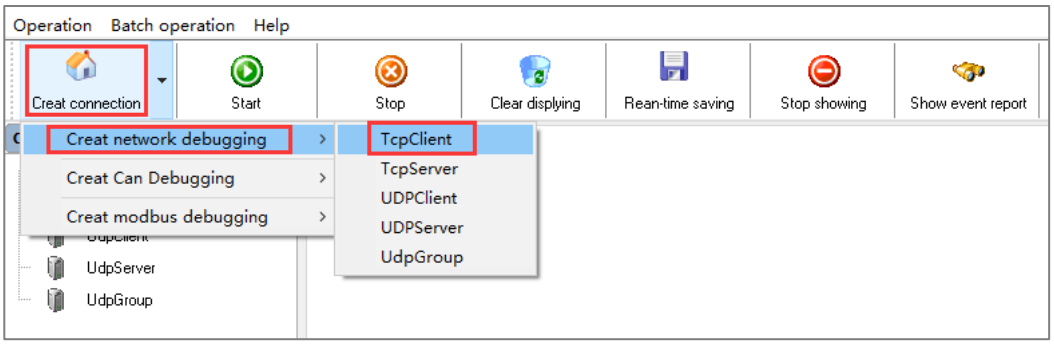
4 Enter "30000" in the "Local Port" text box.

5 Other parameters remain the default, click "Submit".

Step 4 Run the "DebugTool" software to create a TCP client for the host.

1 Install and run "DebugTool" software, click "create connection" drop-down list box, and select "create network debugging > TcpClient".

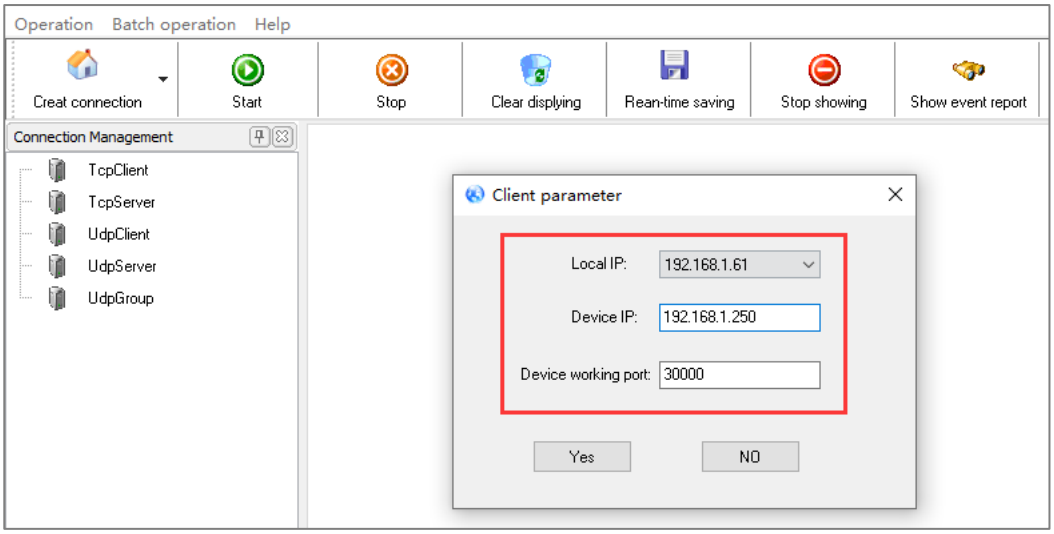
Copyright © 3onedata Co., Ltd.



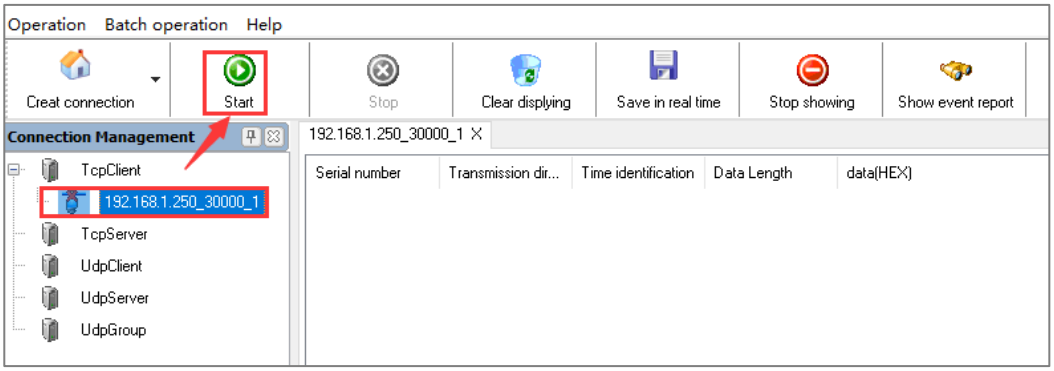
2 In the "Local IP" drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the TCP client).

3 In the "Device IP" text box, enter the IP address "192.168.1.250" of the serial server (that is, the TCP server).

4 In the “Device Working Port” text box, enter the local port "30000" of the serial server (that is, the TCP server), and click “OK”.



5 Select the TcpClient connection you created and click “Start”.



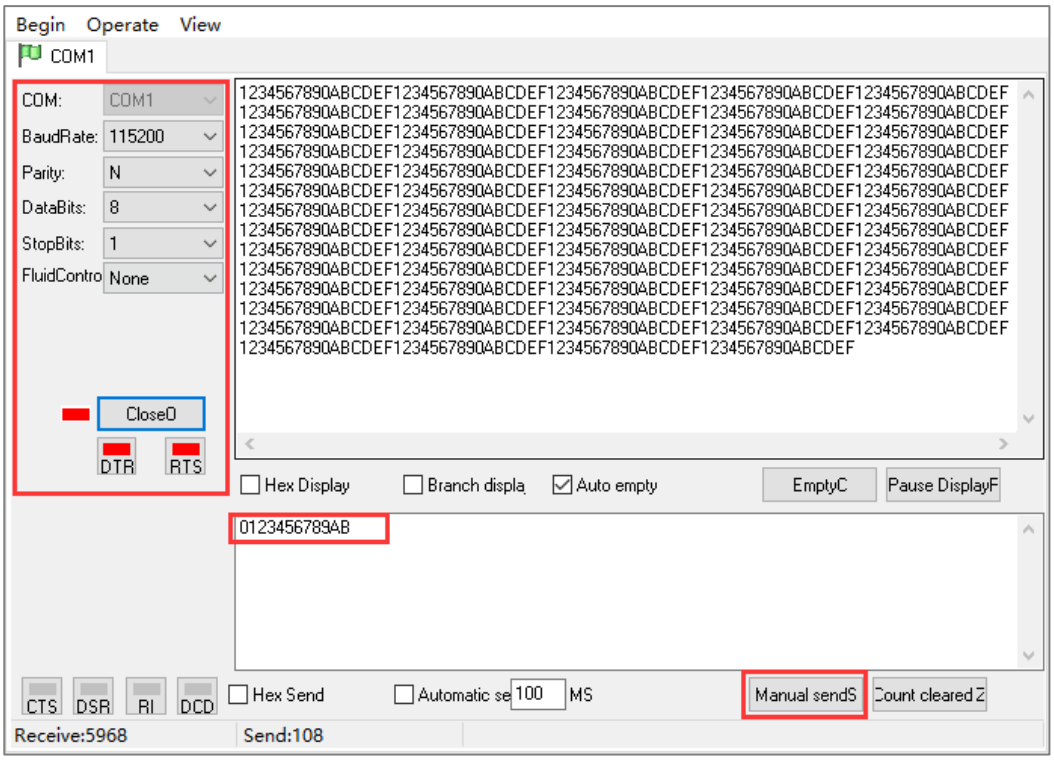
Step 5 Run "DebugTool" and "ComTest" software synchronously to test the communication between serial port server (i.e. TCP server) and host PC (i.e. TCP client).

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1 Install and run "ComTest" software, and click "Add Window" in the "Start" menu.

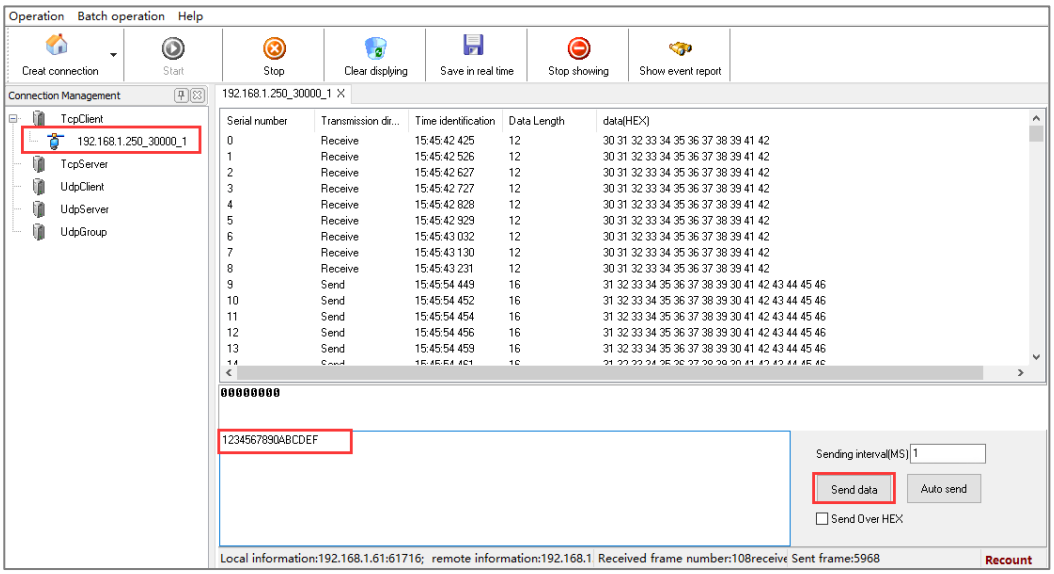
2 Add serial port "COM1" window, and configure serial port number, baud rate, check bit and data bit and other parameters consistent with "serial port configuration" of WEB interface.

3 Open the serial port signal of "COM1", for example, enter the serial port information "0123456789AB", and click "send manually".



4 Run the “DebugTool” software and view the serial port information received by the host PC in the TcpClient option box. Similarly, the host PC can also send messages to serial port devices.

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Step 6 End.

11.3 TCP Client Mode

Background Introduction

Assuming that the serial port "COM1" of the serial server is working in "TCP client mode", it initiates a connection with a host PC, and the host can read or send Ethernet data to a serial device.

When the data transfer is completed, the serial server will automatically shut down the network connection after 30 seconds.

The parameters of the serial server (TCP client) are as follows:

- IP address: 192.168.1.250
- Local Port: 30000
- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Host PC (TCP server mode) parameter information as follow:

- IP address: 192.168.1.61
- Local Port: 31000

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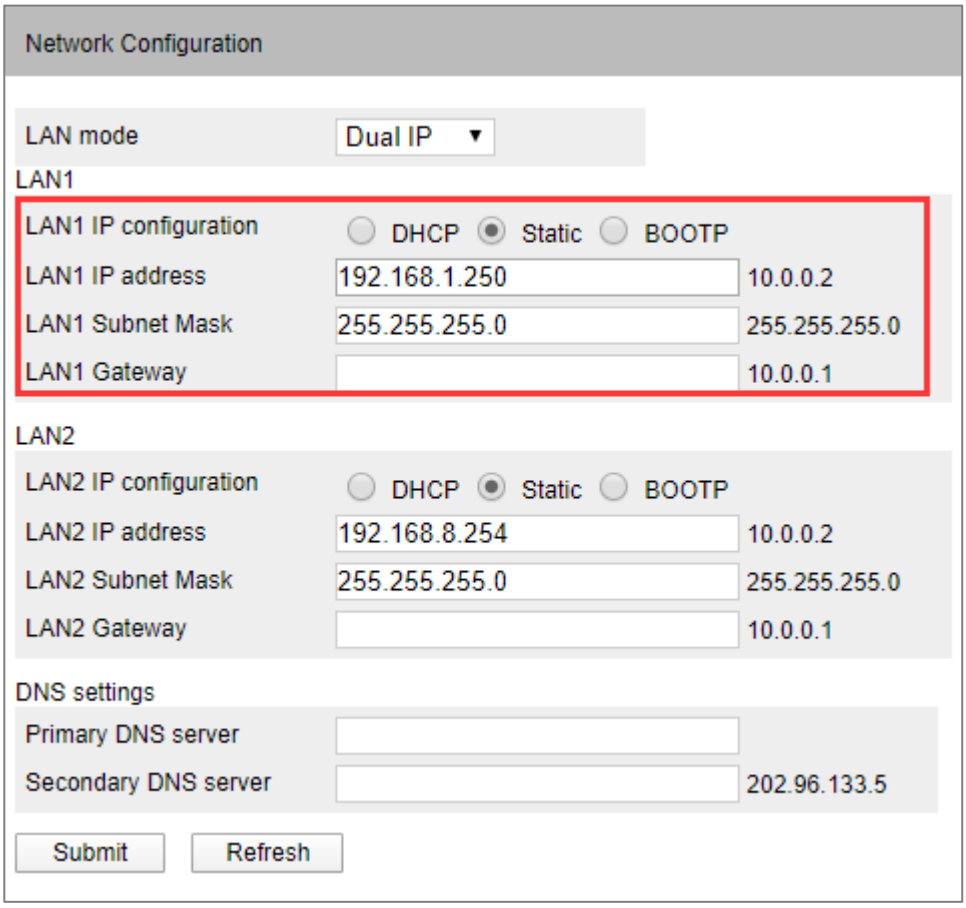
Operating Steps

Step 1 Configure the IP address of the serial server.

1 Login in the Web configuration interface, choose "Network Setting".

2 In the "Network port 1" area, select "Network port 1 Configuration" as "Manual Setting", and enter the corresponding network address information such as "Network port 1 Address", "Network port 1 Subnet Mask" and "Network port 1 Gateway".

3 Other parameters remain the default, click "Submit".

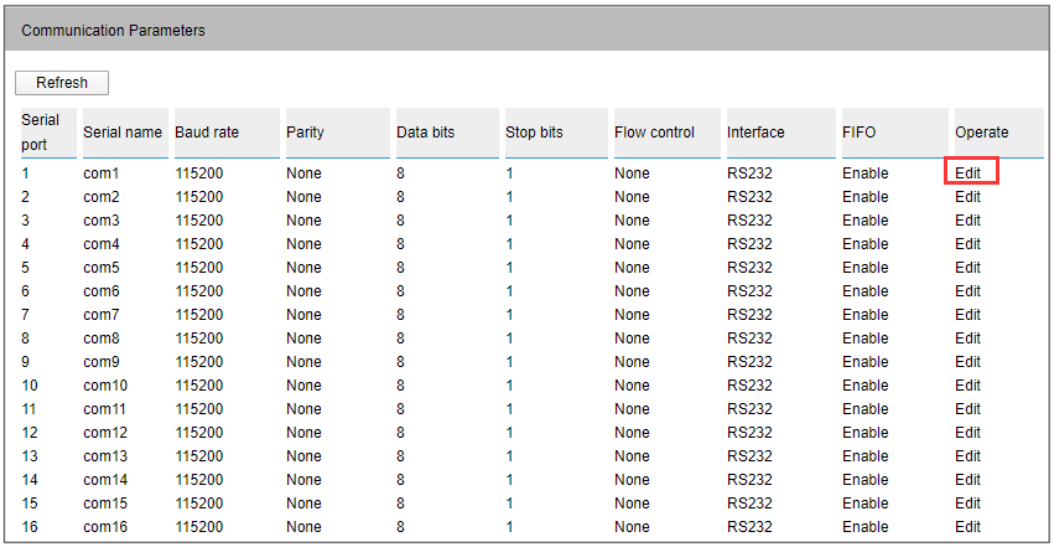


Step 2 Configure the serial port parameter information.

1 Log in to the Web configuration interface and select "Serial Settings".

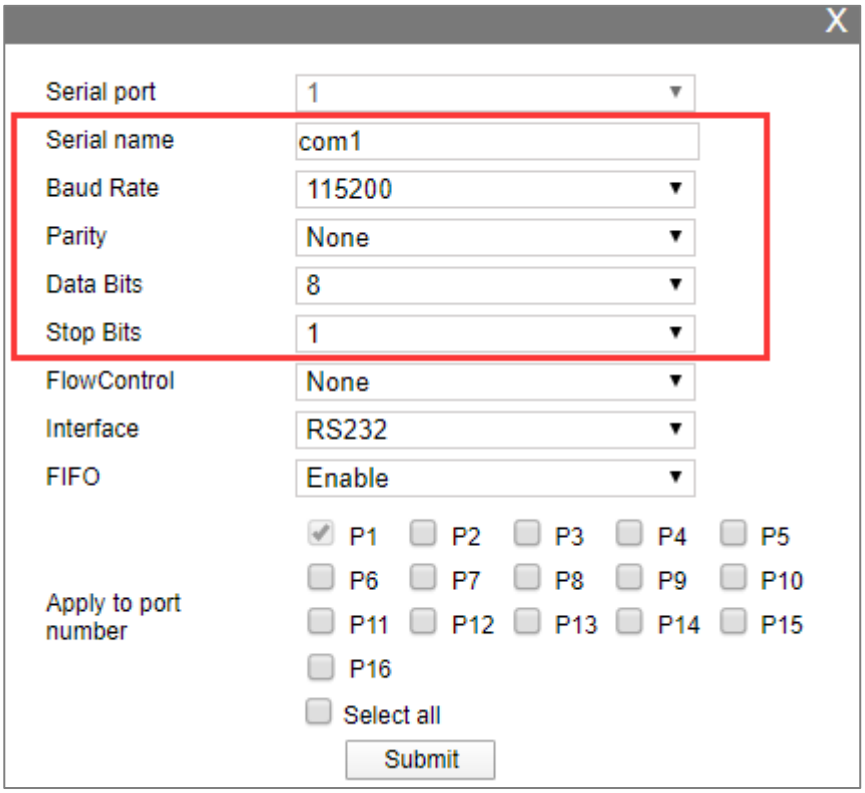
2 In the serial port 1 entry, click the "Edit" button under the operation, as shown in the following figure.

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Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

3 In the “Edit” window, set “baud rate”, “parity bit”, “data bit” and “stop bit” respectively, as shown in the following figure.



4 Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the serial server.

1 Click the "Work Mode" drop-down list box and select "TCP Client Mode".

2 Click “session number” drop-down list box, and select “1 “ to establish one session connection.

3 Enter the host PC's IP address "192.168.1.61" in the destination address text

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box.

4 Enter the host PC's local port number, 31000, in the destination port text box.

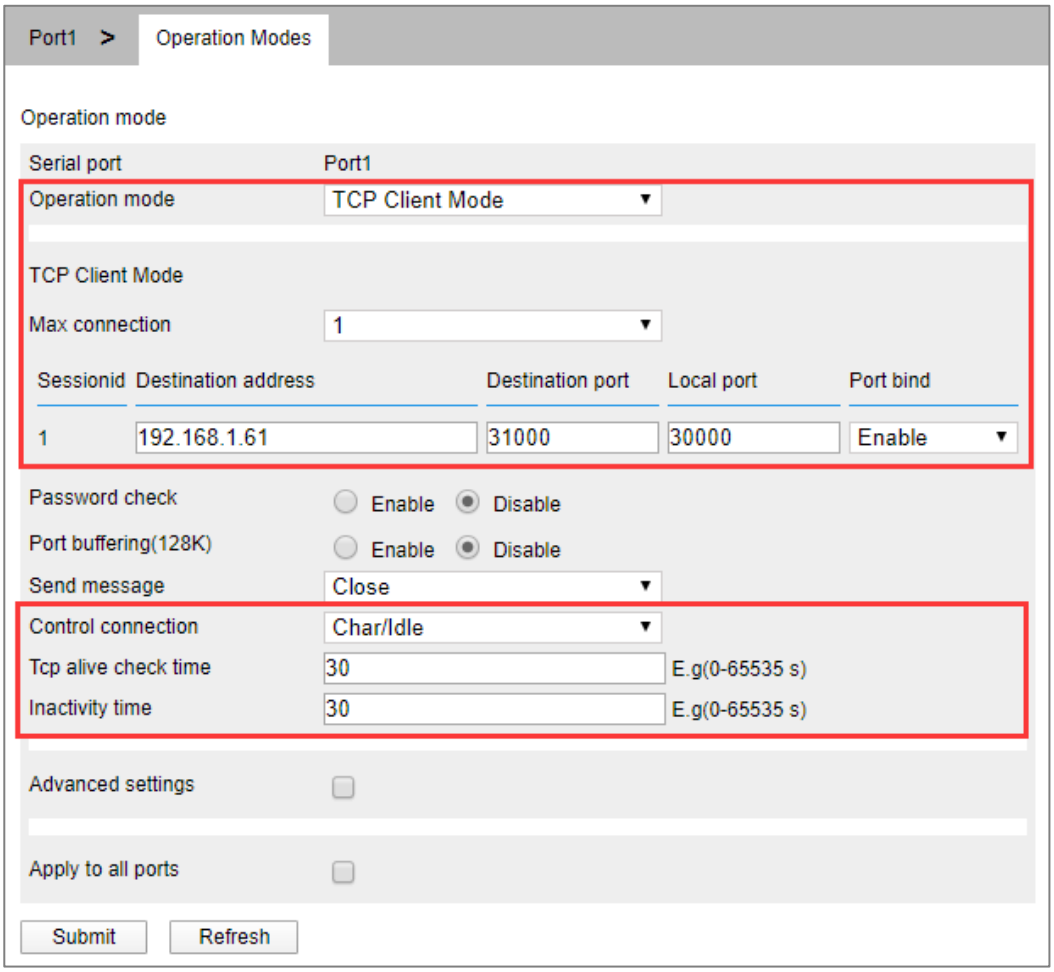
5 In the “port fixed” drop-down list, select “Enable”.

6 Enter the local port number "30000" of the serial server in the "Local port" text box.

7 Select “Char/Idle” in the drop-down list of “Connection Control”.

8 Enter "30" in the "TCP Alive Time" and "TCP Timeout" text boxes.

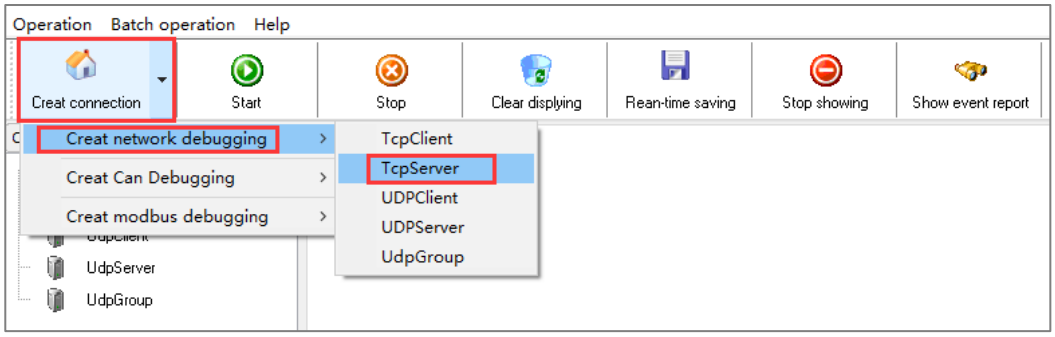
9 Other parameters remain the default, click "Submit".



Step 4 Run the "DebugTool" software to create a TCP server for the host.

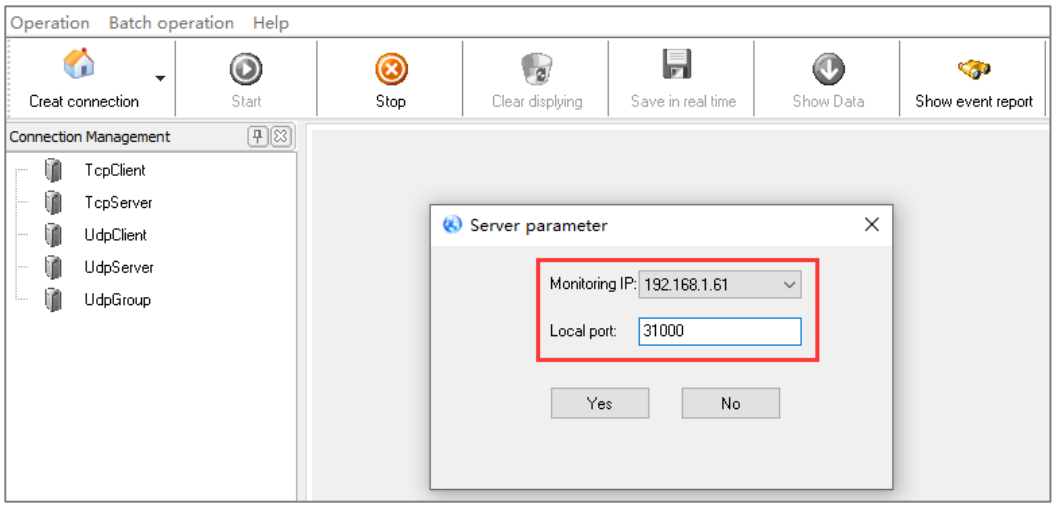
1 Install and run “Debug Assistant” software, click “create connection” drop-down list, and select “Create Network Debug > UDPServer”.

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2 In the “Monitoring IP” drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the TCP server).

3 In the "Local Port" text box, enter the local port "31000" of the host PC (that is, the TCP server) and click "OK".



4 Select the TcpServer connection you created and click “Start”.



Step 5 Run "ComTest" and "DebugTool" software synchronously to test the communication between serial server (i.e. TCP client) and host PC (i.e. TCP server).

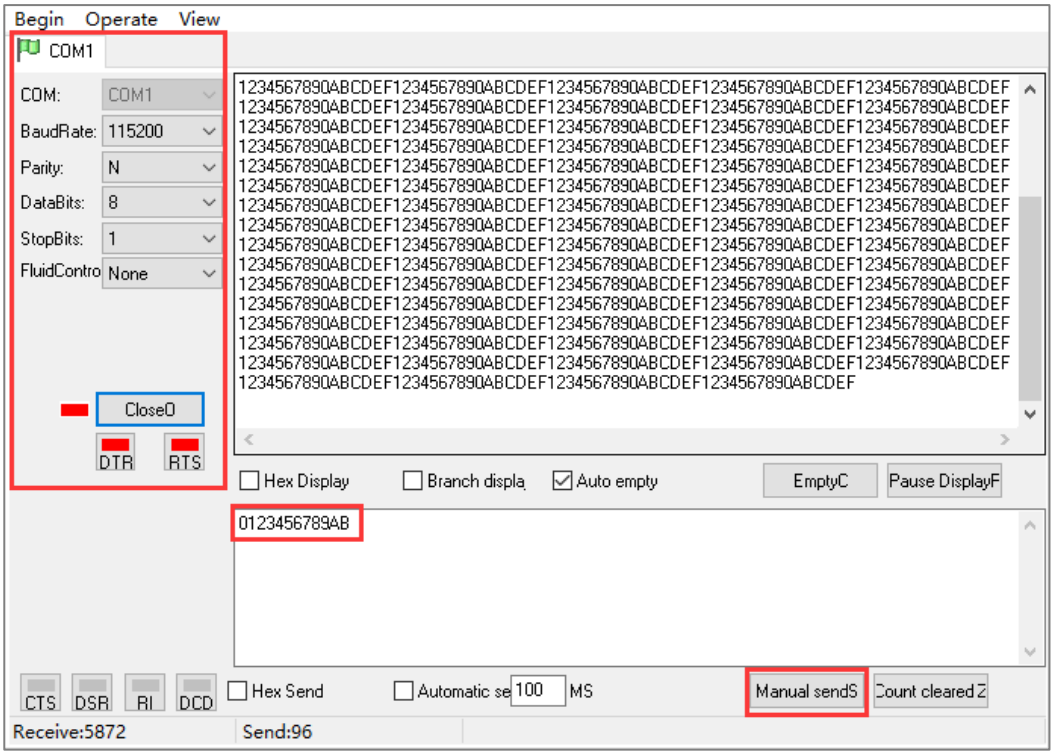
1 Install and run "ComTest" software, and click "Add Window" in the "Start" menu.

2 Add serial port "COM1" window, and configure serial port number, baud rate, check bit and data bit and other parameters consistent with "serial port

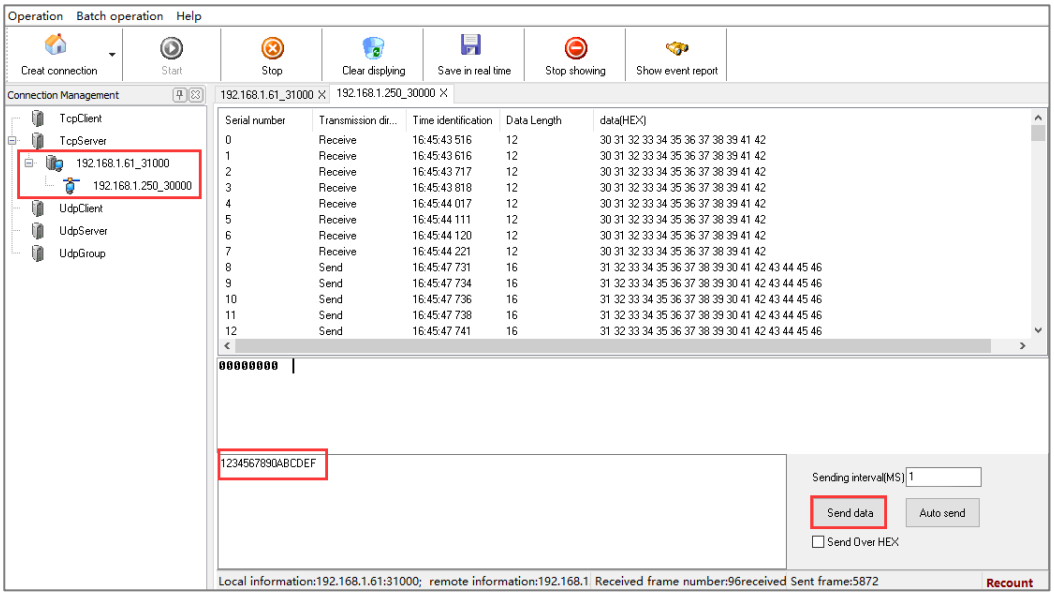
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configuration" of WEB interface.

3 Open the serial port signal of "COM1", for example, enter the serial port information "0123456789AB", and click "send manually".



4 Run the “DebugTool” software and view the serial port information received by the host PC in the TcpServer option box. Similarly, the host PC can also send messages to serial port devices.



Step 6 End.

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11.4 UDP Server Mode

Background Introduction

Assuming that the serial port "COM1" of the serial server is operating under "UDP server mode", passively waiting for one host PC to connect, and the host can read or send Ethernet data to a serial device. Compared with TCP mode, UDP protocol is faster and more efficient.

The parameters of the serial server (UDP server) are as follows:

- IP address: 192.168.1.250
- Local Port: 30000
- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Host PC (UDP client mode) parameter information as follow:

- IP address: 192.168.1.61
- Local Port: 31000

Operating Steps

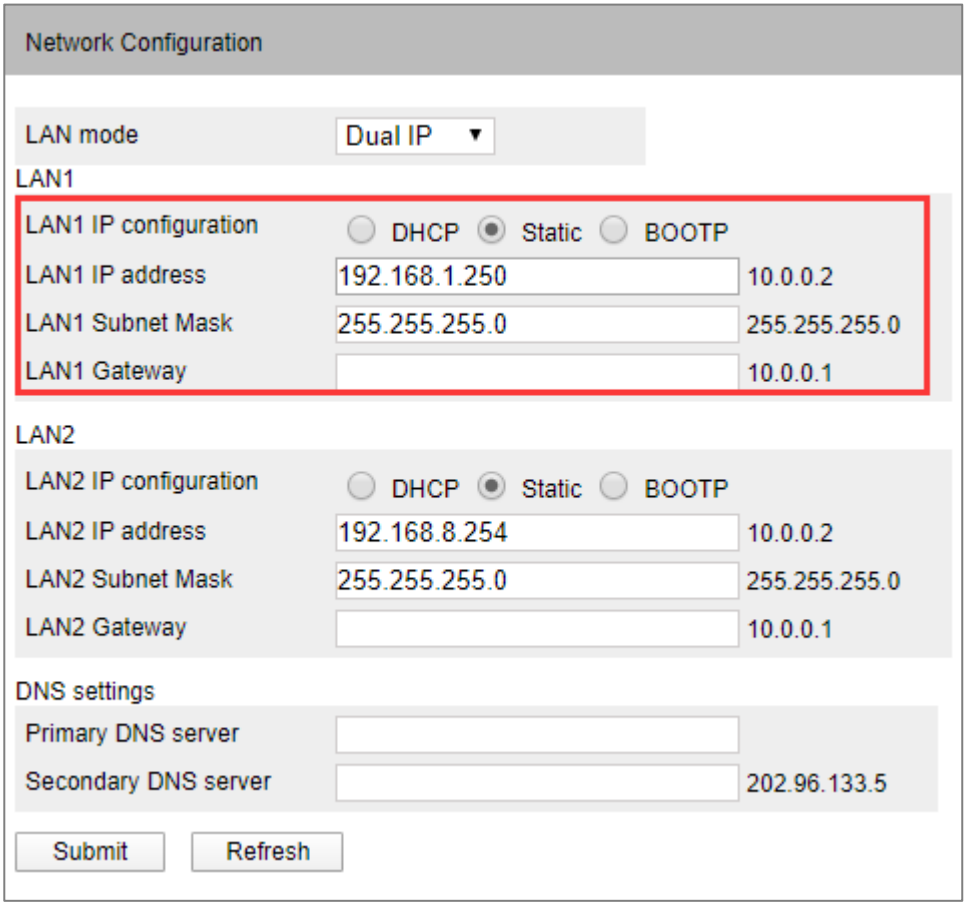
Step 1 Configure the IP address of the serial server.

1 Login in the Web configuration interface, choose "Network Setting".

2 In the "Network port 1" area, select "Network port 1 Configuration" as "Manual Setting", and enter the corresponding network address information such as "Network port 1 Address", "Network port 1 Subnet Mask" and "Network port 1 Gateway".

3 Other parameters remain the default, click "Submit".

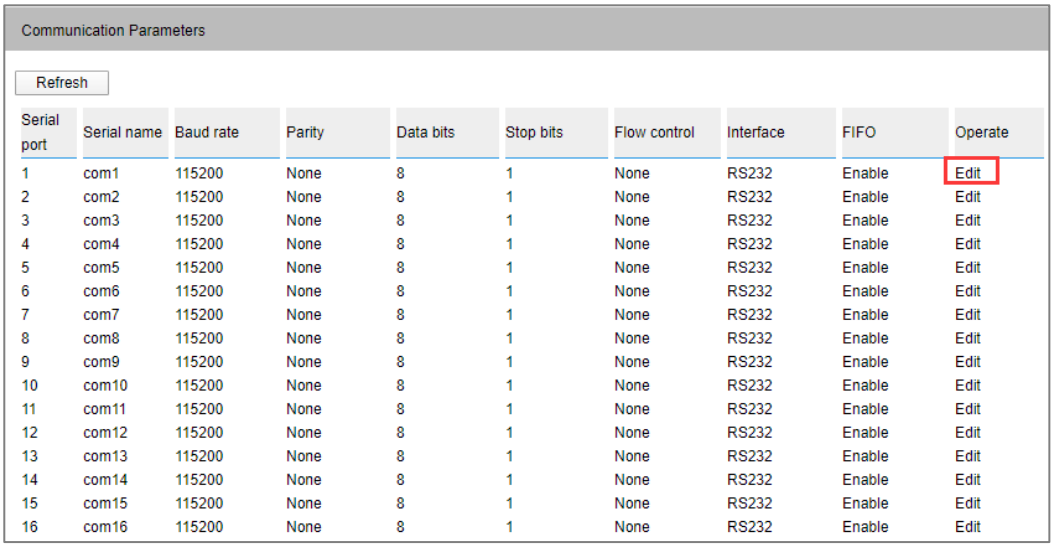
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Step 2 Configure the serial port parameter information.

1 Log in to the Web configuration interface and select "Serial Settings".

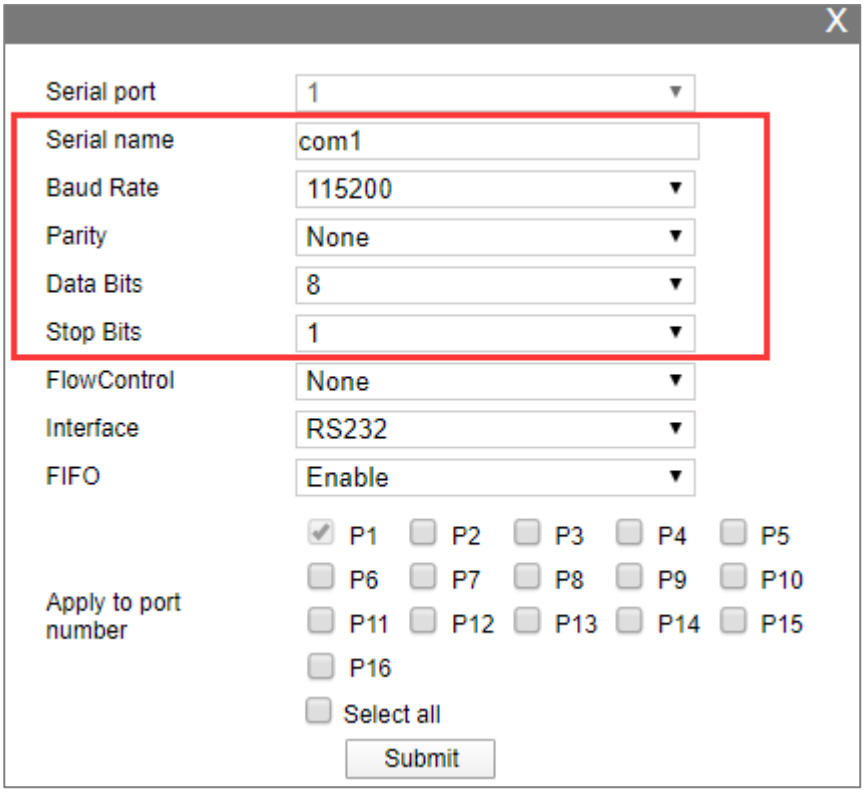
2 In the serial port 1 entry, click the "Edit" button under the operation, as shown in the following figure.



Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

3 In the “Edit” window, set “baud rate”, “parity bit”, “data bit” and “stop bit” respectively, as shown in the following figure.

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4 Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the serial server.

1 Log in to the WEB configuration interface and select "COM mode > Port1".

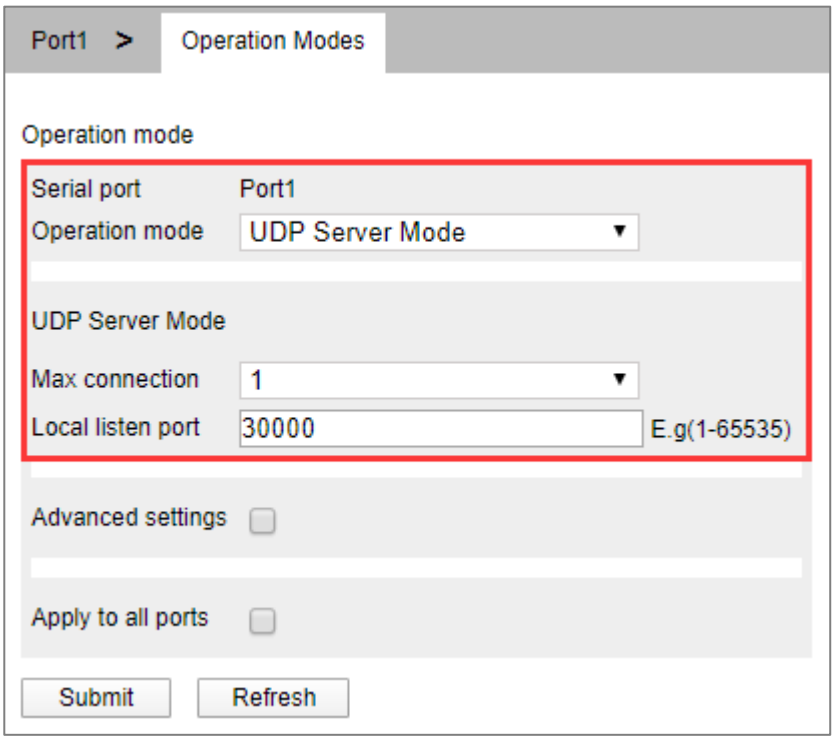
2 Click the "Work Mode" drop-down list box and select "UDP Server Mode".

3 Click "Session Number" drop-down list box, select "1".

4 Enter "30000" in the "Listen port" text box.

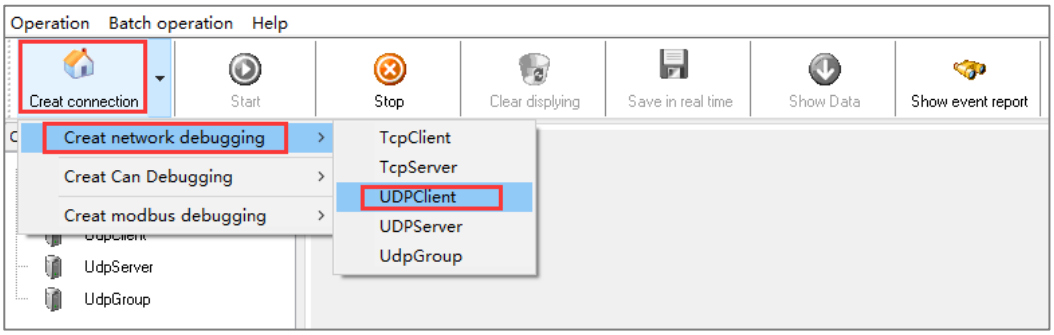
5 Other parameters remain the default, click "Submit".

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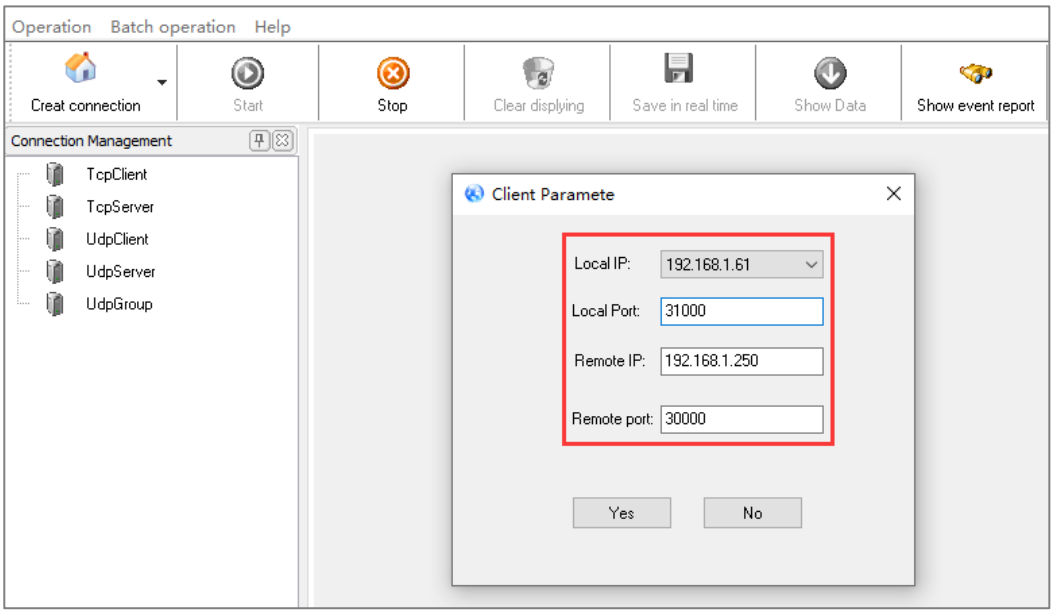
Step 4 Run the "DebugTool" software to create a UDP client for the host.

1 Install and run "DebugTool" software, click "create connection" drop-down list box, and select "create network debugging > UDPClient".



2 In the "Local IP" drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the UDP client).

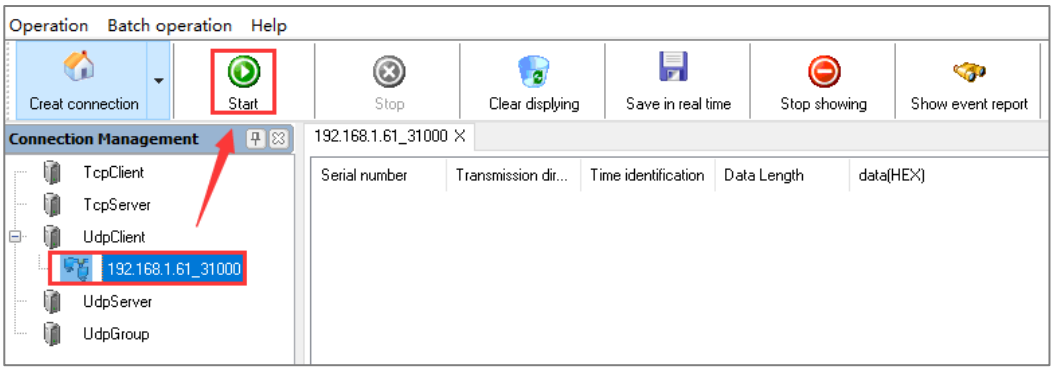
3 Enter the port number "31000" for the host PC (that is, the UDP client) in the "Local Port" text box.



4 Enter the IP address "192.168.1.250" of the serial server (that is, the UDP server) in the "Remote IP" text box.

5 In the “Remote Port” text box, enter the port number “30000” for the serial server (that is, the UDP server), and click “OK”.

6 Choose the UDPClient connection you created, click "Start".



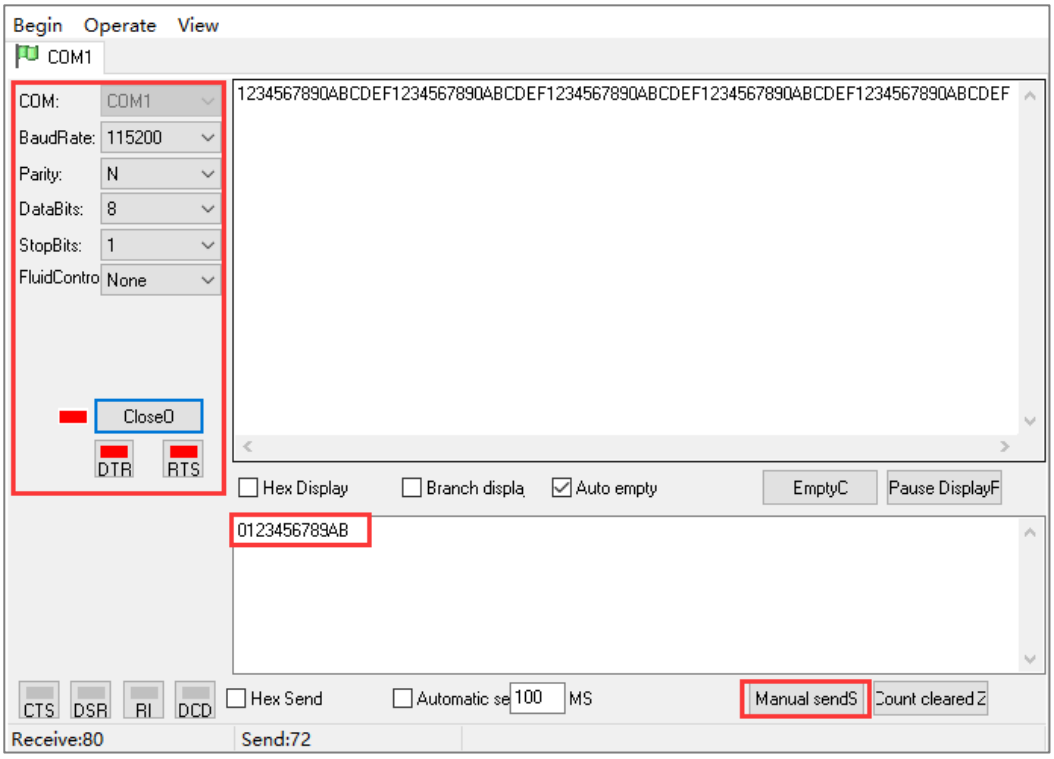
Step 5 Run "ComTest" and "DebugTool" software synchronously to test the communication between serial server (i.e. UDP server) and host PC (i.e. UDP Client).

1 Install and run "ComTest" software, and click "Add Window" in the "Start" menu.

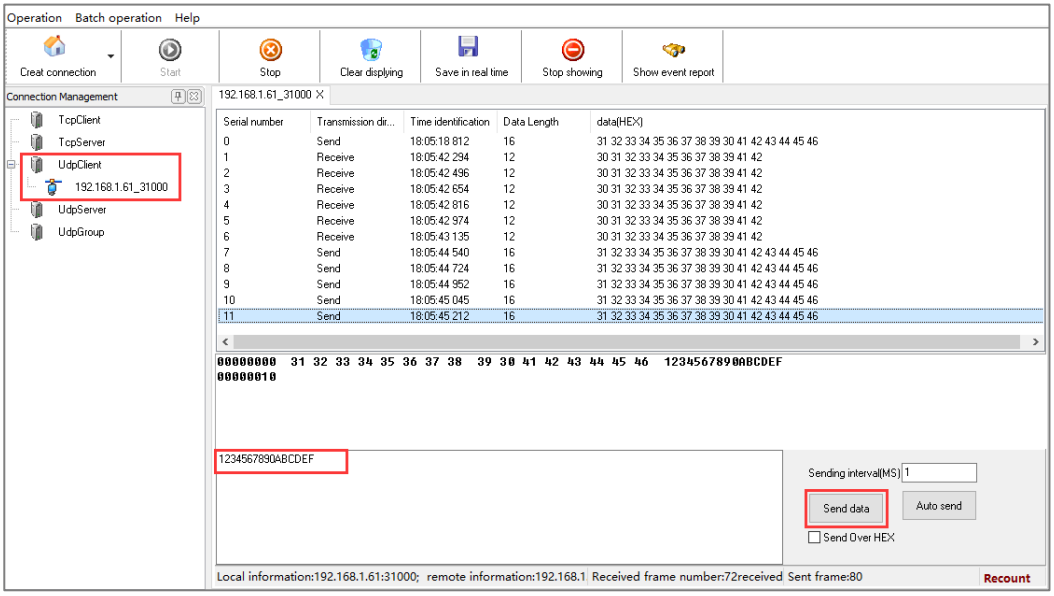
2 Add serial port "COM1" window, and configure serial port number, baud rate, check bit and data bit and other parameters consistent with "serial port configuration" of WEB interface.

3 Open the serial port signal of "COM1", for example, enter the serial port information "0123456789AB", and click "send manually".

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4 Run the “DebugTool” software and view the serial information received by the host PC in the UDPClient option box. Similarly, the host PC can also send messages to serial port devices.



Step 6 End.

11.5 UDP Client Mode

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Background Introduction

Assuming that the serial port "COM1" of the serial server works in the "UDP client mode", it initiates a connection with a host PC, and the host can read or send Ethernet data to a serial device. Compared with TCP mode, UDP protocol is faster and more efficient.

The parameters of the serial server (UDP client) are as follows:

- IP address: 192.168.1.250
- Local Port: 30000
- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Host PC (UDP server mode) parameter information as follow:

- IP address: 192.168.1.61
- Local Port: 31000

Operating Steps

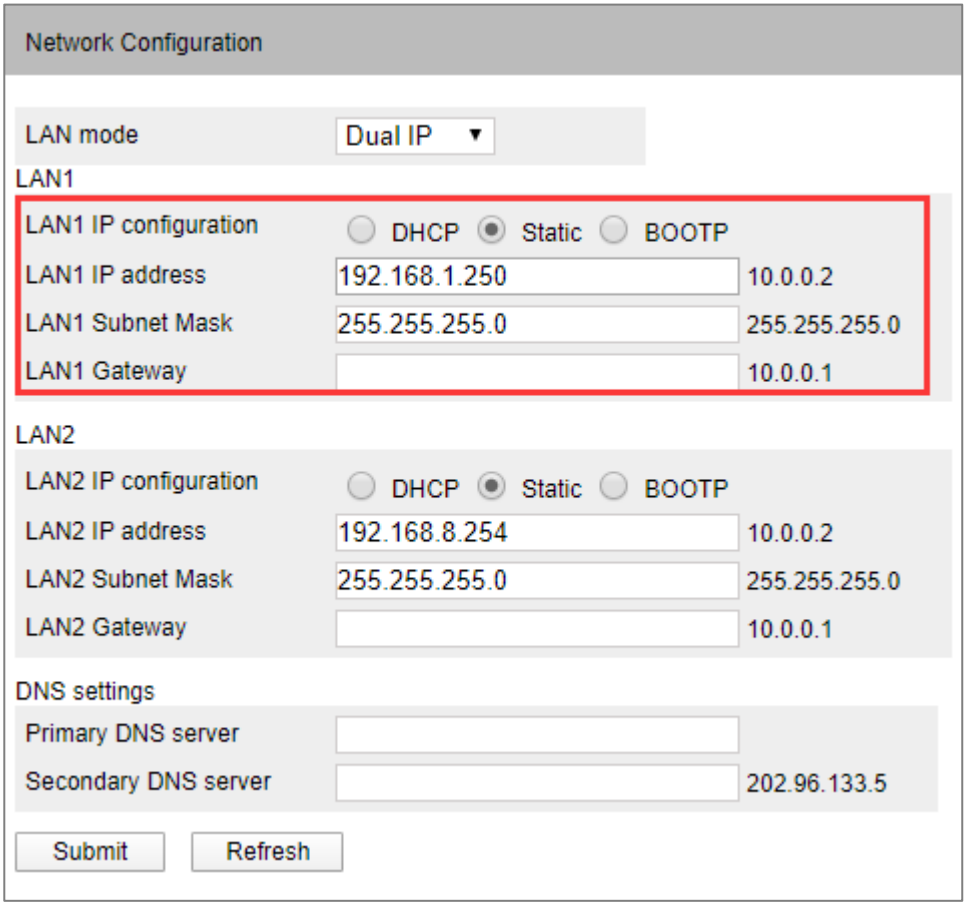
Step 1 Configure the IP address of the serial server.

1 Login in the Web configuration interface, choose "Network Setting".

2 In the "Network port 1" area, select "Network port 1 Configuration" as "Manual Setting", and enter the corresponding network address information such as "Network port 1 Address", "Network port 1 Subnet Mask" and "Network port 1 Gateway".

3 Other parameters remain the default, click "Submit".

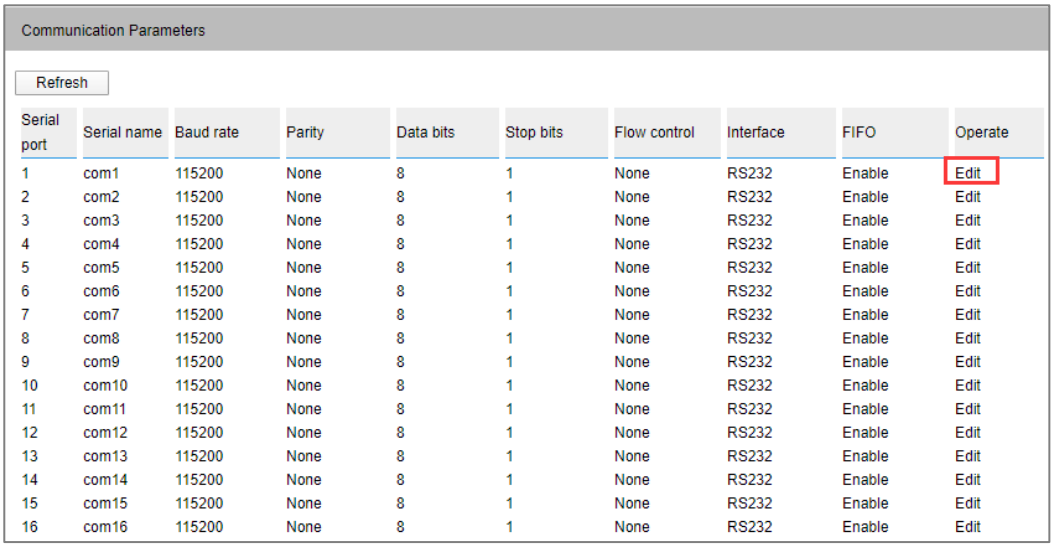
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Step 2 Configure the serial port parameter information.

1 Log in to the Web configuration interface and select "Serial Settings".

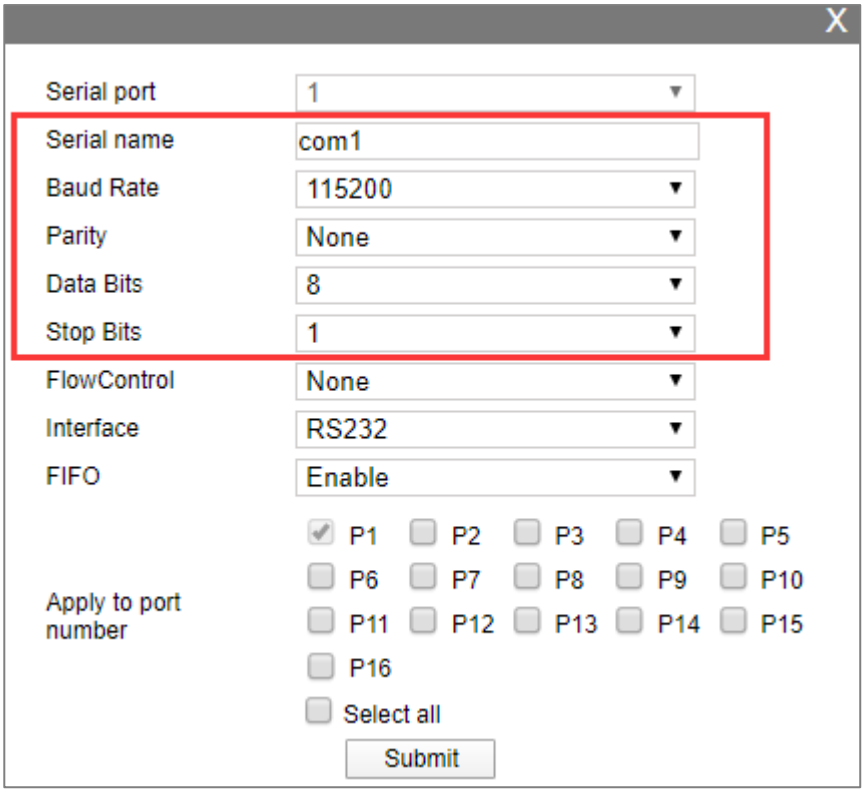
2 In the serial port 1 entry, click the "Edit" button under the operation, as shown in the following figure.



Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

3 In the “Edit” window, set “baud rate”, “parity bit”, “data bit” and “stop bit” respectively, as shown in the following figure.

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4 Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the serial server.

1 Log in to the WEB configuration interface and select "COM mode > Port1".

2 Click the "Work Mode" drop-down list box and select "UDP Client Mode".

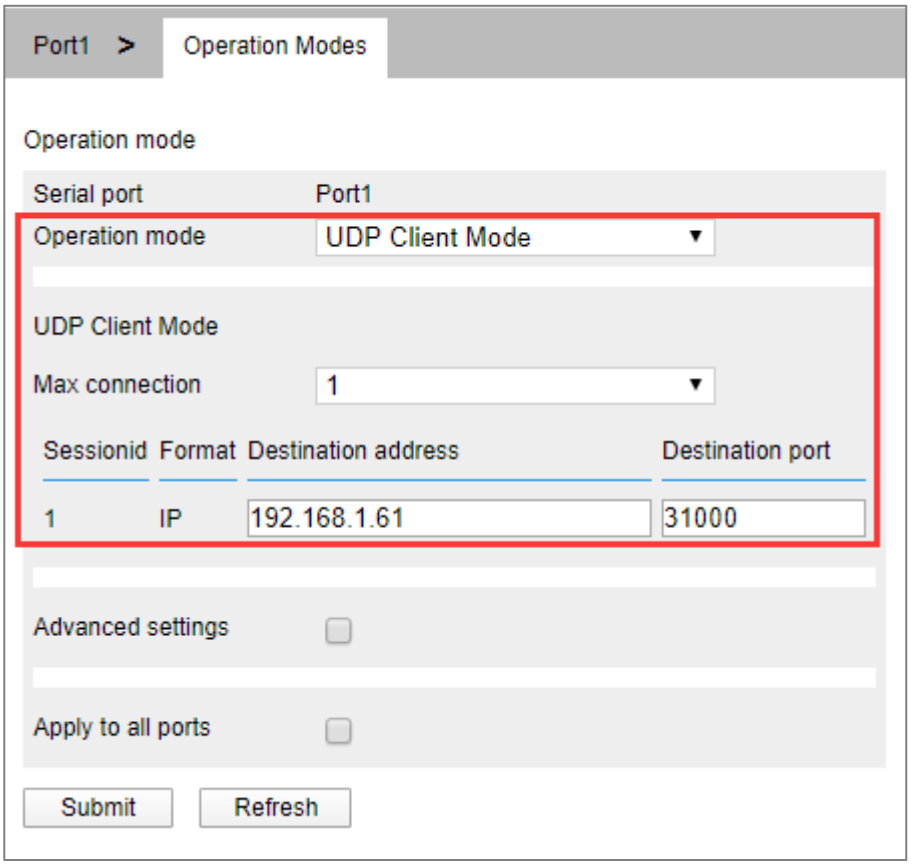
3 Click “session number” drop-down list box, and select “1 “ to establish one session connection.

4 Enter the host PC's IP address "192.168.1.61" in the destination address text box.

5 Enter the host PC's local port number, 31000, in the destination port text box.

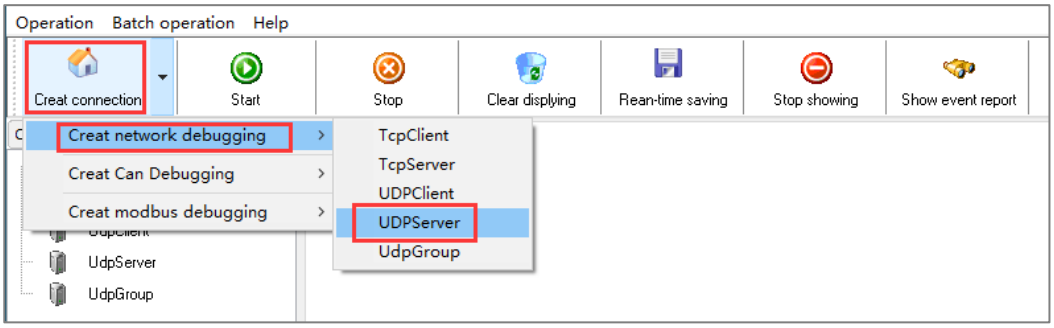
6 Other parameters remain the default, click "Submit".

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Step 4 Run the "DebugTool" software to create a UDP server for the host.

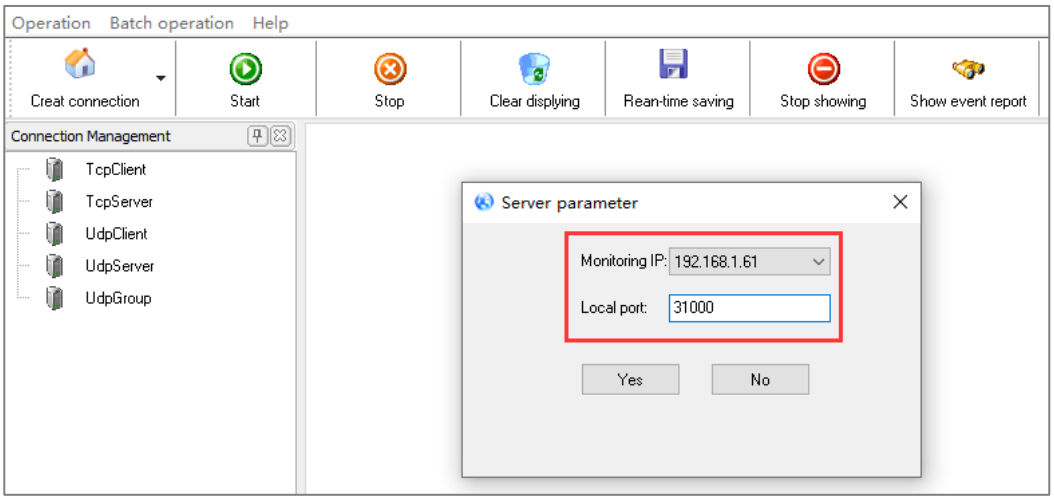
1 Install and run "DebugTool" software, click "create connection" drop-down list box, and select "Create network debugging > UDPServer".



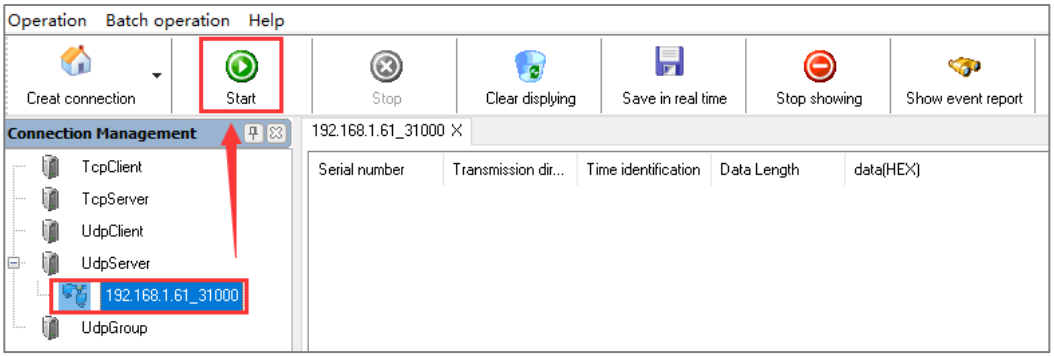
2 In the “Monitoring IP” drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the UDP server).

3 In the “Local Port” text box, enter the local port "31000" for the host PC (that is, the UDP server) and click “OK”.

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4 Select the UdpServer connection you created and click start.



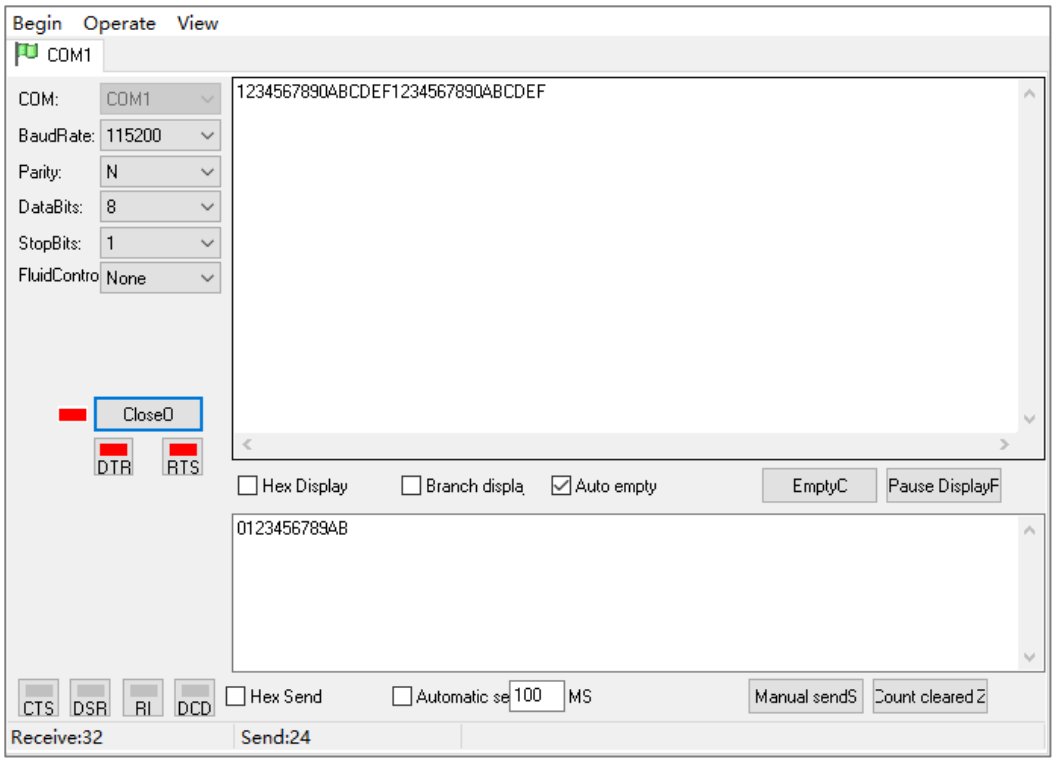
Step 5 Run "ComTest" and "DebugTool" software synchronously to test the communication between serial server (i.e. UDP client) and host PC (i.e. UDP server).

1 Install and run "ComTest" software, and click "Add Window" in the "Start" menu.

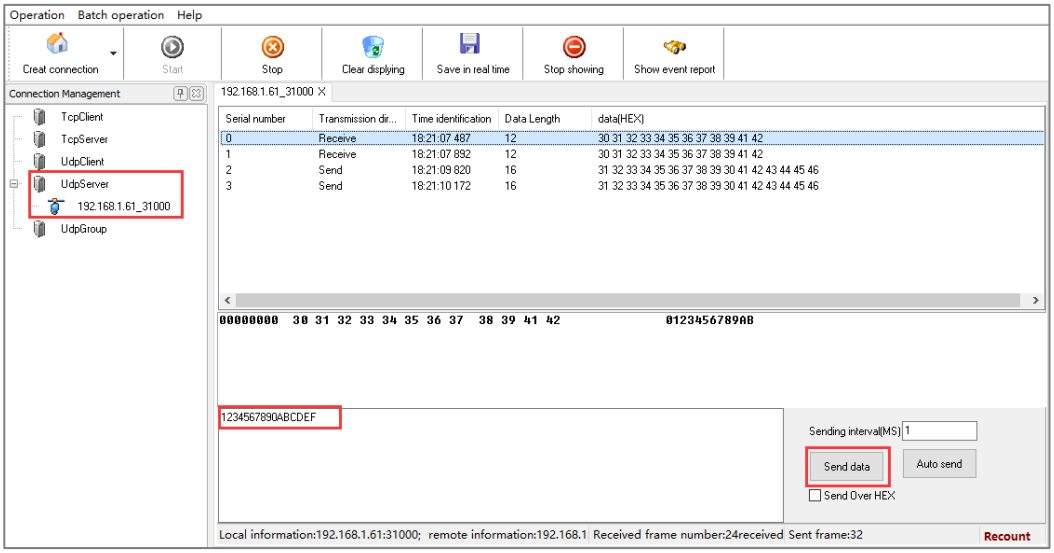
2 Add serial port "COM1" window, and configure serial port number, baud rate, check bit and data bit and other parameters consistent with "serial port configuration" of WEB interface.

3 Open the serial port signal of "COM1", for example, enter the serial port information "0123456789AB", and click "send manually".

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4 Run the “DebugTool” software and view the serial information received by the host PC in the TcpServer option box. Similarly, the host PC can also send messages to serial port devices.



Step 6 End.

11.6 UDP Rang Mode

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Background Introduction

When the routers and switches and other devices do not support multicast, but also need to achieve the multicast function, you can make the serial server in UDP rang mode. Assuming that the serial port COM1 of the serial device server is connected to the host computer, it needs to transmit the serial data to two hosts that specify the same network segment "192.168.1.61" to "192.168.1.62" through the UDP protocol at the same time.

The parameters of the serial server (UDP server) are as follows:

- IP address: 192.168.1.250
- Local Port: 30000
- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Host A (UDP client A) parameter information as follow:

- IP address: 192.168.1.61
- Local Port: 31000

Host B (UDP client B) parameter information as follow:

- IP address: 192.168.1.62
- Local Port: 31000

Operating Steps

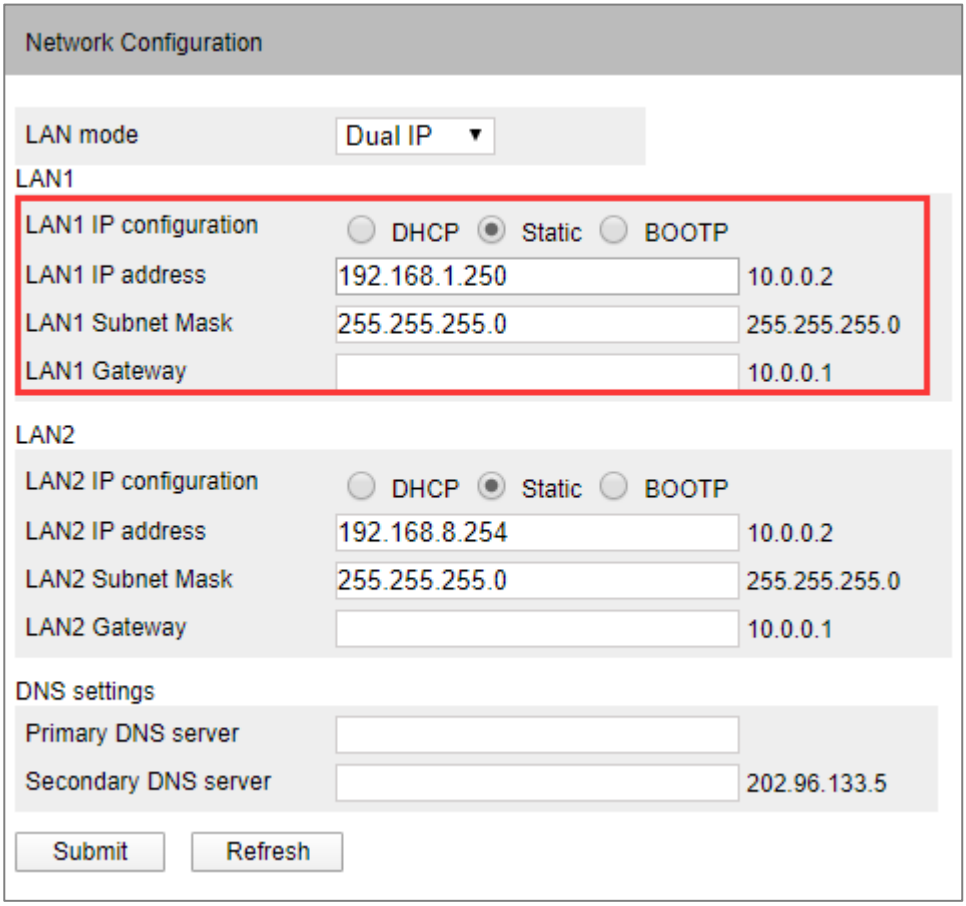
Step 1 Configure the IP address of the serial server.

1 Login in the Web configuration interface, choose "Network Setting".

2 In the "Network port 1" area, select "Network port 1 Configuration" as "Manual Setting", and enter the corresponding network address information such as "Network port 1 Address", "Network port 1 Subnet Mask" and "Network port 1 Gateway".

3 Other parameters remain the default, click "Submit".

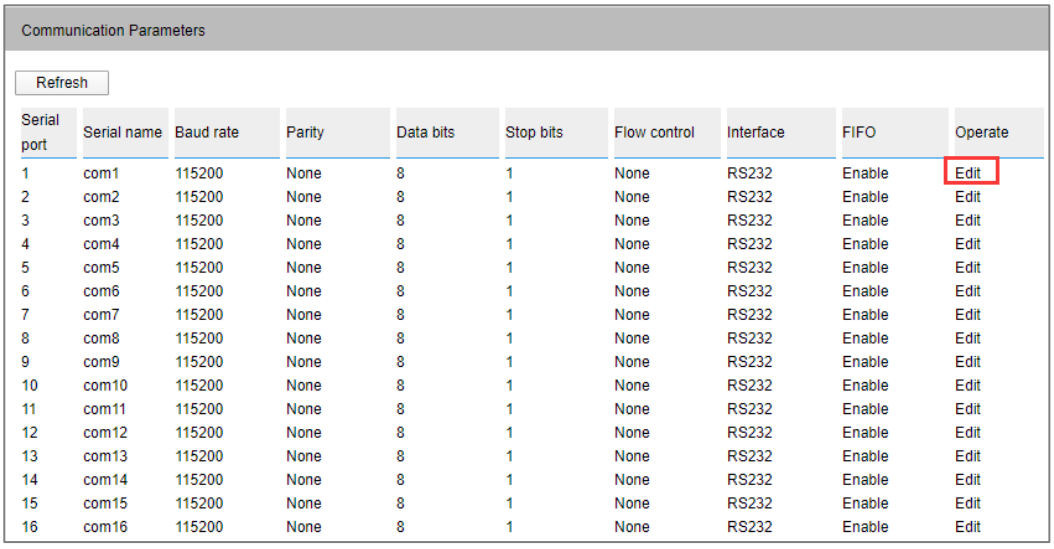
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Step 2 Configure the serial port parameter information.

1 Log in to the Web configuration interface and select "Serial Settings".

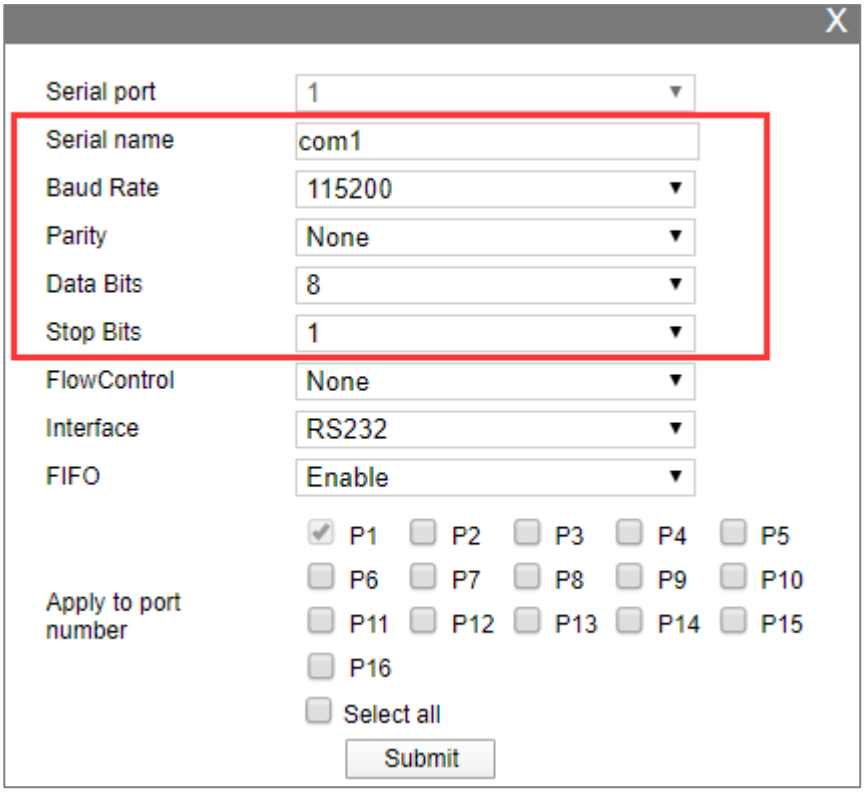
2 In the serial port 1 entry, click the "Edit" button under the operation, as shown in the following figure.



Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

3 In the “Edit” window, set “baud rate”, “parity bit”, “data bit” and “stop bit” respectively, as shown in the following figure.

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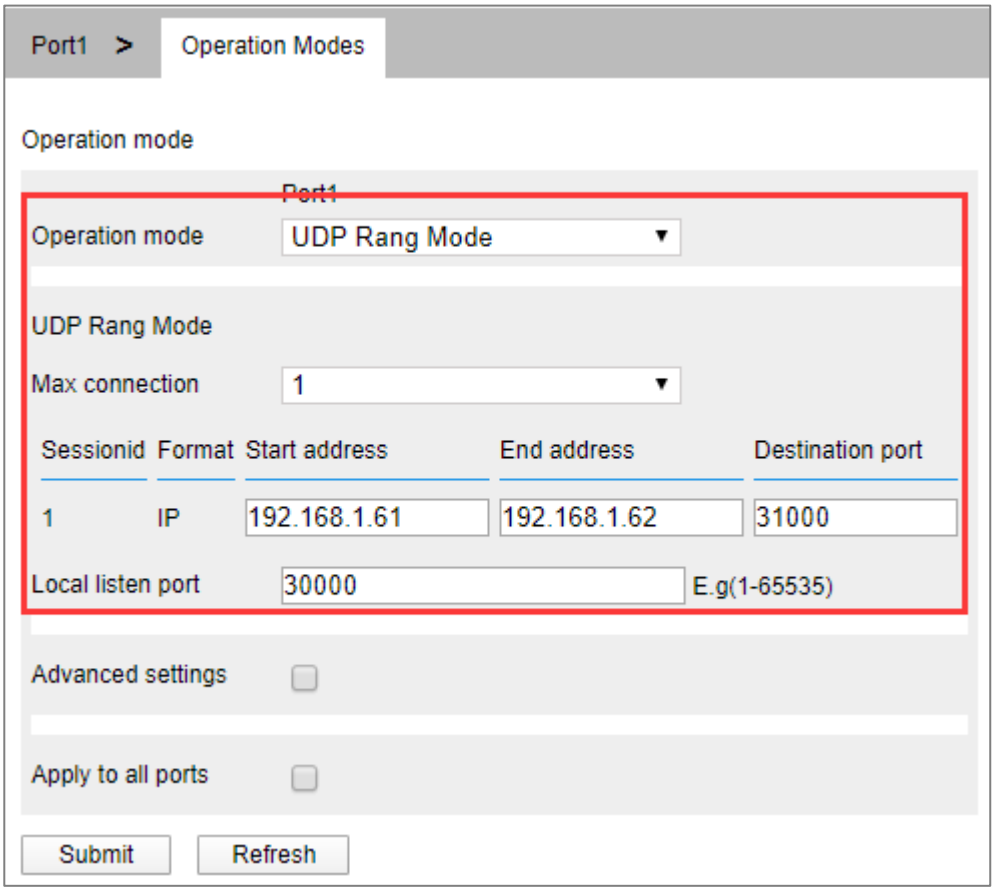


4 Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the serial server.

1 Log in to the WEB configuration interface and select "COM mode > Port1".

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2 Click the “Work Mode” drop-down list box and select “UDP Rang Mode”.

3 Click "Max Connection" drop-down list box, select "1".

4 In the "Start Address" and "End Address" text boxes, enter the IP address "192.168.1.61" of Host A and the IP address "192.168.1.62" of Host B, respectively.

5 Enter the port number "31000" of the host in the "Dest Port" text box.

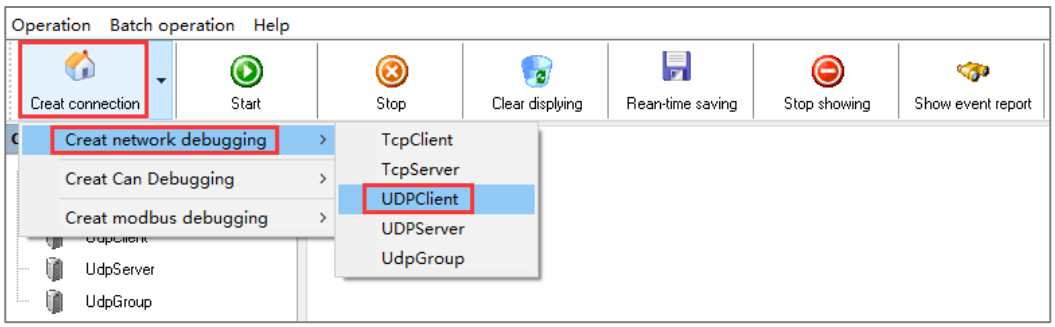
6 Enter the port number "30000" of the serial device server in the "Listen Port" text box.

7 Other parameters remain the default, click "Submit".

Step 4 Run "DebugTool" software on host A to create UDP client A.

1 Install and run "DebugTool" software, click "create connection" drop-down list box, and select "create network debugging > UDPClient".

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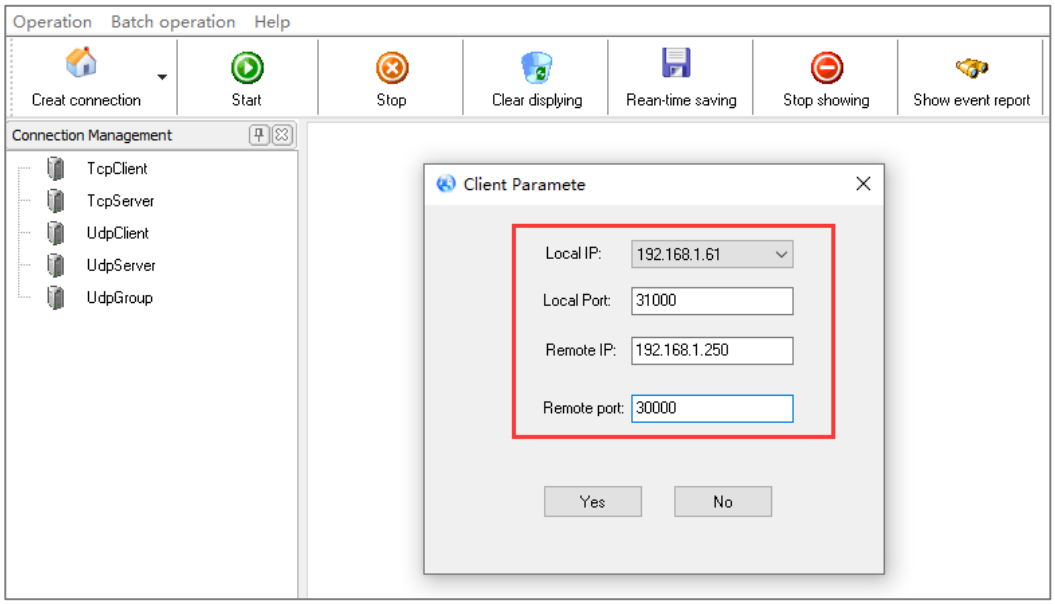


2 In the “Local IP” drop-down list box, select the IP address "192.168.1.61" of the host A (that is, the UDP client A).

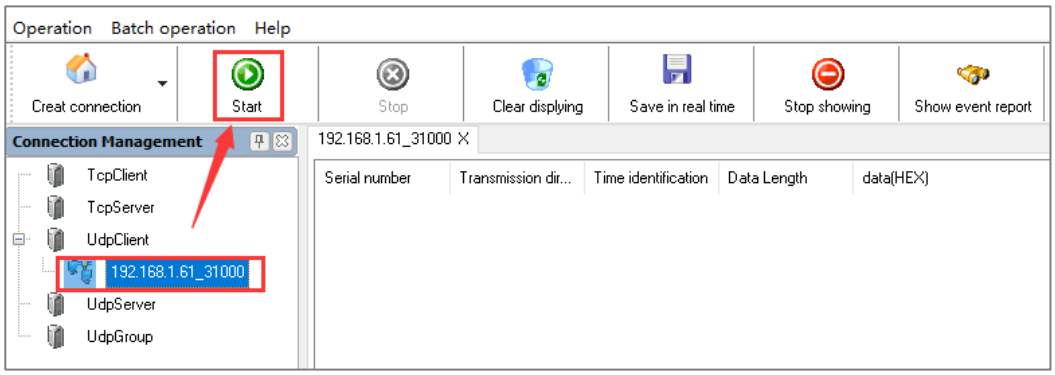
3 Enter the host A (Udp client A) port "31000" on the "Local Port" text box.

4 Enter the IP address "192.168.1.250" of the serial server (that is, the UDP server) in the "Remote IP" text box.

5 In the “Remote Port” text box, enter the port number “30000” for the serial server (that is, the UDP server), and click “OK”.



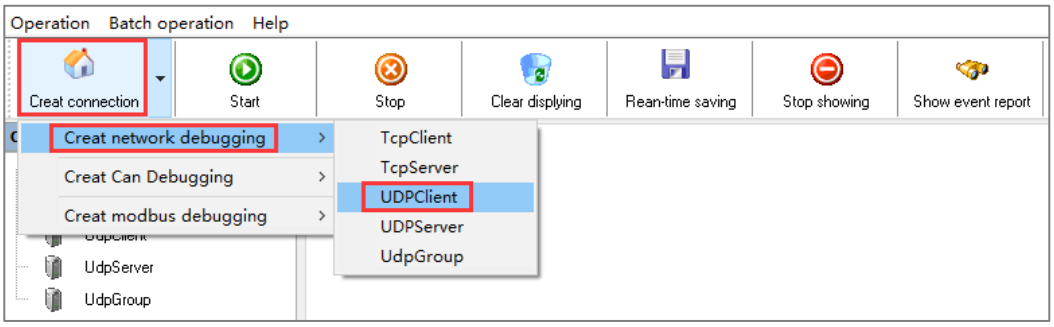
6 Choose the UDPClient connection you created, click "Start".



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Step 5 Run the debug "3onedata Debugging Assistant" on host B to create UDP client B.

1 To install and run "Debug Tool" Software, click “Create Connection” drop-down list box and choose “Create Network Debugging> UDP Client”.

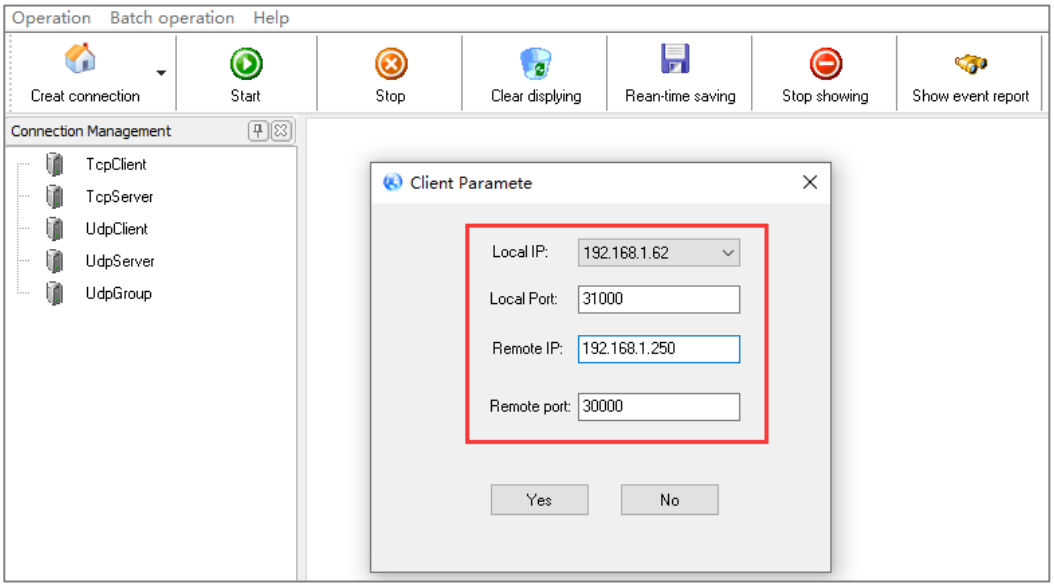


2 On the pop-up "Local IP" drop-down list box, choose the IP address of host B (UDP client B) "192.168.1.62".

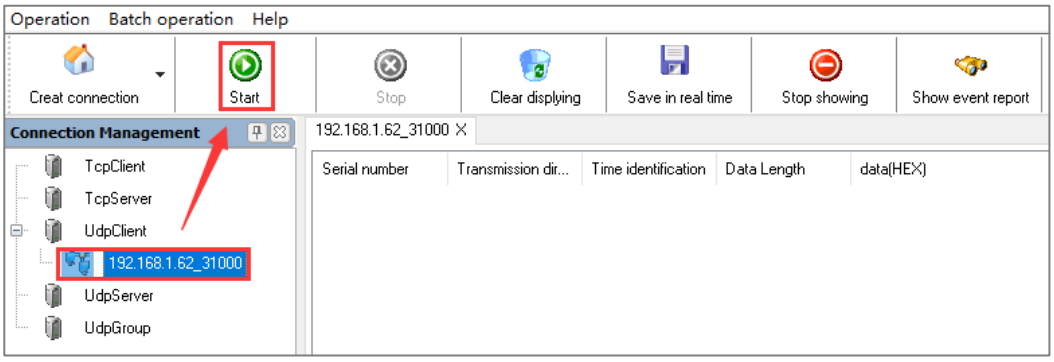
3 Enter the host B (Udp client B) port "31000" on the "Local Port" text box.

4 Enter the IP address "192.168.1.250" of the serial server (that is, the UDP server) in the "Remote IP" text box.

5 In the “Remote Port” text box, enter the port number “30000” for the serial server (that is, the UDP server), and click “OK”.



6 Choose the UDPClient connection you created, click "Start".

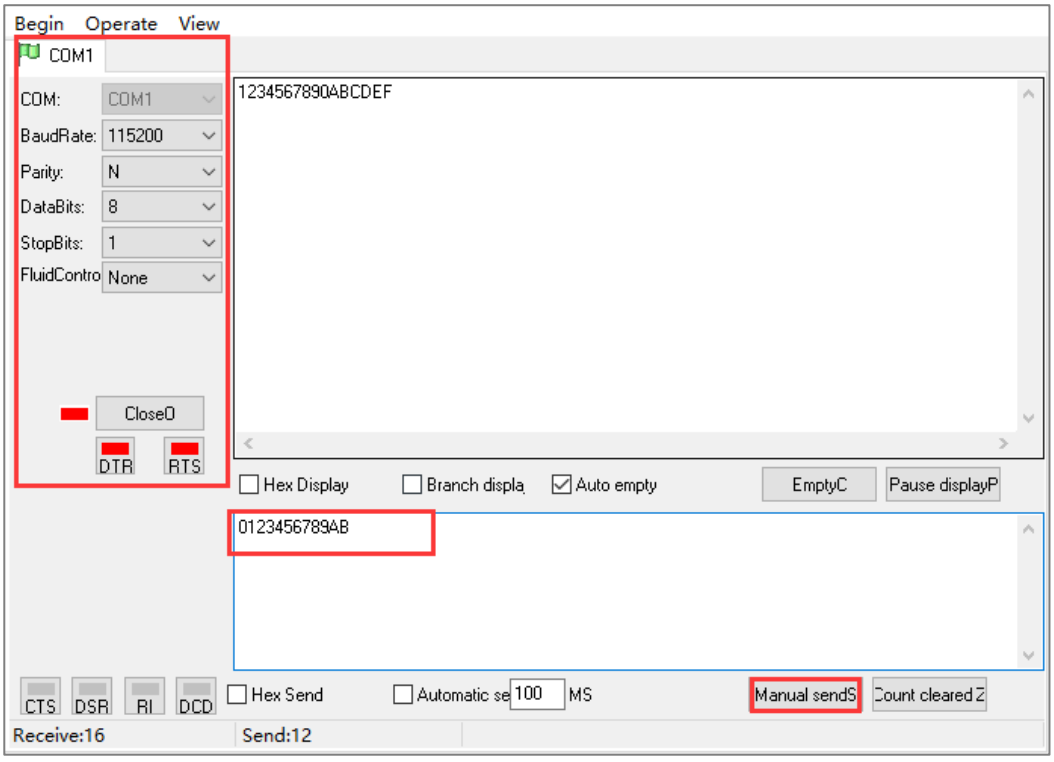


Step 6 Run "ComTest" and "DebugTool" software synchronously to test the communication between serial server and host A and host B.

1 Install and run "ComTest" software, and click "Add Window" in the "Start" menu.

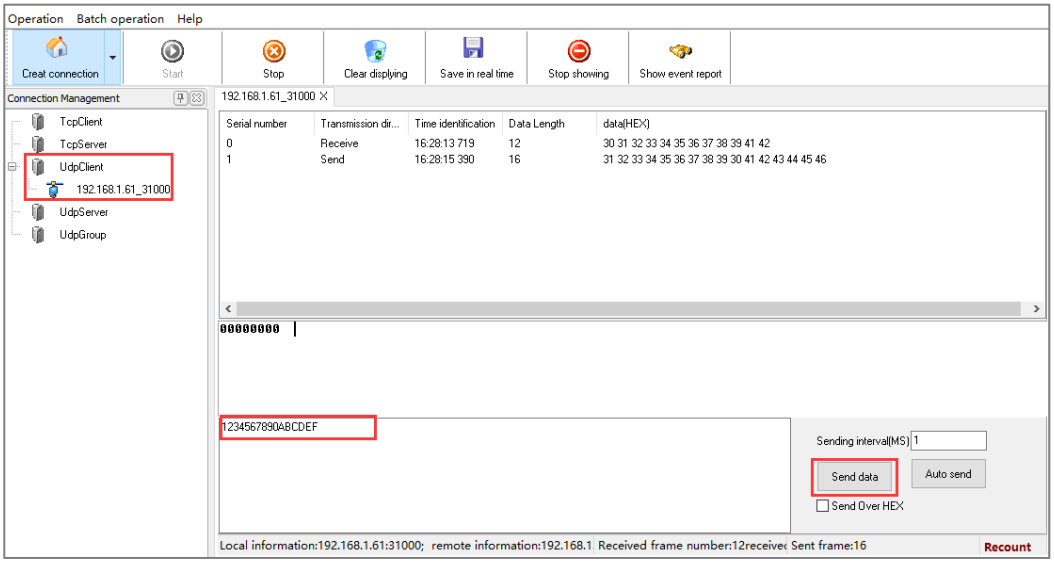
2 Add serial port "COM1" window, and configure serial port number, baud rate, check bit and data bit and other parameters consistent with "serial port configuration" of WEB interface.

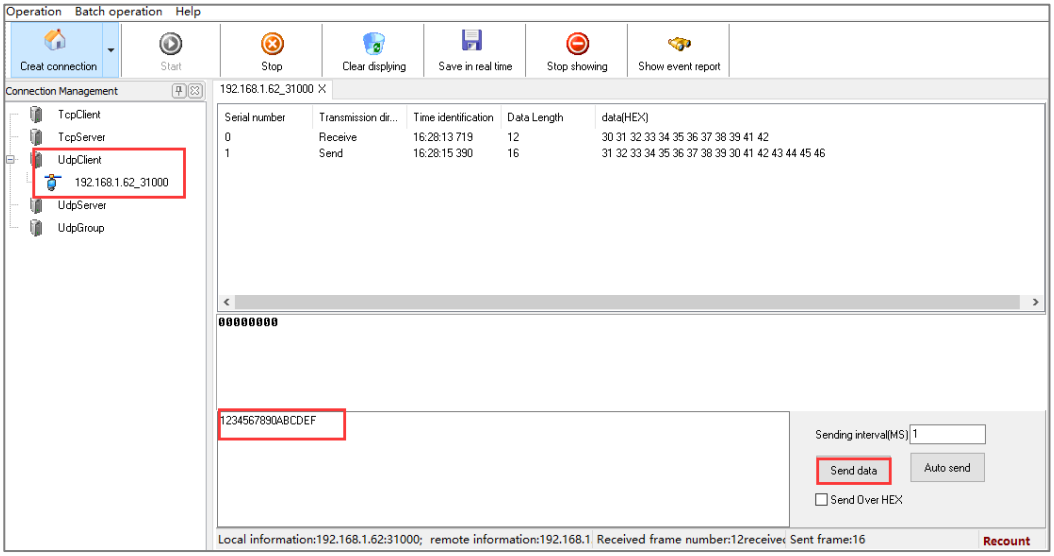
3 Open the serial port signal of "COM1", for example, enter the serial port information "0123456789AB", and click "send manually".



4 Run the “DebugTool” software and view the serial information received by the host A and host B in the UDPClient option box. Similarly, host A and host B can also send information to the serial device.

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Step 7 End.

11.7 UDP Multicast Mode

Background Introduction

If the serial server IP address is "192.168.1.250", user needs to add the serial server to the multicast address "239.0.0.0". So that the serial server through the UDP protocol can make the serial device data through unicast or multicast sent to one or more hosts, but also can receive from one or more host unicast or multicast data, complete multipoint-to-multipoint communication.

The parameters of the serial server are as follows:

- IP address: 192.168.1.250

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- Local Port: 30000
- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Host PC parameter information as follow:

- IP address: 192.168.1.61
- Local Port: 31000

Operating Steps

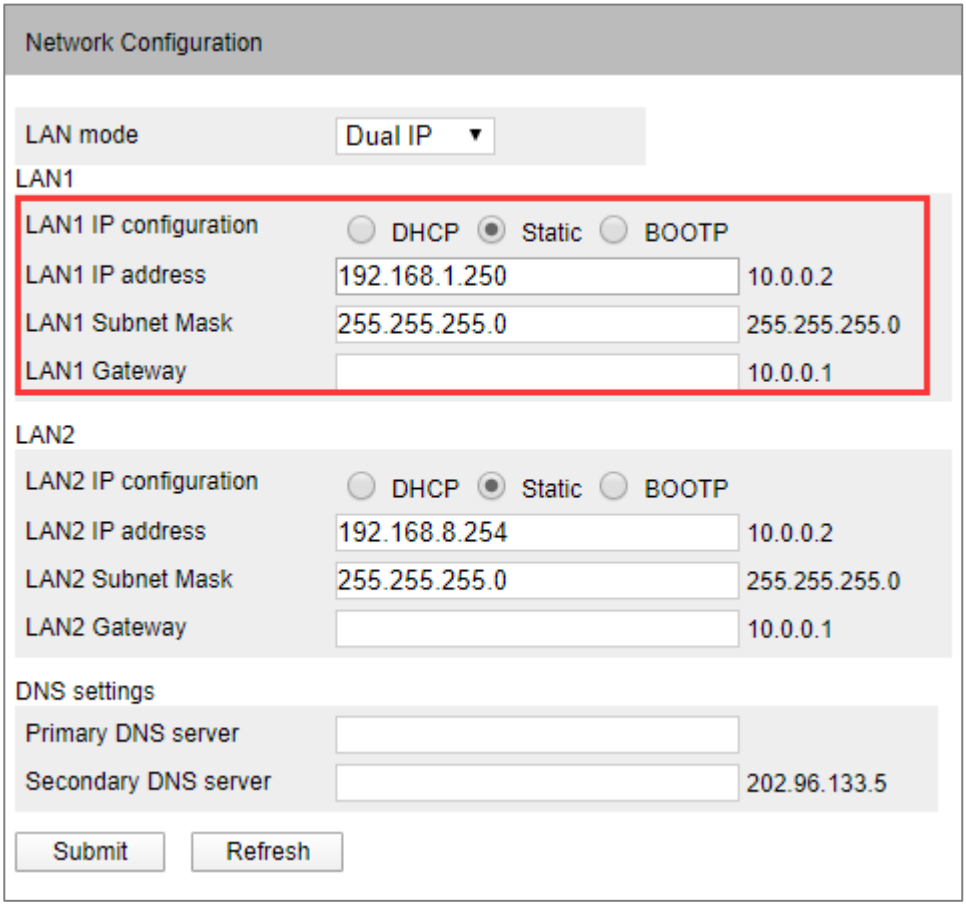
Step 1 Configure the IP address of the serial server.

1 Login in the Web configuration interface, choose "Network Setting".

2 In the "Network port 1" area, select "Network port 1 Configuration" as "Manual Setting", and enter the corresponding network address information such as "Network port 1 Address", "Network port 1 Subnet Mask" and "Network port 1 Gateway".

3 Other parameters remain the default, click "Submit".

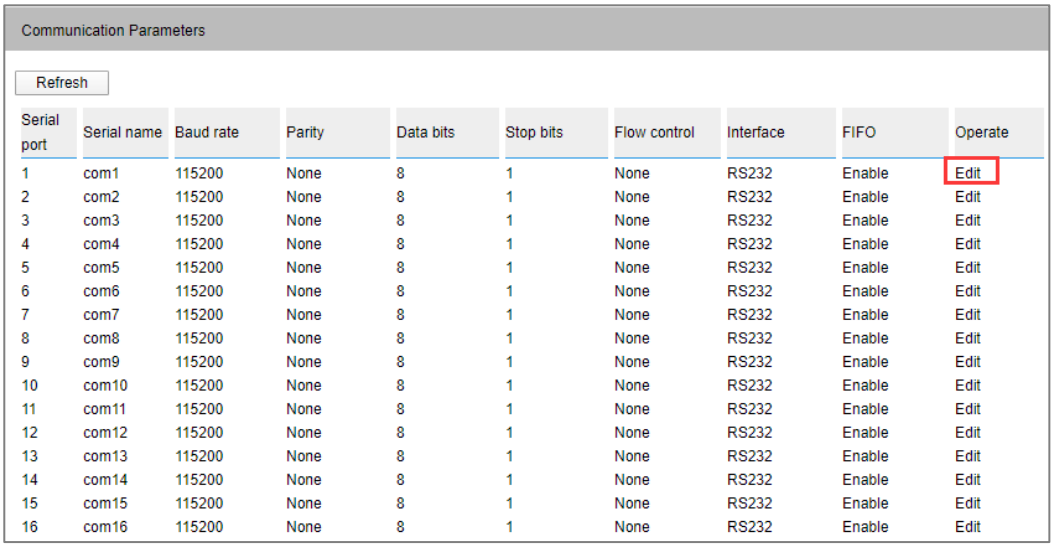
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Step 2 Configure the serial port parameter information.

1 Log in to the Web configuration interface and select "Serial Settings".

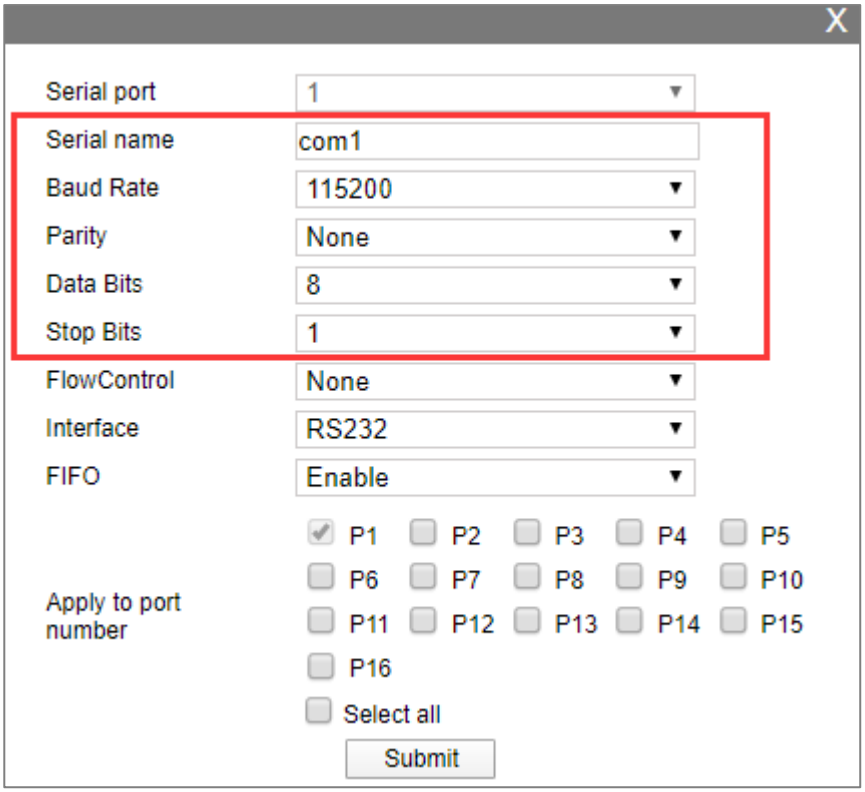
2 In the serial port 1 entry, click the "Edit" button under the operation, as shown in the following figure.



Serial port	Serial name	Baud rate	Parity	Data bits	Stop bits	Flow control	Interface	FIFO	Operate
1	com1	115200	None	8	1	None	RS232	Enable	Edit
2	com2	115200	None	8	1	None	RS232	Enable	Edit
3	com3	115200	None	8	1	None	RS232	Enable	Edit
4	com4	115200	None	8	1	None	RS232	Enable	Edit
5	com5	115200	None	8	1	None	RS232	Enable	Edit
6	com6	115200	None	8	1	None	RS232	Enable	Edit
7	com7	115200	None	8	1	None	RS232	Enable	Edit
8	com8	115200	None	8	1	None	RS232	Enable	Edit
9	com9	115200	None	8	1	None	RS232	Enable	Edit
10	com10	115200	None	8	1	None	RS232	Enable	Edit
11	com11	115200	None	8	1	None	RS232	Enable	Edit
12	com12	115200	None	8	1	None	RS232	Enable	Edit
13	com13	115200	None	8	1	None	RS232	Enable	Edit
14	com14	115200	None	8	1	None	RS232	Enable	Edit
15	com15	115200	None	8	1	None	RS232	Enable	Edit
16	com16	115200	None	8	1	None	RS232	Enable	Edit

3 In the “Edit” window, set “baud rate”, “parity bit”, “data bit” and “stop bit” respectively, as shown in the following figure.

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4 Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the serial server.

1 Log in to the WEB configuration interface and select "COM mode > Port1".

2 Click the “Work Mode” drop-down list box and select “UDP Multicast Mode”.

3 Click “session number” drop-down list box, and select “1 “ to establish one session connection.

4 Click the “Group Number” drop-down list box and select “1”.

5 Enter "30000" for the local port number of the serial port server in the local listen port text box.

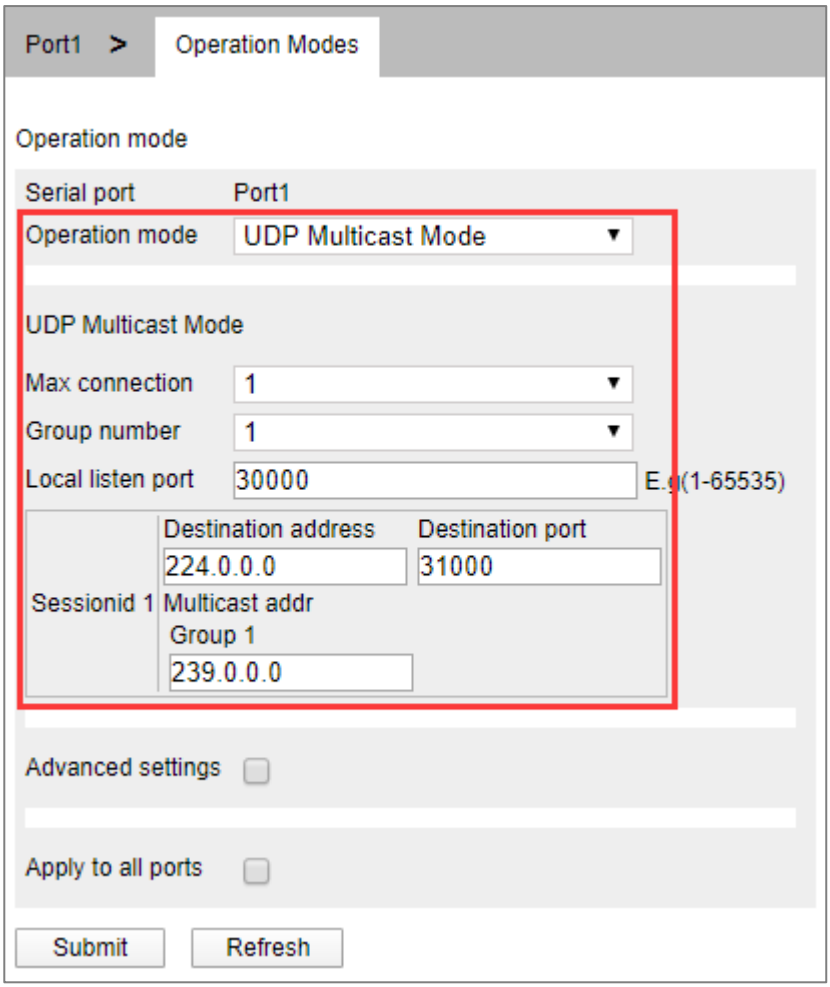
6 Enter the host PC's IP address "224.0.0.0" in the destination address text box.

7 Enter the host PC's local port number, 31000, in the destination port text box.

8 Enter the group address "239.0.0.0" of the host PC in the "Group Address/ Group 1" text box.

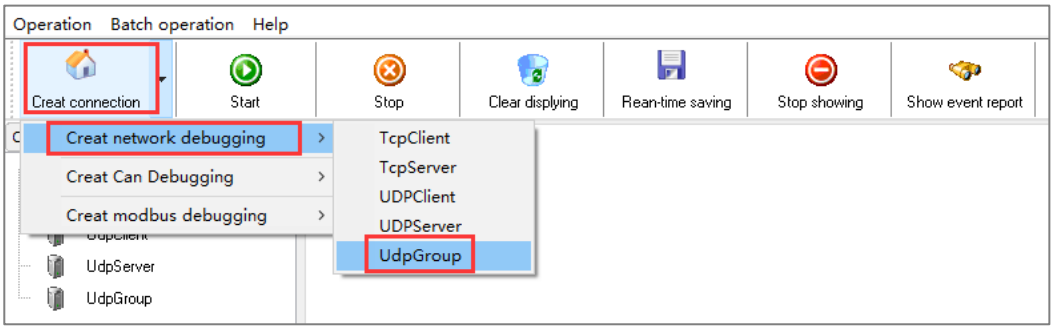
9 Other parameters remain the default, click "Submit".

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Step 4 Run the "DebugTool" software to create UDP multicast for the host.

1 Install and run the "DebugTool" software, click the "Create Connection" drop-down list box, and select "Create Network Debugging > UdpGroup".



2 In the "Local IP" drop-down list box, select the IP address "192.168.1.61" of the host.

3 In the “Local Port” text box, enter the local port "31000" for the host.

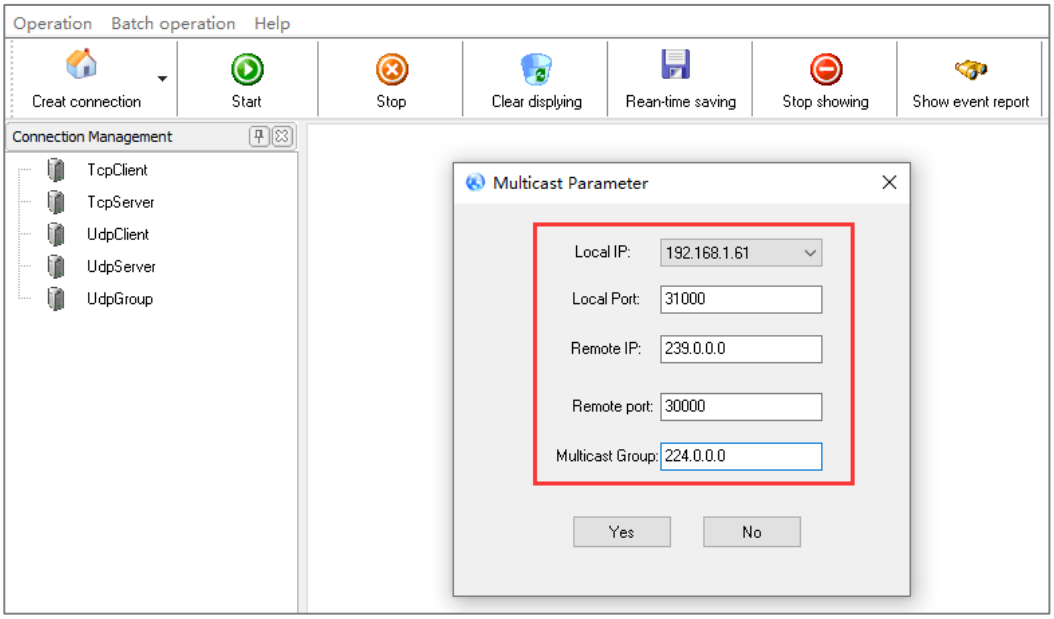
4 In the “Remote IP” text box, enter the IP address "239.0.0.0" for the serial device server.

5 In the “Remote Port” text box, enter the local port number "30000" for the serial

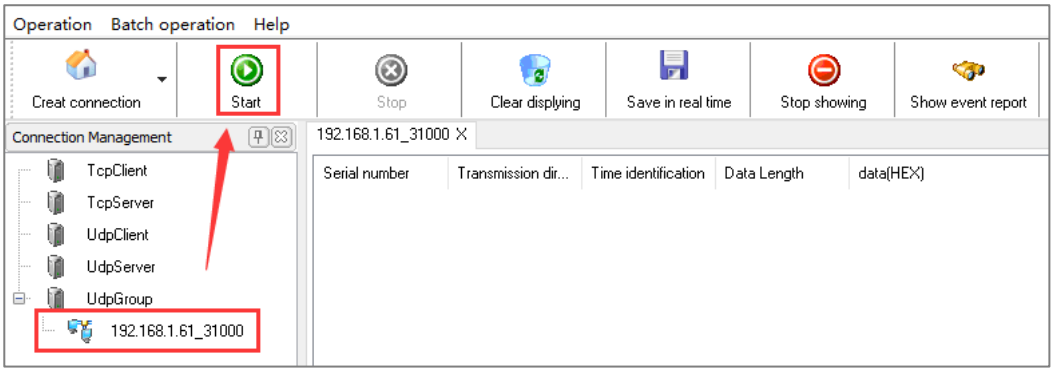
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device server.

6 In the “Multicast” text box, enter the multicast group address "224.0.0.0".



7 Select the UdpGroup connection you created and click start.



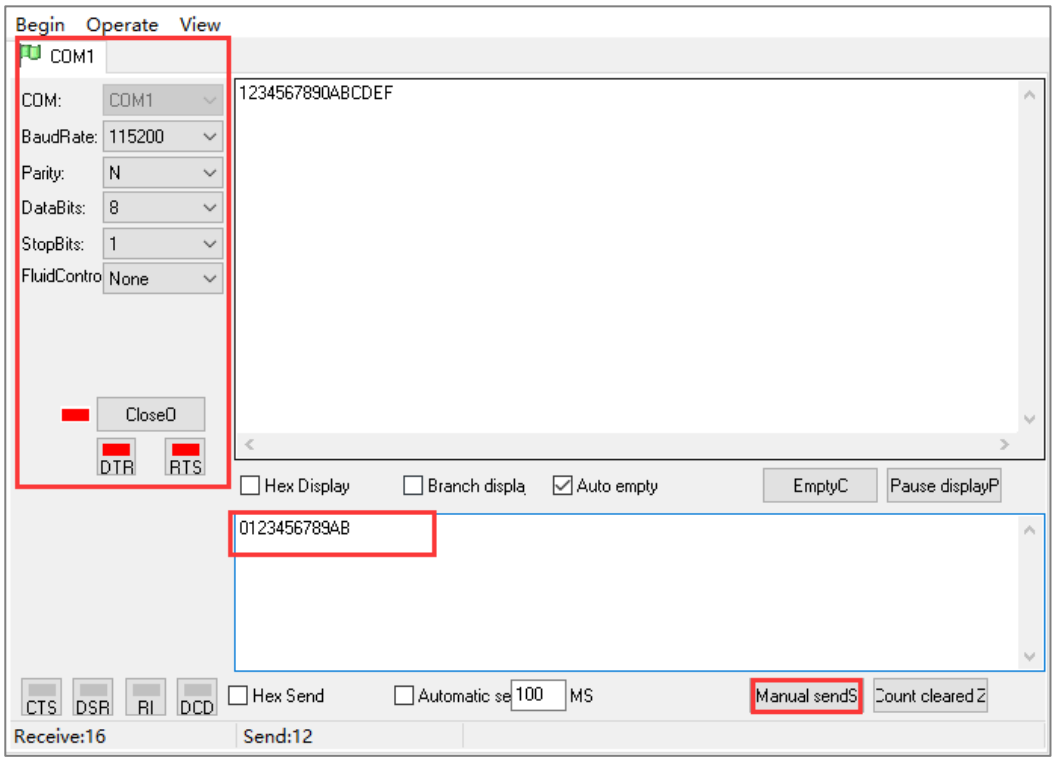
Step 5 Run "ComTest" and "DebugTool" software synchronously to test the communication between serial server and host PC.

1 Install and run "ComTest" software, and click "Add Window" in the "Start" menu.

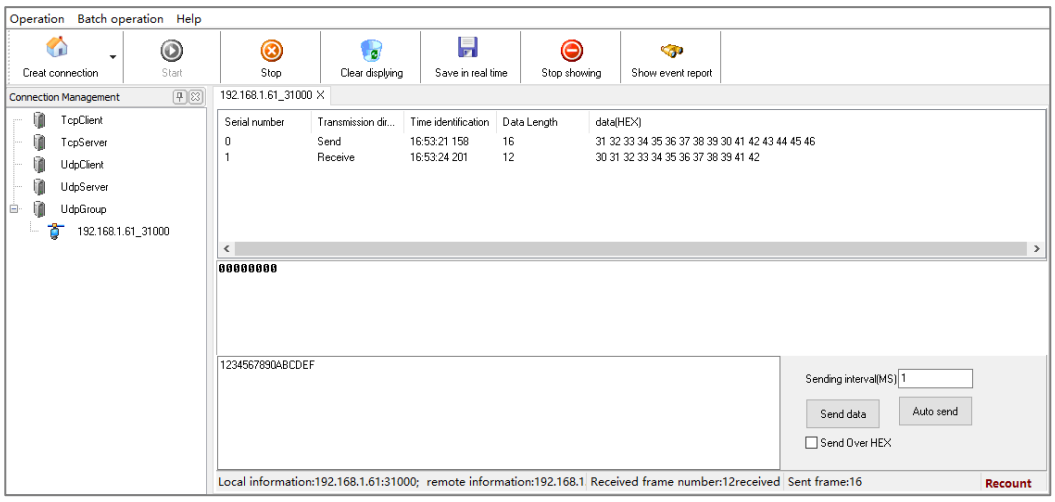
2 Add serial port "COM1" window, and configure serial port number, baud rate, check bit and data bit and other parameters consistent with "serial port configuration" of WEB interface.

3 Open the serial port signal of "COM1", for example, enter the serial port information "0123456789AB", and click "send manually".

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4 Run the “DebugTool” software and view the serial information received by the host PC in the UdpGroup option box. Similarly, the host PC can also send messages to serial port devices.



Step 6 End.

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12 Maintenance and Service

Since the date of product delivery, our company will provide three years warranty. According to our company's product specification, during the warranty period, if the product exists any failure or functional operation fails, our company will repair or replace the product for users free of charge. However, the commitments above do not cover damage caused by improper usage, accident, natural disaster, incorrect operation or improper installation.

In order to ensure that consumers benefit from our company's product, consumers can get help and solutions in the following ways:

- Internet Service;
- Call technical support office;
- Product repair or replacement;

12.1 Internet Service

More useful information and tips are available via our company website.

Website: http://www.3onedata.com

12.2 Service Hotline

Users of our company's products could call technical support office for help. Our company has professional technical engineers to answer your questions and help you solve the product or usage problems ASAP.

Free service hotline: +86-400-880-4496

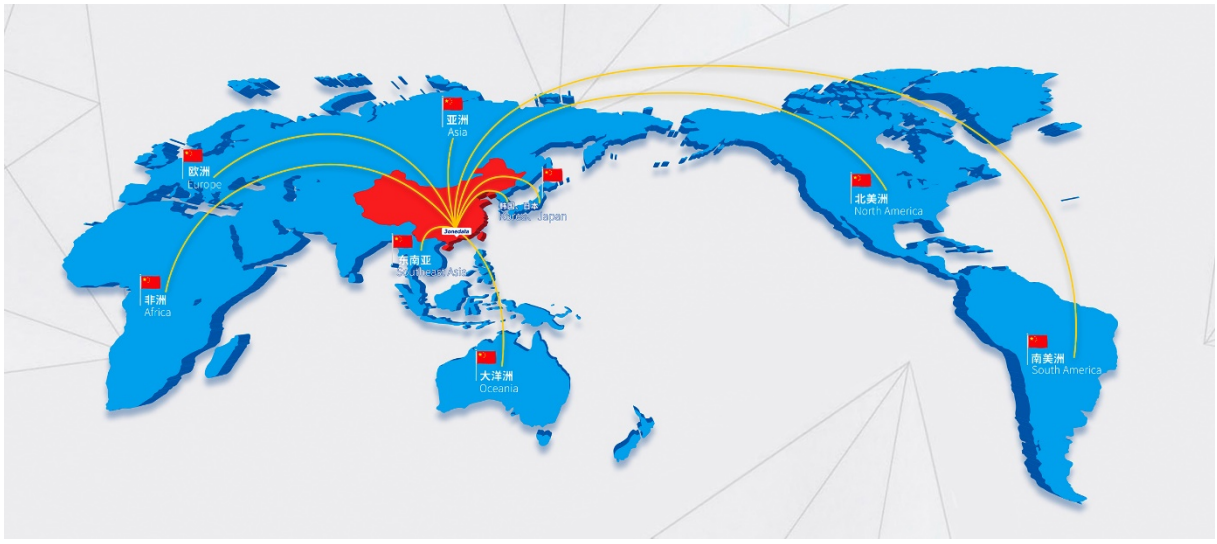
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12.3 Product Repair or Replacement

As for the product repair, replacement or return, customers should firstly confirm with the company's technical staff, and then contact the salesmen to solve the problem. According to the company's handling procedure, customers should negotiate with our company's technical staff and salesmen to complete the product maintenance, replacement or return.

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