

COME-STAR

Serial Device Server User Manual

Cport3108-RJ

Cport3108-232

Cport3108-485

Cport3208-I-AD220

Cport3208-AD220

Version: 3.6

Please read this user manual carefully before using this product

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Explain

This user operator manual is applicable to the Cport3108, Cport3208 series serial device servers.

Before using this manual, please read the following disclaimer statement carefully. Only if agreeing to using the disclaimer below can use the products described in this manual.

Disclaimer

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Safety Instructions:

This product has reliable performance within its designed scope of use. However, it is essential to avoid any human-caused damage or destruction to the device.

- Read the manual carefully and keep it for future reference.
- Do not place the device near water sources or in humid areas.
- Do not place anything on the power cord; keep it out of reach.
- To prevent fire hazards, do not tie or wrap the cables.
- The power plug and other device connectors should be firmly connected; please check regularly.
- Ensure the device is clean; wipe with a soft cotton cloth if necessary.
- Do not attempt to repair the device yourself unless explicitly instructed in the manual.

In the following situations, please disconnect the power immediately and contact our company:

- If the device gets wet.
- If the device is damaged due to a fall.
- If the device malfunctions or shows completely altered performance.
- If the device emits an odor, smoke, or noise.



Note: Essential explanatory information during the use of this device.



Caution: Matters that require special attention during the use of this device.

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1. Product Overview

1.1. Product Description

The Cport3108 series are wall-mounted Ethernet serial servers with a single network port, supporting 8 RS232, RS485, or RS232/485/422 serial ports. It supports 8 serial ports and 1 10/100 Mbps Ethernet port.

The Cport3208 series are rack-mounted Ethernet serial servers with 2 × network ports, supporting 8 RS232/485 or isolated RS485/422 serial ports. It supports 8 serial ports and 2 10/100 Mbps Ethernet ports.

Each serial port can operate independently without affecting the others, and can be configured with different working modes and baud rates (600bps–460800bps). This series uses a 32-bit Arm Cortex-M7 core with a maximum frequency of 528 MHz and an external hardware watchdog. The power supply, network ports, and serial ports all feature high-level ESD, surge, and EFT protection, providing strong anti-interference capability, designed for industrial users to transmit data between multiple serial ports and Ethernet. It integrates a TCP/IP protocol stack, enabling serial devices without internet access to connect to Ethernet conveniently, flexibly, and quickly, making industrial communication smoother, more reliable, and faster, meeting customers' needs for continuous innovation in value-added applications.

COME-STAR industrial Ethernet serial servers support web configuration and multiple network management functions, such as serial/network working mode, serial forwarding, NIC mode, log management, serial port reboot, system management, etc. They support UDP, UDP Multicast, TCP Client/Server, Modbus RTU Master/Slave, Modbus ASCII Master/Slave, RealCOM_MCP/CCP/MW, Pair Connection Master/Slave, HTTPD Client, WebSocket Client, MQTT, and other conversion modes, enabling serial-to-Ethernet or Modbus TCP protocol.

The products adopt industrial-grade design for core components, featuring wide temperature and voltage range, lightning protection, EMI resistance, high reliability, and high performance, suitable for harsh environments. They can be used in industrial monitoring, traffic management, meteorology, water treatment, environmental monitoring, mining, petroleum, chemical, new energy, and other industries for remote data acquisition, remote monitoring, and on-site control, making them essential industrial communication products for the development of Industrial IoT.

Model	Ethernet Port	RS232	RS485	RS232/485/422	RS232/485	Isolated RS485/422	Power Supply
Cport3108-232	1	8	/	/	/	/	DC 9–36V
Cport3108-485	1	/	8	/	/	/	DC 9–36V
Cport3108-RJ	1	/	/	8	/	/	DC 9–36V
Cport3208-AD220	2	/	/	/	8	/	AC 85–264V

Cport3208-I-AD220	2	/	/	/	/	8	DC 110–370V
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1.2. Product Features

- Built with a 32-bit ARM Cortex-M7 core, operating at up to 528 MHz
- 2 Ethernet ports can be configured as two independent network segments or cascade ports (Cport3208 series)
- Serial ports support selectable baud rates from 600bps to 460800bps
- Support UDP and UDP Multicast modes; UDP protocol enables point-to-point, point-to-multipoint, or multipoint-to-multipoint communication, fast and efficient
- Support TCP Client/Server mode; TCP protocol establishes session connections. TCP Client supports up to 8 session connections, TCP Server supports up to 8 session connections, and RFC2217 commands allow dynamic modification of serial baud rate and other communication parameters
- Support Pair Connection Master/Slave mode; devices can be used in pairs with simple operation
- Support Modbus RTU/ASCII Master/Slave mode, enabling conversion between Modbus TCP and Modbus RTU/ASCII protocols
- Support Modbus slave pre-read; a single port can automatically learn up to 128 RTU or 64 ASCII commands for fast response
- Support RealCOM_MCP/CCP/MW mode, mapping the network as a local COM port for seamless connection
- Support HTTPD Client mode, allowing GET or POST operations with HTTPD servers
- Support WebSocket Client mode for bidirectional communication with WebSocket servers
- Support multiple packet segmentation mechanisms; serial data can be converted into Ethernet packets based on data length or timing, meeting different network real-time requirements
- Support registration and heartbeat packets for connection authentication and status detection
- Support Modbus virtual ID, mapping the real Modbus slave ID to a virtual ID to avoid duplicate slave IDs
- Support serial communication parameters, working mode, and send/receive frame statistics
- Support local log storage, network storage, USB storage (Cport3208 series), and serial log output

1.3. Product Display



1.4. Specifications

Software Functions

Item	Description
Network Protocols	IP, TCP/UDP, ARP, ICMP, DHCP, DNS, HTTP, RFC2217, NTP
IP Acquisition Method	Static IP / DHCP
DNS Resolution	Support
User Configuration	Web-based configuration
Simple Transparent Transmission Modes	UDP / UDP Multicast / TCP Client / TCP Server / RealCOM / Pair Connection / MQTT
Modbus	Modbus RTU/ASCII to Modbus TCP
Serial Packet Mechanism	Time and length configurable; default value varies according to baud rate; maximum packet length 1460 bytes
TCP Server Connections	Single serial port supports up to 8 TCP Client connections
Network Buffer	Transmit: 16 Kbyte; Receive: 16 Kbyte

Serial Buffer	Transmit: 1.5 Kbyte; Receive: 1.5 Kbyte
Heartbeat Packet	Support TCP Keepalive mechanism; customizable heartbeat packet content
Registration Packet	Customizable registration packet content
RFC2217	Support
HTTPD Client	Support
WebSocket Client	Support
RealCOM	Support COME-STAR, Moxa, KangHai, and other working modes
MQTT	Support Alibaba Cloud platform and other standard MQTT cloud platforms (OneNet, Huawei Cloud)
Serial Forwarding	Support (Disabled, Bidirectional forwarding, Unidirectional forwarding, Unidirectional receiving)
Average Transmission Delay	< 10 ms
Supporting Software	Network management configuration tool, Virtual COM software, MixView, MaxView

Cport3108 Series

Item	Cport3108-232	Cport3108-485	Cport3108-RJ
Fast Ethernet Port	1 × 10/100Base-T(X) auto-sensing RJ45 port, full/half duplex, auto MDI/MDI-X		
Serial Ports	8 × RS232	8 × RS485	8 × RS232/485/422
Serial Port Connection	5-pin 5.08 mm pitch terminal block	5-pin 5.08 mm pitch terminal block	RJ45
Baud Rate	600 bps ~ 460800 bps		
Data Bits	7 bit, 8 bit		

Stop Bits	1 bit, 2 bit		
Parity	None, Odd, Even		
Button	One-key reboot or factory reset		
Indicators	Power indicator, Run indicator, Ethernet speed indicator, Link/Activity indicator, Serial TX/RX indicators		
Power Input	DC 9 ~ 36 V		
Full Load Power Consumption	< 1.1 W @ DC12V	< 2.6 W @ DC12V	< 2.6 W @ DC12V
Power Connection	2-pin 5.08 mm pitch terminal block or DC jack connector		
Dimensions	207 × 112 × 34.2 mm (including mounting brackets, excluding connector dimensions)		
Installation	Wall mounting		
Enclosure	Metal housing, IP40-rated protection		
Operating Temperature	-40°C ~ +85°C		
Storage Temperature	-40°C ~ +85°C		
Relative Humidity	5% ~ 95% (non-condensing)		
IEC 61000-4-2 (ESD)	Level 2 (Contact ±4 kV, Air ±15 kV)		Level 4 (Contact ±8 kV, Air ±15 kV)

IEC 61000-4-5 (Surge)	Level 4 Power: CM ± 4 kV, DM ± 2 kV; RS485: CM ± 4 kV, DM ± 2 kV; Ethernet: CM ± 6 kV, DM ± 2 kV	Level 4 Power: CM ± 4 kV, DM ± 2 kV; RS485/422: CM ± 4 kV, DM ± 2 kV; Ethernet: CM ± 6 kV, DM ± 2 kV
IEC 61000-4-4 (EFT)	Level 4 (Power ± 4 kV; Ethernet & Serial ± 2 kV)	

Cport3208 Series

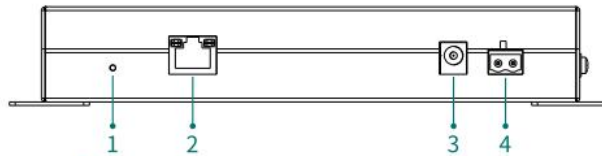
Item	Cport3208	Cport3208-I
Fast Ethernet Port	2 $\times$ 10/100Base-T(X) auto-sensing RJ45 ports, full/half duplex, auto MDI/MDI-X	
Serial Ports	8 $\times$ RS232/485	8 $\times$ RS485/422 (isolated 2 kVAC / 3 kVDC)
Serial Port Connection	5-pin 5.08 mm pitch terminal block	
Baud Rate	600 bps ~ 460800 bps	
Data Bits	7 bit, 8 bit	
Stop Bits	1 bit, 2 bit	
Parity	None, Odd, Even	
USB	1 $\times$ Type-A USB 2.0 for log storage	
Button	One-key reboot or factory reset	
Indicators	Power indicator, Run indicator, Ethernet speed & Link/Activity indicator, Serial TX/RX indicators	
Power Input	AC 85 ~ 264 V	DC 110 ~ 370 V
Full Load Power Consumption	< 2.5 W @ AC220V	< 4.5 W @ AC220V
Power	Switched AC socket (type I)	

Item	Cport3208	Cport3208-I
Connection		
Dimensions	482.6 × 44 × 210 mm (including mounting brackets, excluding connectors)	
Installation	Standard 19-inch 1U rack-mount	
Enclosure	Metal housing, IP40-rated protection	
Operating Temperature	-40°C ~ +85°C	
Storage Temperature	-40°C ~ +85°C	
Relative Humidity	5% ~ 95% (non-condensing)	
EMC – IEC 61000-4-2 (ESD)	Level 4 (Contact ±8 kV, Air ±15 kV)	
EMC – IEC 61000-4-5 (Surge)	Power: CM ±2 kV, DM ±2 kV; RS485: CM ±4 kV, DM ±4 kV; Ethernet: CM ±6 kV, DM ±2 kV	Power: CM ±2 kV, DM ±2 kV; RS485/422: CM ±4 kV, DM ±4 kV; Ethernet: CM ±6 kV, DM ±2 kV
EMC – IEC 61000-4-4 (EFT)	Power ±4 kV; Ethernet & Serial ±2 kV	

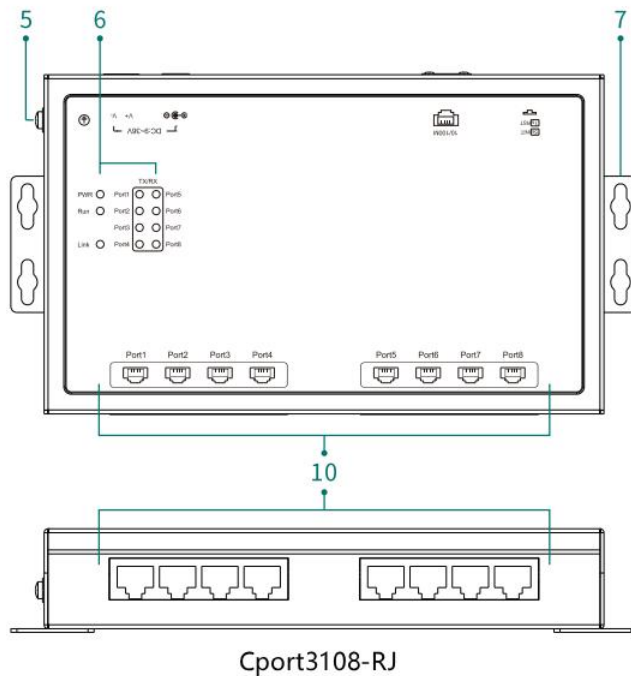
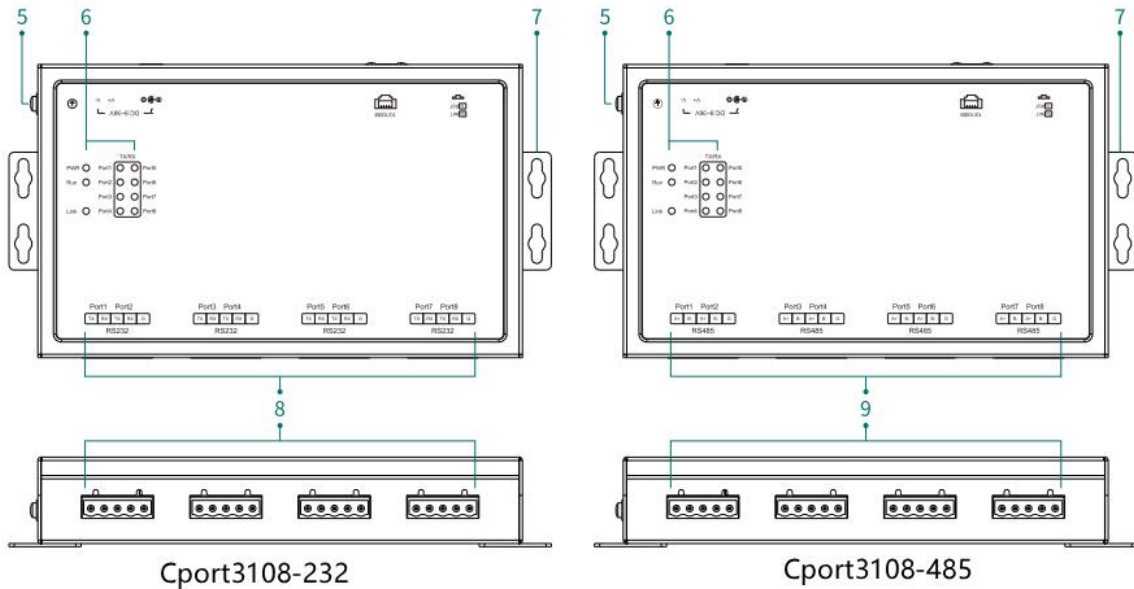
1.5. Interface Overview

1.5.1. Cport3108 Series

Top View



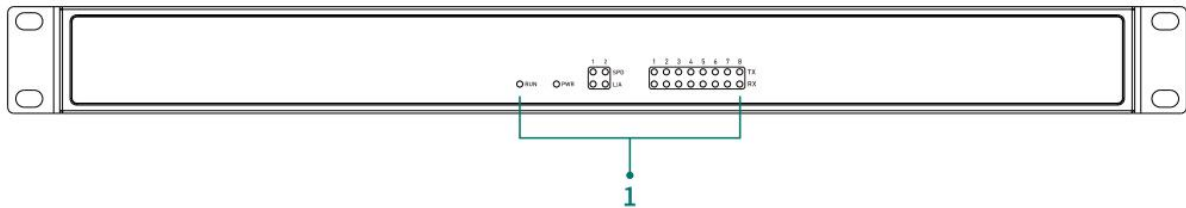
Front View & Bottom View



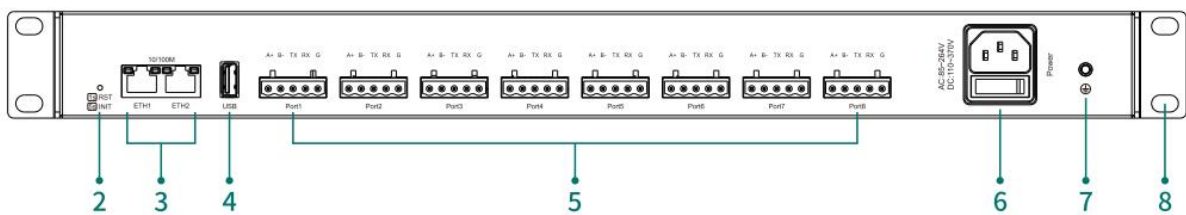
1. One-key reboot / factory reset button
2. Fast Ethernet port (10/100M)
3. Power input DC jack
4. Power input terminal block
5. Grounding screw
6. Indicators
7. Mounting brackets
8. RS232 serial ports (Port1-Port8)
9. RS485 serial ports (Port1-Port8)
10. RS232/485/422 serial ports (Port1-Port8)

1.5.2. Cport3208 Series

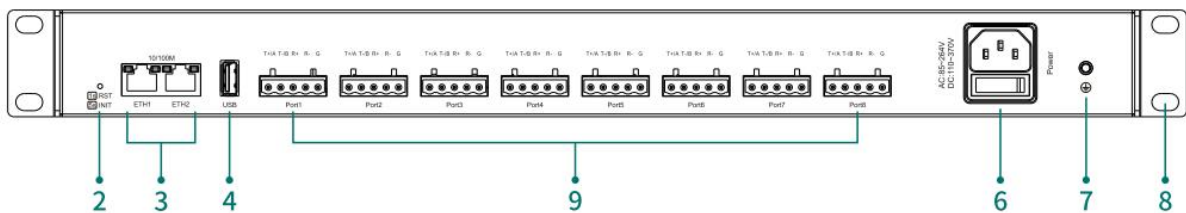
Front Panel



Rear Panel (Cport3208)



Rear Panel (Cport3208-I)

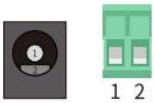


1. Indicators
2. One-key reboot / factory reset button
3. Fast Ethernet ports (ETH1–ETH2)
4. USB
5. RS232/485 serial ports (Port1–Port8)
6. Power input (Power)
7. Grounding screw
8. Mounting brackets
9. RS485/422 serial ports (Port1–Port8)

1.5.3. Power Interface

The Cport3108 series power interface offers two connection options: a 2-pin 5.08 mm pitch terminal block and a DC jack (Φ2.5 mm). It supports a single DC power input with reverse polarity protection, and the input voltage range is DC 9–36 V.

The pin definition of the power interface is shown in the table below.

Appearance	Pin No.	Pin Name	Description
	1	V+	Positive power input terminal (positive pole)
	2	V-	Negative power input terminal (negative pole)

The Cport3208 series power interface features a switched type I AC socket, with an input voltage range of DC 110–370 V or AC 85–264 V. Power switch: “–” for ON, “O” for OFF.

1.5.4. Ethernet Interface

The Cport3108 and Cport3208 series provide 1 and 2 × 10/100Base-T(X) fast Ethernet RJ45 ports, respectively. They support auto-sensing of 10/100 Mbps speed, full/half duplex, and auto MDI/MDI-X.

The pin definition of the Ethernet interface is shown in the table below.

Appearance	Pin No.	Pin Name	Description
	1	TXD+	Ethernet transmit data positive
	2	TXD-	Ethernet transmit data negative
	3	RXD+	Ethernet receive data positive
	6	RXD-	Ethernet receive data negative
	4, 5, 7, 8	/	Not connected

1.5.5. Serial Port

1.5.5.1. RS232 Serial Ports (Cport3108-232)

The Cport3108-232 provides 8 RS232 serial ports (Port1–Port8) using four 5-pin 5.08 mm pitch terminal blocks, with each terminal supporting 2 ports. The pin definitions are as follows:

Appearance	Pin Number	Pin Name	Description
	1	TX	RS232 Port1/3/5/7 transmit signal
	2	RX	RS232 Port1/3/5/7 receive signal
	3	TX	RS232 Port2/4/6/8 transmit signal
	4	RX	RS232 Port2/4/6/8 receive signal
	5	G	RS232 signal ground

1.5.5.2.RS485 Serial Ports (Cport3108-485)

The Cport3108-485 provides 8 RS485 serial ports (Port1–Port8) using four 5-pin 5.08 mm pitch terminal blocks, with each terminal supporting 2 ports. The pin definitions are as follows:

Appearance	Pin Number	Pin Name	Description
	1	A+	RS485 Port1/3/5/7 differential signal A+
	2	B-	RS485 Port1/3/5/7 differential signal B-
	3	A+	RS485 Port2/4/6/8 differential signal A+
	4	B-	RS485 Port2/4/6/8 differential signal B-
	5	G	RS485 signal ground

1.5.5.3.RS232/485/422 Serial Ports (Cport3108-RJ)

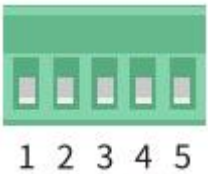
The Cport3108-RJ provides 8 RS232/485/422 serial ports (Port1–Port8) via RJ45. Each port can be configured as RS232, RS485, or RS422, but cannot be used simultaneously for multiple modes. The pin definitions are as follows:

Appearance	Pin Number	RS232	RS485	RS422
	1	–	–	–
	2	RXD	–	–
	3	TXD	–	–
	4	GND	GND	GND
	5	–	A+	T+
	6	–	B-	T-
	7	–	–	R+
	8	–	–	R-

1.5.5.4.RS232/485 Serial Ports (Cport3208)

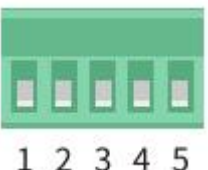
The Cport3208 provides 8 RS232/485 serial ports (Port1–Port8) using eight 5-pin 5.08 mm pitch terminal blocks. Each port can be configured as RS232 or RS485, but cannot be used simultaneously. The pin definitions are as follows:

Appearance	Pin Number	Pin Name	Description
------------	------------	----------	-------------

	1	A+	RS485 differential signal A
	2	B-	RS485 differential signal B
	3	TX	RS232 transmit signal
	4	RX	RS232 receive signal
	5	G	RS232/485 signal ground

1.5.5.5. RS485/422 Serial Ports (Cport3208-I)

The Cport3208-I provides 8 isolated RS485/422 serial ports (Port1–Port8) using eight 5-pin 5.08 mm pitch terminal blocks. Each port can be configured as RS485 or RS422, but cannot be used simultaneously. The pin definitions are as follows:

Appearance	Pin Number	Pin Name	Description
	1	T+/A	RS422 transmit signal positive, or RS485 differential signal A
	2	T-/B	RS422 transmit signal negative, or RS485 differential signal B
	3	R+	RS422 receive signal positive
	4	R-	RS422 receive signal negative
	5	G	RS485/422 signal ground

1.5.6. RS485 Termination Resistor

To change the RS485 termination resistor, open the enclosure. The connection status is shown in the table below. The jumper is set to ON by default, indicating that the termination resistor is connected.

Termination Resistor Connected	Termination Resistor Disconnected
	

When the jumper cap is placed on the “ON” side, the termination resistor is connected; placing it on the other side indicates the termination resistor is disconnected.

1.5.7. Button

- Reboot: Press and release the button within 1 second. The system resets, the RUN indicator turns off, and the system returns to normal after startup.
- Factory Reset: Press and hold the button for more than 5 seconds. The RUN indicator flashes (once every 0.2 s). Release the button at this point to restore factory settings and reset the system.

1.5.8. USB Port

The Cport3208 series supports USB 2.0 protocol. The USB port is used as an expansion interface.

1.5.9. Grounding Screw

Connect one end of the grounding wire to the cold-press terminal and secure it to the chassis grounding hole using the grounding screw. Connect the other end of the grounding wire to the earth. The grounding wire cross-section should be no less than 2.5 mm².

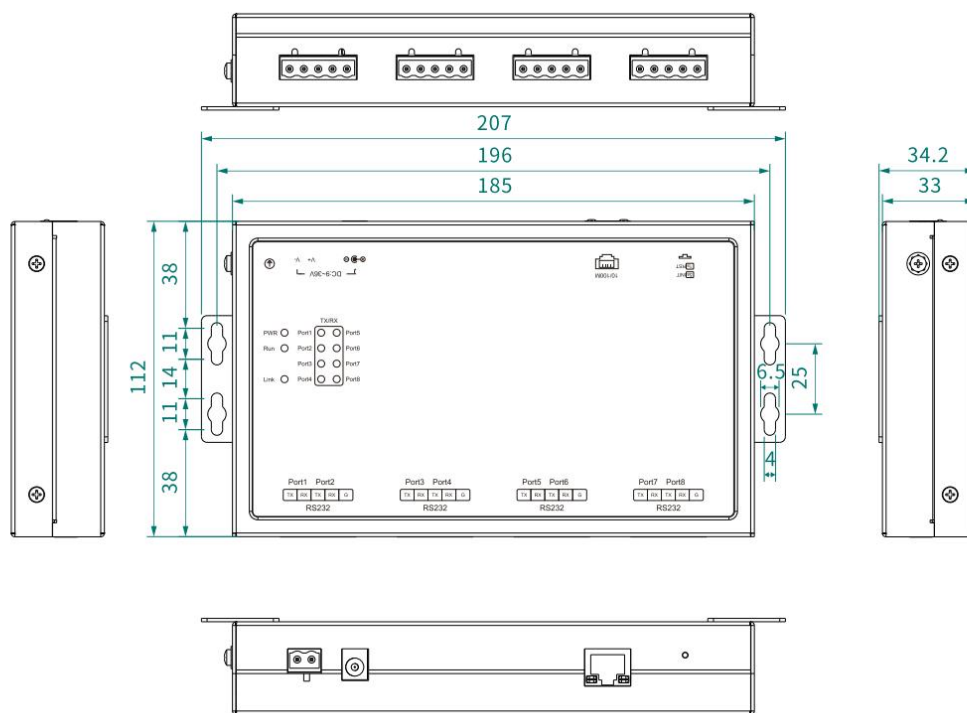
1.5.10. LED Indicators

LED	Status	Definition
PWR	On	Power supply normal
PWR	Off	Power not connected or abnormal
RUN	Blinking	System running normally
RUN	On / Off	System malfunction
TX	Blinking	Serial port transmitting data
TX	Off	Serial port not transmitting data
RX	Blinking	Serial port receiving data
RX	Off	Serial port not receiving data
SPD (yellow, left of Ethernet port)	On	Connection at 100M network
SPD	Off	Connection at 10M network
L/A (green, right of Ethernet port)	On	Ethernet port has valid network connection
L/A	Blinking	Ethernet port transmitting data

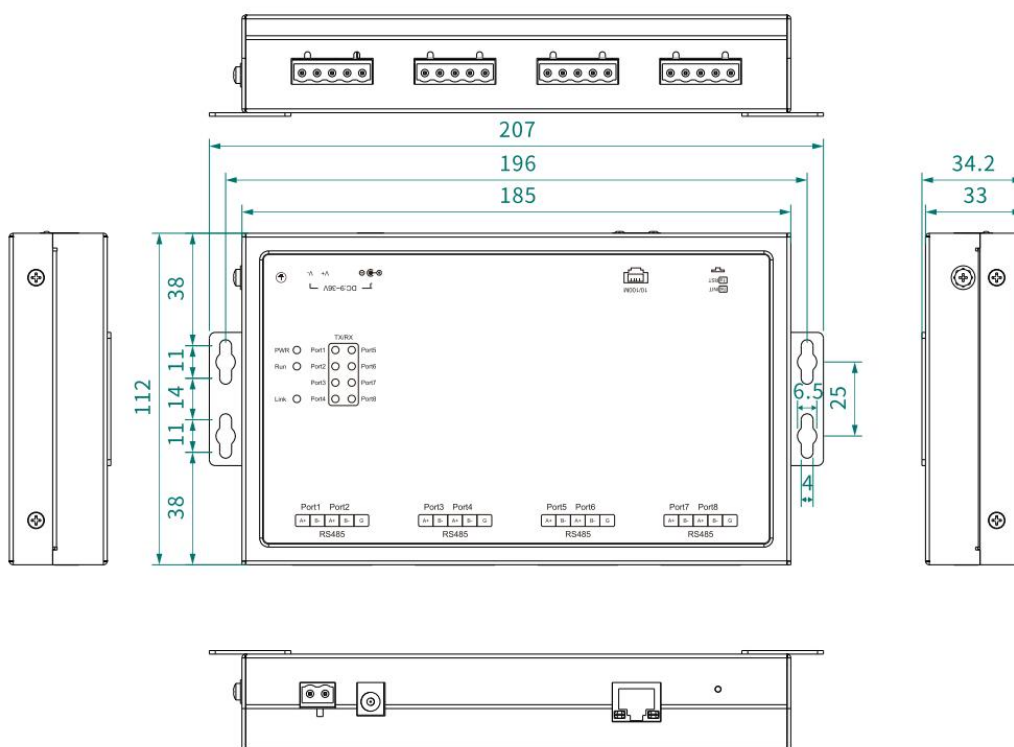
L/A	Off	Ethernet port has no valid network connection
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1.6. Installation Dimensions

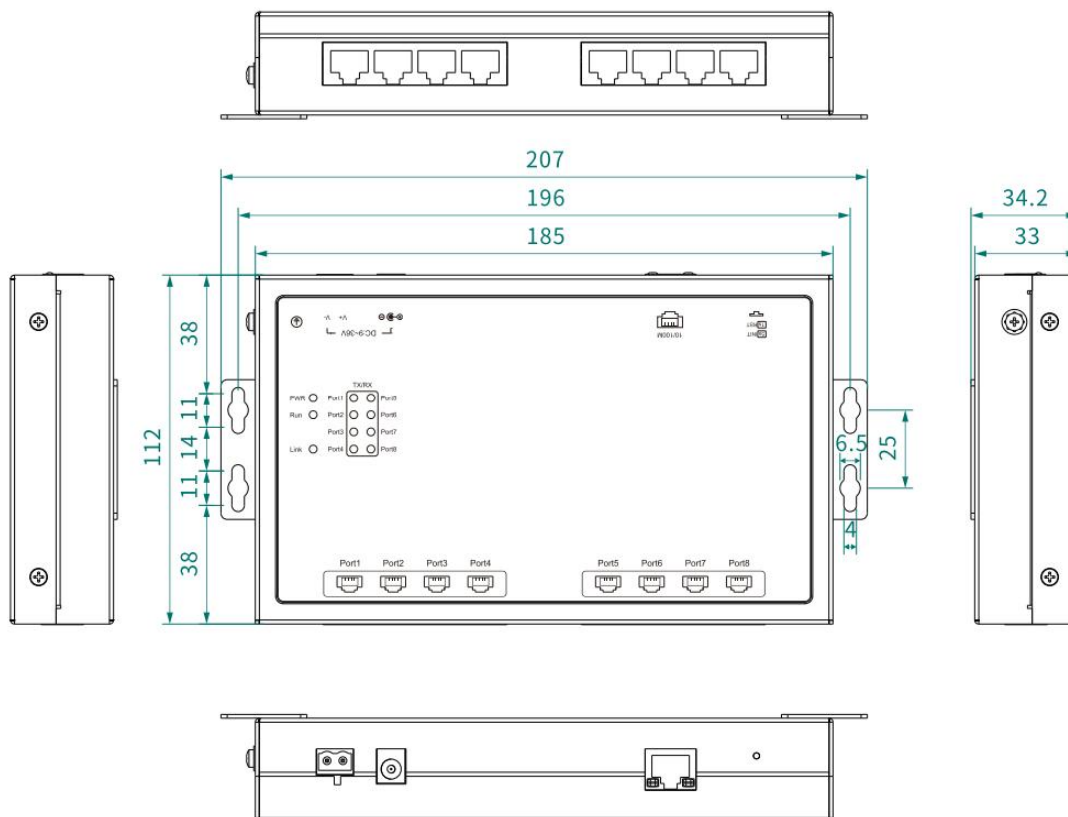
Unit: mm (First Angle Projection)



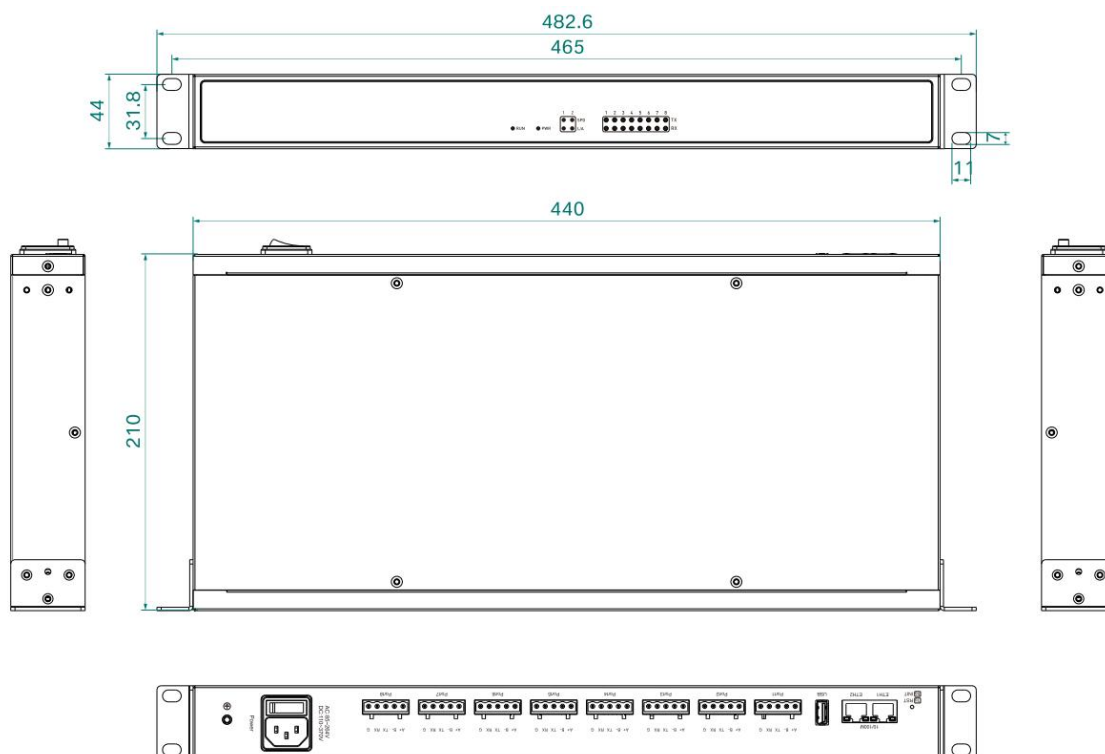
Cport3108-232



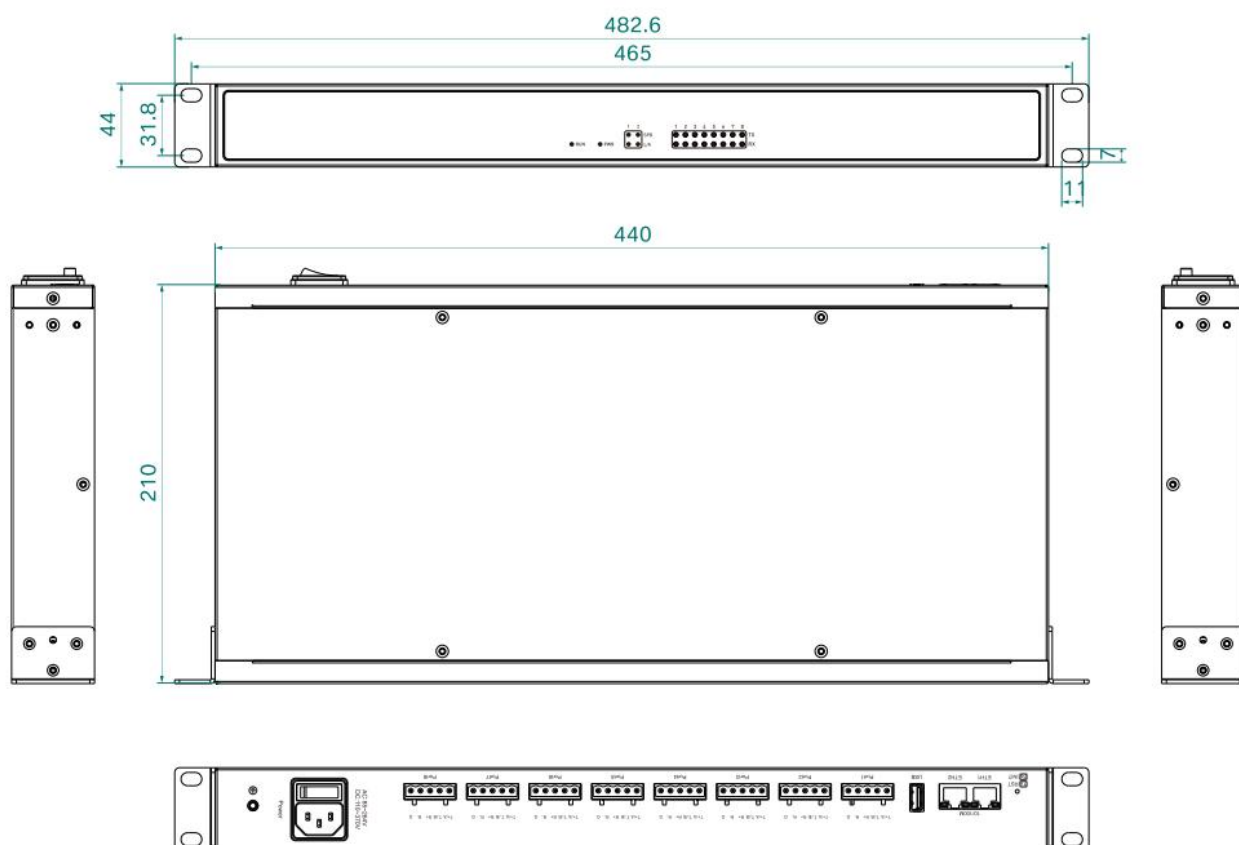
Cport3108-485



Cport3108-RJ



Cport3208



Cport3208-I

2. Quick Network Setup

The serial device server has a built-in Web server, providing a convenient way to access and configure the device. Users can use IE, Firefox, or Google Chrome to access it.

This chapter provides a quick start guide for the COME-STAR 8-port serial device server. It is recommended that users read this chapter carefully and follow the instructions to operate the device, which will give a basic understanding of the product. For detailed descriptions of specific functions, please refer to the following chapters.

2.1. Environment Preparation



Figure 2-1 Hardware Connection Diagram

2.2. Logging in to the Web Interface

2.2.1. Configure PC IP Address

When accessing the serial device server via the Web, the server and the PC must be on the same network segment. Therefore, you need to modify the PC's IP address to ensure it is in the same LAN as the server.

For Windows users, follow these steps:

Start → Control Panel → Network and Internet → Network Connections → Local Area Connection → Properties → Internet Protocol (TCP/IP)

The default IP address of this serial device server is 192.168.16.253. Set the PC IP address to 192.168.16.X, where X is any valid number from 2 to 253, except 253.

The corresponding Windows configuration page is shown in Figure 2-2.

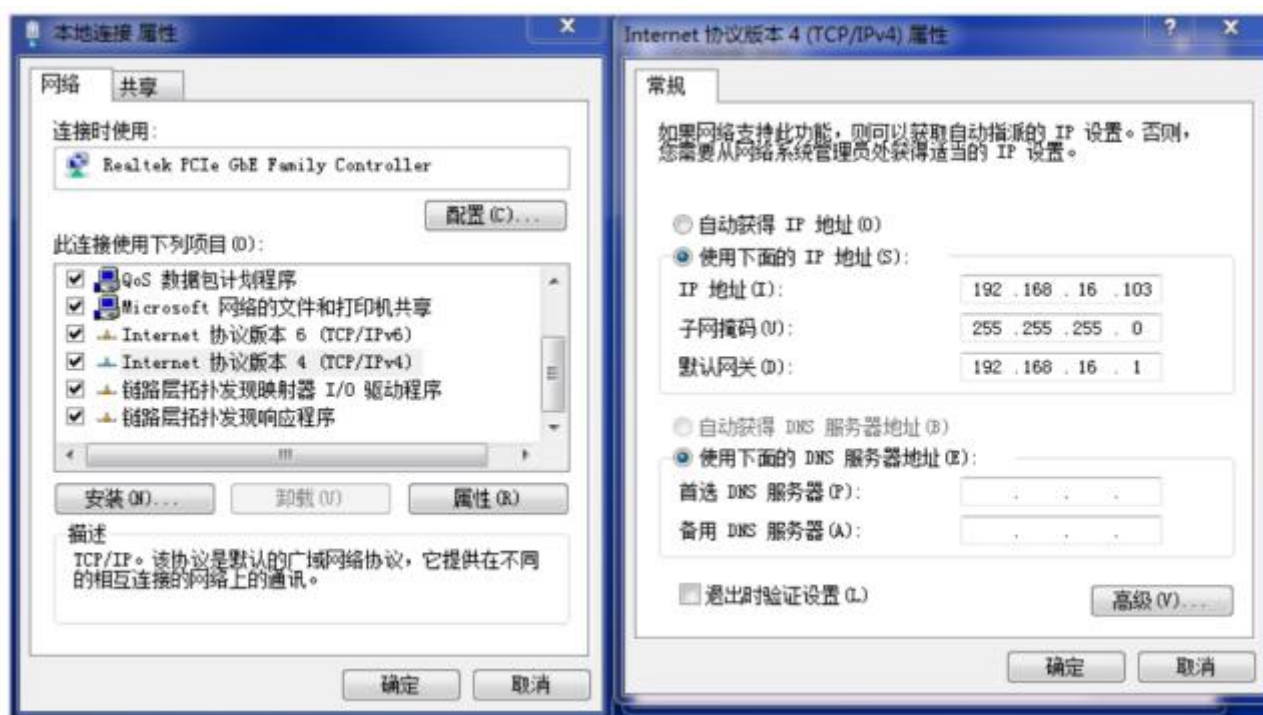


Figure 2-2 Windows IP Configuration Interface

After changing the PC's IP address, you can access the serial device server's Web page using the default IP 192.168.16.253 and perform the relevant configuration operations.

2.2.2. Logging in to the Web Interface

Open a web browser and enter the serial device server's default IP address in the address bar, as shown in Figure 2-3.

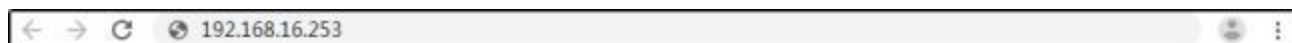


Figure 2-3 Enter IP Address in Browser Address Bar

After pressing Enter, a login page will appear, prompting the user to enter a username and password, as shown in Figure 2-4.



Figure 2-4 Username and Password Input Interface

The serial device server has three types of login users:

- **Regular User:** Username and initial password are both admin. Used for normal Web access.
- **Guest:** Username and password are both none. Can view the current configuration but cannot make changes.
- **Administrator:** Username is admin, and the password is the last six digits of the server's ETH1 MAC address. This account can be used to reset the regular user password if it is forgotten.

After entering the username and password, click OK. The server will authenticate the credentials, and upon successful authentication, you will enter the Web server's main page, as shown in Figure 2-5.

(Internet explorer 7.0 or above is recommended) 中文

Device Info	Device Info				Help Document
Serial Port Config	Device Type:	Cport3108-485	Hardware Version:	V1.1	Attention: Don't refresh the page frequently if the device is transmitting data. This will lead to packet lost in data transmission. Device Type: Machine type of equipment to distinguish between different types of equipment, which can be configured in system information. Device Name: A network identification of a device for distinguishing between different devices in a network management device, available in system information.
Serial Port Info	Device Name:	managed_dev	Software Version:	V1.1.b14d796.250419	
Port Management	Device ID:	MSM015251209050118			
Network Address	IP Address:	192.168.16.253	MAC Address:	00:02:B3:82:81:5E	
User Password	System Time:	2021-10-19 17:30:10	Run Time:	11 Second	
System Info					
Log Management					
System Management					

Figure 2-5 Main Interface of the Web Server

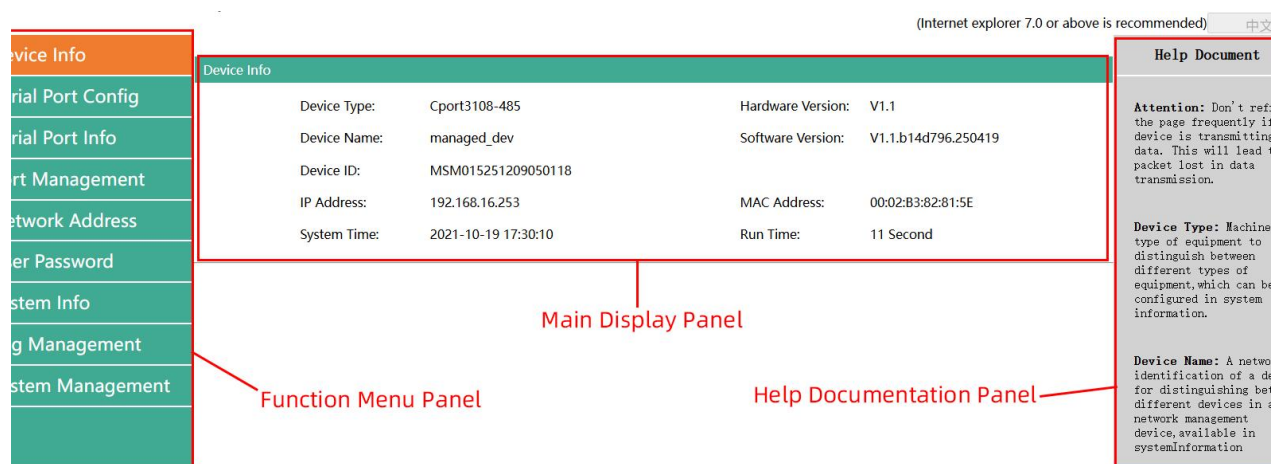
Note:

The serial device server has been extensively tested with IE 7.0 and above, Firefox, and mainstream Google Chrome browsers, all of which work properly. For device firmware upgrades, Google Chrome is recommended.

3. Network Management Features

3.1. Main Page Overview

The main page is generally divided into three areas: the lower-left area contains the function menu, the middle area displays the main functions, and the lower-right area provides the help documentation, as shown in Figure 3-1.



3-1 Web Server Main Page Overview

3.1.1. Function Menu

The left side of the web page is the function menu area, displaying all configurable software features of the serial device server. The main menu includes Device Information, Serial Port Configuration, Serial Port Information, Port Management, Network Address, System Information, Log Management, and System Management. Each main menu contains several sub-functions. The functions are summarized in Table 3-1.

Table 3-1 Menu Function Description

Menu	Function	Description
Device Information	Device Info	Display device details such as name, model number, software version, IP address, etc.
Serial Port Configuration	Serial Server Config	Configure basic information for each port, e.g., serial port number.
	Serial Parameters	Configure serial port working mode, baud rate, packet length, etc.
	Network Parameters	Configure destination address and port for each serial port.

	Network Connections	Configure local port range and heartbeat interval for each port.
	Serial Forwarding	Select data forwarding rules between current serial port and other ports.
Serial Port Information	Serial Info	Display serial port number, total RX/TX data, working mode, and connection info.
Port Management	Port Restart	Configure reboot of specific serial ports.
Network Address	Network Address	Configure dual-port mode, IP acquisition method, IP address, subnet mask, default gateway, and DNS server.
User Password	User Password	Configure username and password.
System Information	System Info	Configure device model, device name, etc.
Log Management	Local Storage	Record logs internally and allow export to PC.
	Network Storage	Send logs to remote UDP server.
	USB Storage	Record logs to USB inserted into device (Cport3208).
	Serial Log Output	Output logs via specified serial port to PC.
System Management	Device Reboot	Configure device reboot function.
	Restore Factory Settings	Configure device to restore factory defaults.
	Device Upgrade	Configure device firmware upgrade.
	No Data Reboot	Configure device to reboot if no network or serial data is transmitted within set time.
	NTP Time Sync	Configure NTP server address and time zone; device can synchronize time from network.

3.1.2. Help Documentation

The bottom-right area of the main page is the Help Documentation section. When you click any main function in the bottom-left menu, the corresponding help content will appear in this bottom-right area of the main page, as shown in Figure 3-2.

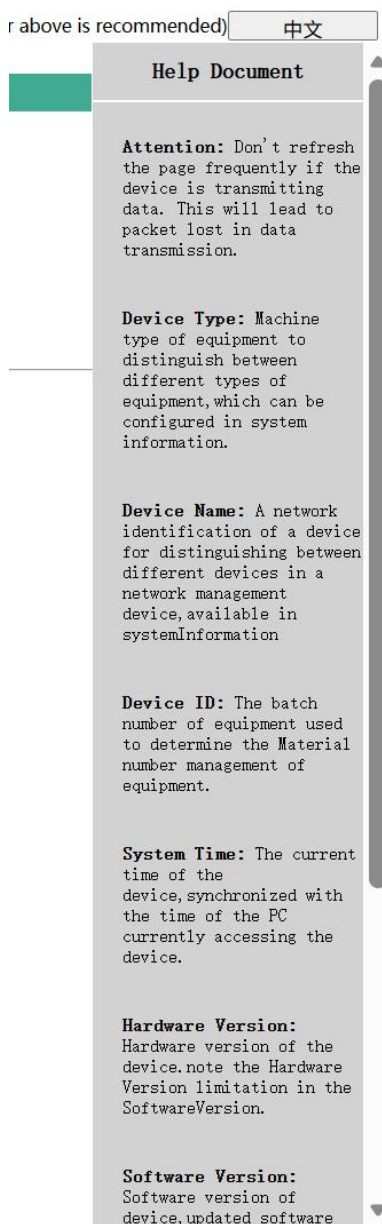


Figure 3-2 Help Interface

3.2. Device Information

The Device Information module includes Device Information. This section displays specific details of the current device, including device model, device name, device number, system time, hardware version, software version, IP address, and MAC address.

Device Info	Device Info			
Serial Port Config	Device Type:	Cport3108-485	Hardware Version:	V1.1
Serial Port Info	Device Name:	managed_dev	Software Version:	V1.1.b14d796.250419
Port Management	Device ID:	MSM015251209050118		
Network Address	IP Address:	192.168.16.253	MAC Address:	00:02:B3:82:81:5E
User Password	System Time:	2021-10-19 17:31:12	Run Time:	1 Minute 13 Second

Figure 3-3 Device Information

- **Device Model:** Model of the serial device server; users can customize it on the System Information page.
- **Device Name:** Name of the serial device server; users can customize it on the System Information page.
- **Device Number:** Serial device server number.
- **System Time:** Current time of the serial device server, synchronized with the PC accessing the device.
- **Uptime:** Running time of the serial device server from power-on to the current moment.
- **Hardware Version:** Current hardware version of the serial device server.
- **Software Version:** Current software version of the serial device server.
- **IP Address 1:** IP address of network card 1 on the serial device server.
- **MAC Address 1:** MAC address of network card 1 on the serial device server.
- **IP Address 2:** IP address of network card 2 on the serial device server.
- **MAC Address 2:** MAC address of network card 2 on the serial device server.

3.3. Serial Port Configuration

The Serial Port Configuration module includes: Serial Device Server Configuration, Serial Port Parameter Configuration, Serial Port Forwarding Configuration, Network Parameter Configuration, and Network Connection Configuration.

3.3.1. Serial Device Server Configuration

The main function of the serial-to-Ethernet server is to achieve bidirectional transparent transmission between standard serial bus data (RS232/485/422) and standard TCP/IP Ethernet data. This solves the problem of connecting ordinary serial devices to the Internet.

The Serial Device Server Configuration page allows users to set the parameters of the serial-to-Ethernet server. The page layout is shown in Figure 3-4.

Device Info	Serial Ethernet Server Configuration	
Serial Port Config	Serial Port No.	COM1 ☒ Enable ☐ Disable
Serial Port Info	Large Traffic Transmission	☐ Enable ☒ Disable
Port Management	Config Synchronization	☐ COM1 ☐ COM2 ☐ COM3 ☐ COM4 ☐ COM5 ☐ COM6 ☐ COM7 ☐ COM8
Network Address	Serial Port Parameters	
User Password	Serial Mode	RS485
System Info	Baud Rate	9600
Log Management	Data Bits	8
System Management	Stop Bit	1
	Parity Bit	None
	Packing Length	500 (0-1460)
	Packing Interval	50 (0-65535)ms
	Frame Head & Tail Mode	☐ Enable ☒ Disable
	Start byte	0x0 (HEX:0x00~0xff)
	End byte	0xff (HEX:0x00~0xff)
	Regpacket Function	Disable
	Regpacket Content	bbbbbbbbbbbbbbbbbbbbbb ☒ HEX ☐ ASCII
	Heartbeat Function 1	Disable
	Heartbeat Content	aaaaaaaaaaaaaaaaaaaaaa ☒ HEX ☐ ASCII
	Heartbeat Interval	30 (1~65535)s
	Heartbeat Function 2	Disable
	Heartbeat Content	aaaaaaaaaaaaaaaaaaaaaa ☒ HEX ☐ ASCII

Serial Port Forward

Current Serial Port:COM1

COM1: Disabled

COM2: Disabled

COM3: Disabled

COM4: Disabled

COM5: Disabled

COM6: Disabled

COM7: Disabled

COM8: Disabled

Network Parameters

Working Mode

UDP Client

Local Port

UDP Client

Data Encryption

Encryption Way

UDP Server

Padding Way

UDP Multicast

Number of Network Connections

TCP Server

Number of Network Connections

TCP Client

Destination Address1

192.168.30.140

Modbus RTU Master

Destination Address2

192.168.30.140

Modbus RTU Slave

Destination Address3

192.168.30.140

Modbus ASCII Master

Destination Address4

192.168.30.140

Modbus ASCII Slave

Destination Address5

192.168.30.140

RealCOM_MCP

Destination Address6

192.168.30.140

RealCOM_CCP

Destination Address7

192.168.30.140

RealCOM_MW

Destination Address8

192.168.30.140

RealCOM_MW

Pair Connection Master

Conf

Pair Connection Slave

HTTPD Client

Port

31501 (1-65535)

Port

31502 (1-65535)

Port

31503 (1-65535)

Port

31504 (1-65535)

Port

31505 (1-65535)

Port

31506 (1-65535)

Port

31507 (1-65535)

Port

31508 (1-65535)

Figure 3-4 Serial Port Configuration Page

The detailed configuration parameters of this interface are shown in Table 3-2.

Table 3-2 Serial Server Configuration Parameter Description

Parameter	Description
Serial Server Configuration	
Serial Port Number	Select the port to configure; enable or disable it.
Enable High-Volume Transmission	Enable or disable based on data volume and connection mode.
Configuration Synchronization	Synchronize current port configuration to other ports.
Serial Port Parameters	

Working Mode	Select the working mode of the port. Supported modes vary by model: • Cport3108-232: 8 × RS232 • Cport3108-485: 8 × RS485 • Cport3108-RJ: 8 × RS232/RS485/RS422 • Cport3208: 8 × RS232/RS485 • Cport3208-I: 8 × RS485/RS422
Baud Rate	Communication speed (bps). Options: 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800. Default: 9600. Independent per port.
Data Bits	7 or 8 bits per frame.
Stop Bits	1 or 2. Default: 1.
Parity	None, Odd, Even. Independent per port.
Packet Length	Maximum data length before network transmission triggers. Range: 0–1460 bytes.
Packet Interval	Maximum idle time before data is transmitted regardless of length. Range: 0–255 ms.
Frame Header/Trailer Mode	Enable to discard data not matching start/end frame bytes.
Start Byte	Hexadecimal range 0x00–0xFF.
End Byte	Hexadecimal range 0x00–0xFF.
Registration Packet Function	Select the sending method for the registration packet: ● Disable: Disable this function. ● LINK: The registration packet is sent only once when the network connection is established. ● DATA: The registration packet is prefixed to the serial data each time the serial port sends data to the network. This function is only available when the network operating mode is UDP or TCP Client.
Registration Packet Content	Max 64 bytes, displayed in Hex or ASCII.
Heartbeat Packet Function	Select the sending method for the heartbeat packet: ● Disable: Disable this function. ● to COM: Send the heartbeat packet to the serial port. ● to Network: Send the heartbeat packet to the network. This function is only available when the network operating mode is UDP, TCP Server, or TCP Client.

Heartbeat Packet Content	Max 64 bytes, Hex or ASCII.
Heartbeat Packet Interval	Seconds. Range: 1–65535. Default: 30.
RFC2217 Function	Enable this function to allow users to dynamically modify serial port parameters such as baud rate, data bits, stop bits, and parity using standard RFC2217 commands from the network side. This function is only available when the network operating mode is TCP Server or TCP Client.
Serial Forwarding	Users can select the data forwarding rules between the current serial port and other serial ports: ● Disabled: Data received by the current serial port will not be forwarded to the corresponding port. ● Unidirectional Forward: Data received by the current serial port will be forwarded to the corresponding port. ● Unidirectional Receive: Allows the corresponding port to forward its received data to the current port. ● Bidirectional Forward: Data received by the current port and the corresponding port are forwarded to each other.
Network Parameters	

Working Mode	This setting supports the following 16 communication modes: UDP, UDP Multicast, TCP Client, TCP Server, Modbus RTU Master, Modbus RTU Slave, Modbus ASCII Master, Modbus ASCII Slave, RealCOM_MCP, RealCOM_CCP, RealCOM_MW, Pair Connection Master, Pair Connection Slave, HTTPD Client, WebSocket Client, MQTT. The factory default is UDP mode. ● UDP: When the device is in UDP mode, the remote device must also operate in UDP mode. The device can establish a UDP connection with one remote device, and the remote IP address and port number can be configured on the web page. ● UDP Multicast: In UDP Multicast mode, the remote device must also work in UDP Multicast mode. The device can join up to 8 multicast groups, with multicast IP addresses and port numbers configurable via the web interface. ● TCP Client: In TCP Client mode, the remote device must operate in TCP Server mode. Both the IP address and port number of the remote device must be configured in the corresponding network connection settings. ● TCP Server: In TCP Server mode, the remote device must operate in TCP Client mode. The device can accept up to 8 remote TCP Client connections. ● Modbus RTU Master: When in Modbus RTU Master mode, if Modbus Over TCP is disabled, the remote device must operate in Modbus TCP Slave mode; if Modbus Over TCP is enabled, the remote device must be in Modbus RTU Slave mode. This mode supports up to 8 connections. ● Modbus RTU Slave: In Modbus RTU Slave mode, if Modbus Over TCP is disabled, the remote device must operate in Modbus TCP Master mode; if enabled, the remote device must be in Modbus RTU Master mode. This mode supports up to 8 connections. ● Modbus ASCII Master: In Modbus ASCII Master mode, if Modbus Over TCP is disabled, the remote device must operate in Modbus TCP Slave mode; if enabled, the remote device must operate in Modbus ASCII Slave mode. This mode supports up to 8 connections. ● Modbus ASCII Slave: In Modbus ASCII Slave mode, if Modbus Over TCP is disabled, the remote device must operate in Modbus TCP Master mode; if enabled, the remote device must operate in Modbus ASCII Master mode. This mode supports up to 8 connections. ● RealCOM_MCP / RealCOM_CCP / RealCOM_MW: In these modes, the PC must run the corresponding virtual serial port software. The software maps the device's serial ports to local PC COM ports, enabling existing serial software to communicate with the device. Each serial port can support up to 8 virtual COM connections. ● Pair Connection Master: In this mode, the remote device must operate in Pair Connection Slave (TCP Server) mode. Both the IP address and port must be configured on the network connection page. ● Pair Connection Slave: In this mode, the remote device must operate in Pair Connection Master (TCP Client) mode. The device can accept up to 8 remote Pair Connection Master connections. ● HTTPD Client: Users must specify the remote HTTP server address, port, and method. The device sends serial data to the HTTP server via GET or POST and can transparently receive data from the HTTP server to the serial port. ● WebSocket Client: Users must specify the WebSocket server address, port, and key parameters. Ping intervals can be set to maintain the connection. Serial data is sent to the WebSocket server in hexadecimal format, and server data can be transparently forwarded to the serial port. ● MQTT: Users must select the MQTT server type and provide the correct server address (IP/domain) and port. Depending on the MQTT service type, the MQTT triplet parameters should be configured. Topics for publishing and subscribing must be set. Serial data received by the device is published to the MQTT server, and subscribed data from the MQTT server is forwarded to the serial port.
Local Port	Local port number for network connection.

Keepalive Interval	For TCP modes, interval to send TCP heartbeat packets. Range: 1–6000 sec.
Keepalive Timeout	Idle time threshold to disconnect TCP connection.
Modbus Over TCP	Enable transparent Modbus RTU/ASCII over TCP.
Modbus Receive Timeout	Time to wait for a response after forwarding request; otherwise considered timeout.
Modbus ID Filter	Filter Modbus slave IDs within range.
Modbus Slave Address Mapping	Map virtual to real slave addresses with offset. Only for Modbus RTU/ASCII Slave. Mutually exclusive with Pre-Read function.
Modbus Slave Pre-Read	Automatically pre-read up to 128 RTU or 64 ASCII commands and store responses for faster replies.
Modbus Polling Interval	Interval to poll slaves.
Pre-Read Command Aging	Time threshold to remove unused pre-read commands.
Number of Network Connections	
Destination Address	The IP address of the remote end of the network connection.
Destination Port	The port number of the remote end of the network connection.
Number of Network Connections in Modbus RTU/ASCII Master Mode	
Destination Address	The IP address of the remote end of the network connection.
Destination Port	The port number of the remote end of the network connection.
Modbus ID Range	Data from Modbus slave devices within this range will be forwarded to the corresponding destination network address.
Modbus Slave Address Mapping Table	
Virtual Address	The Modbus master sends the slave address specified here to the serial server. The serial server uses the offset-modified slave address to read data from the slave device and then returns the slave data to the Modbus master according to the virtual address.
Offset	The offset is used to establish a mapping relationship between the virtual address and the real address.

Real Address	This address range is obtained by applying the offset to the virtual address. The serial server communicates with the actual Modbus slave using this real address.
--------------	--

3.3.2. Modbus Function

The following example uses software such as Modbus Poll to simulate the master, and Modbus Slave to simulate the slave.

3.3.2.1. Master Mode (Modbus Master)

Taking Modbus RTU Master as an example (Modbus ASCII Master is similar):

Configure the serial server's Serial Parameters to 9600-8-N-1.

Set the Work Mode to Modbus RTU Master.

In Network Connections, configure the network address with the IP and port of the slave.

Physical Connection Description:

- Serial Port: Connected to the master.
- Ethernet Port: Connected to the slave.

(Internet Explorer 7.0 or above)

Device Info	Serial Ethernet Server Configuration	
Serial Port Config	Serial Port No.	COM1 ☒ Enable ☐ Disable
Serial Port Info	Large Traffic Transmission	☐ Enable ☒ Disable
Port Management	Config Synchronization	☐ COM1 ☐ COM2 ☐ COM3 ☐ COM4 ☐ COM5 ☐ COM6 ☐ COM7 ☐ COM8
Network Address	Serial Port Parameters	
User Password	Serial Mode	RS485
System Info	Baud Rate	9600
Log Management	Data Bits	8
System Management	Stop Bit	1
	Parity Bit	None
	Serial Port Forward Current Serial Port: COM1	
	COM1: Disabled	COM2: Disabled
	COM3: Disabled	COM4: Disabled
	COM5: Disabled	COM6: Disabled
	COM7: Disabled	COM8: Disabled
	Network Parameters	
	Working Mode	Modbus RTU Master
	Fixed Port Enable	☐
	Modbus Over TCP	☐
	Modbus Recv Timeout	350 (100-9999)ms
	Number of Network Connections	

Figure 3-5 Modbus Web Parameter Configuration

Modbus Poll Software Configuration:

Open the Modbus Poll software, go to Connection → Connect..., and configure the connection parameters as follows:

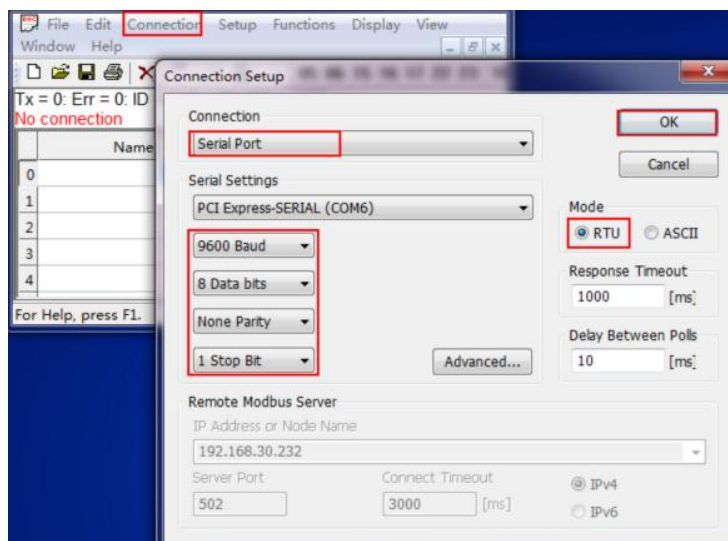


Figure 3-6 Modbus Master Serial Port Parameter Configuration

Read Parameter Configuration: Set the Slave ID to 1, Function Code to 03, starting register address to 0, number of registers to read as 10, and polling interval as 1000 ms:

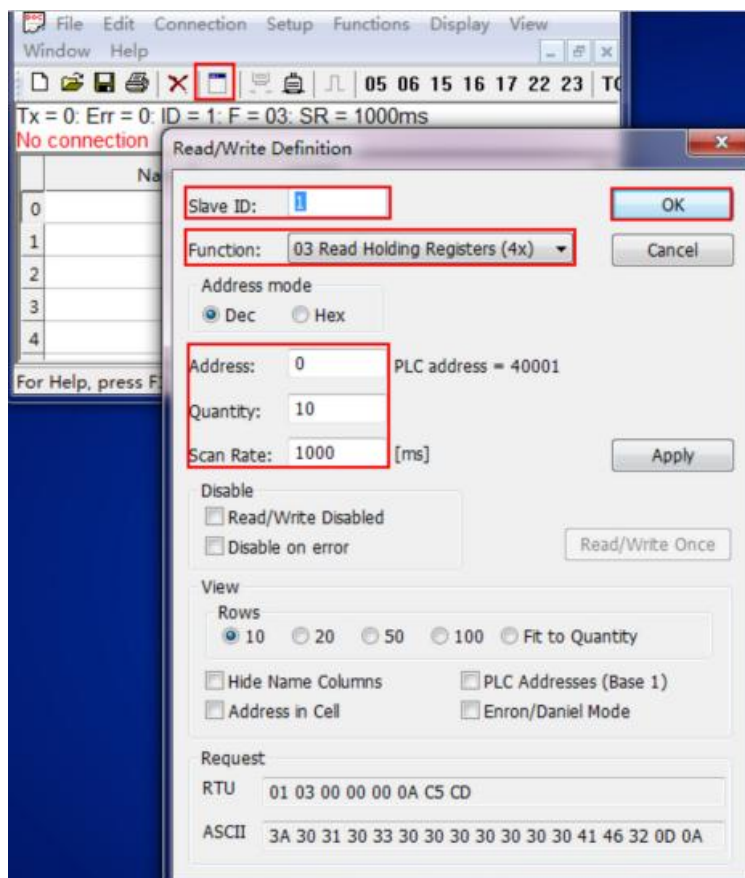


Figure 3-7 Modbus Master Device Property Definition

Modbus Slave Software Configuration:

- Open the Modbus Slave software, navigate to Connection → Connect..., and configure the connection parameters as follows:

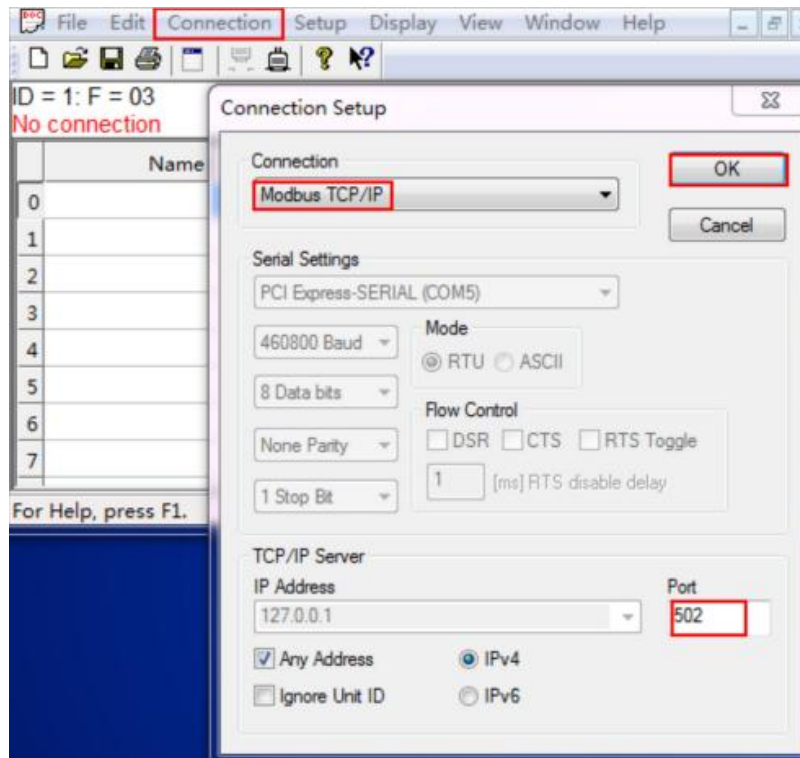


Figure 3-8 Modbus Slave Network Connection Configuration

Slave Device Definition Configuration: Slave ID is 1, Function Code is 03, starting register address is 0, and total number of registers is 200.

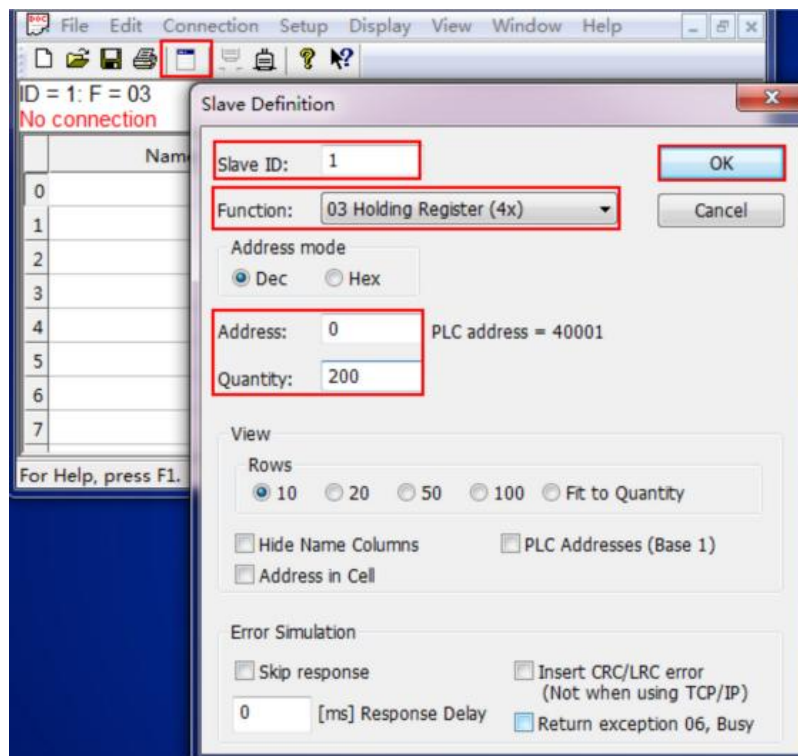


Figure 3-9 Modbus Slave Device Property Definition

Double-click a cell in the Modbus Slave software and set it to auto-increment mode. You will see that the corresponding register cells in Modbus Poll also automatically update, indicating normal device communication.

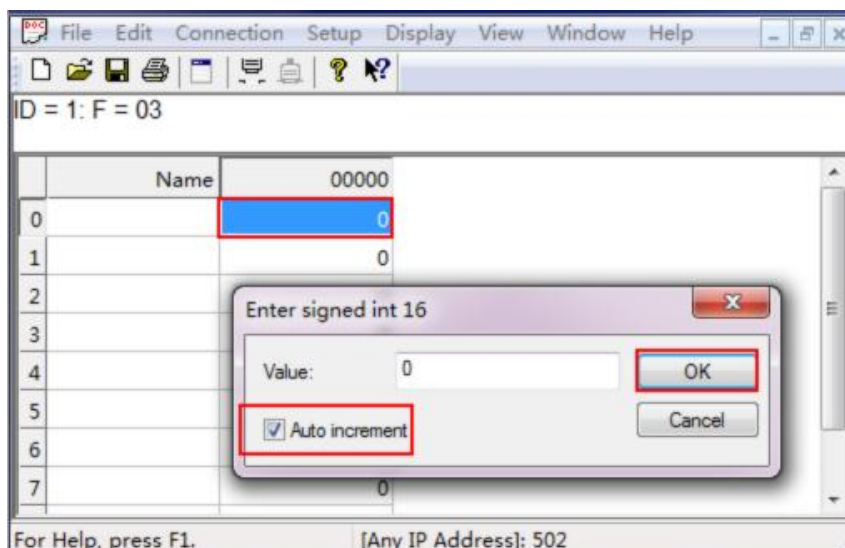


Figure 3-10 Modbus Slave Register Values Auto-Incrementing

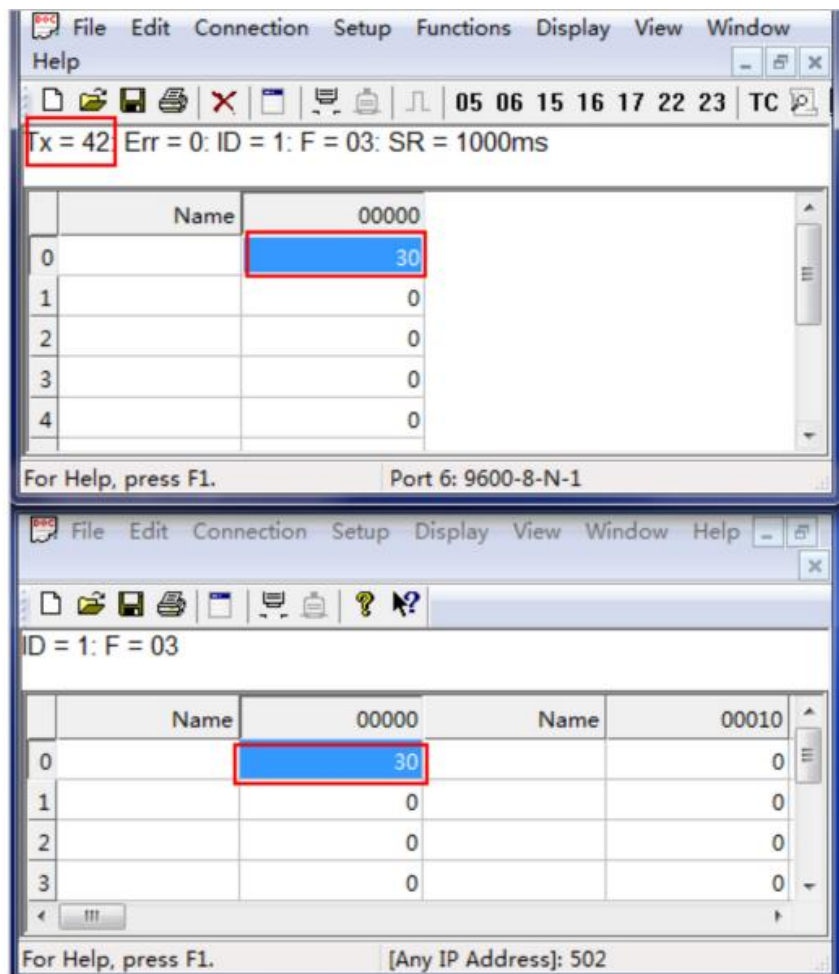


Figure 3-11 Communication Normal: Master Can Read Slave Registers via Serial Server Device

3.3.2.2. Slave Mode (Modbus Slave)

Example Using Modbus_RTU_Slave (Modbus ASCII Slave is Similar):

Configure the serial server's Serial Parameters as 9600-8-N-1 and set the Network Parameters work mode to Modbus RTU Slave, with the local port set to 502.

Physical Connections:

- Serial Port: Connects to the Master
- Ethernet Port: Connects to the Slave

Figure 3-12 Modbus Web Parameter Configuration

Modbus Poll Software Configuration:

Open Modbus Poll software, navigate to Connection → Connect..., and configure the connection parameters as follows:

Figure 3-13 Modbus Master Network Connection Parameter Configuration

- Read parameter configuration: Slave ID is 1, function code is 03, starting register address to read is 0, number of registers to read is 10, and polling interval is 1000 ms.

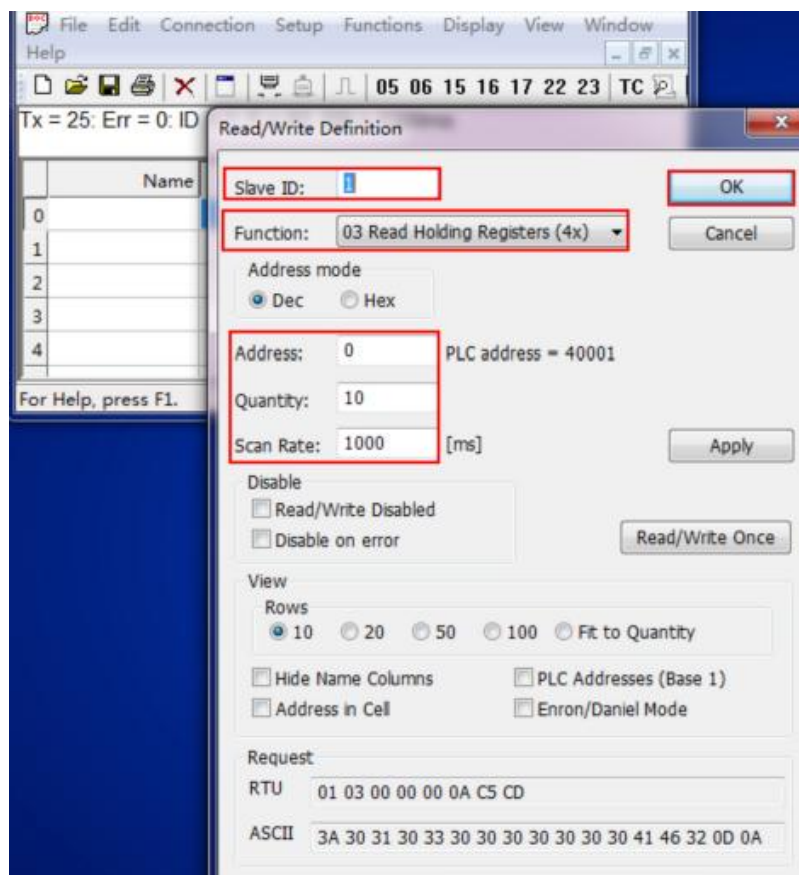


Figure 3-14 Modbus Master Device Property Definition

Configure Modbus Slave:

- Open the Modbus Slave software, go to “Connection” -> “Connect...”, and configure the connection parameters as follows:

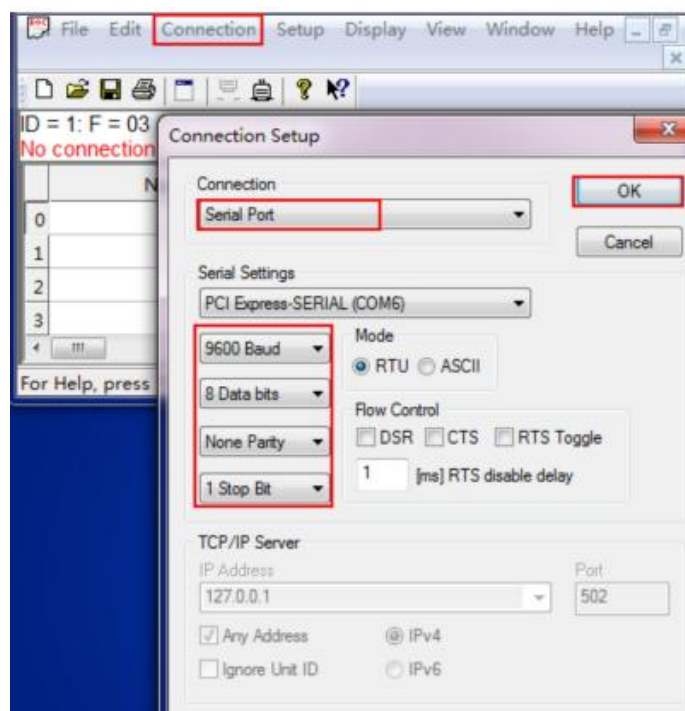


Figure 3-15 Modbus Slave Serial Port Parameter Configuration

Slave Device Definition Configuration: Slave ID is 1, Function Code is 03, starting register address is 0, total number of registers is 200.

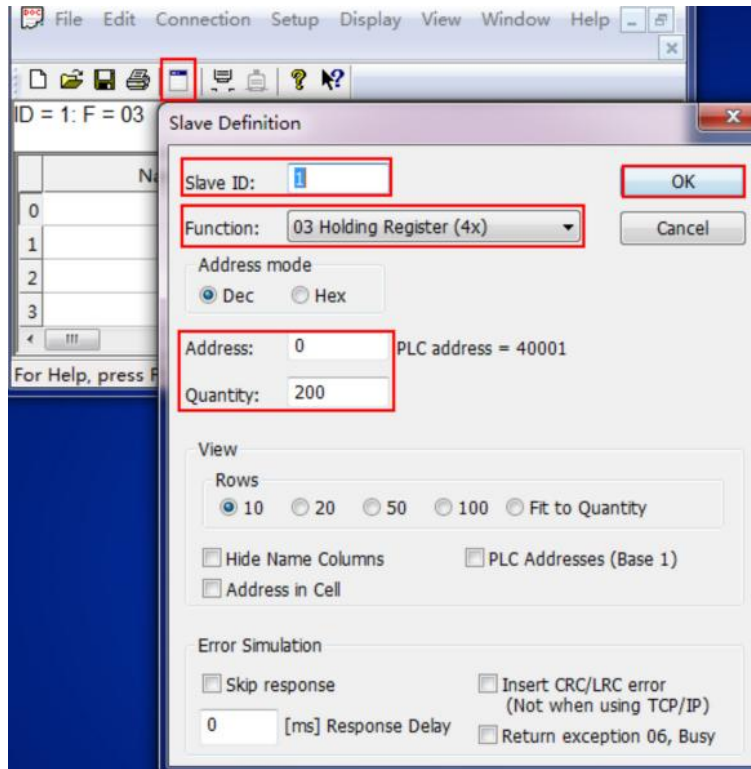


Figure 3-16 Modbus Slave Device Property Definition

Double-click a cell in the Modbus Slave software and set it to auto-increment mode. You will observe that the corresponding register cells in Modbus Poll also update automatically. This indicates that the device communication is functioning normally.

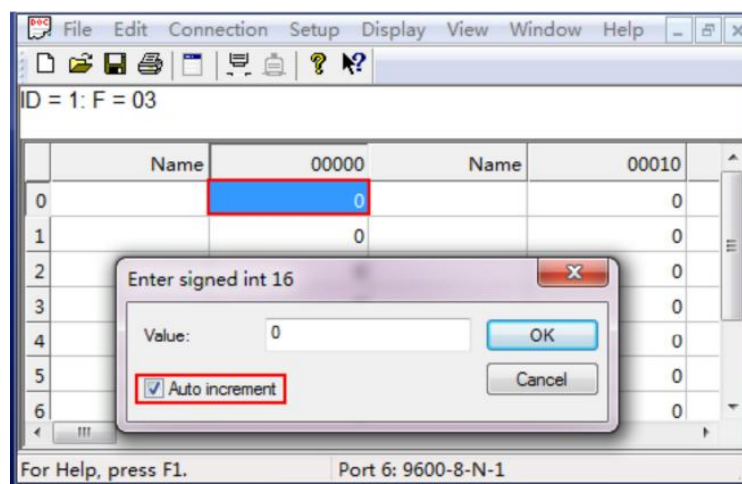


Figure 3-17 Modbus Slave Register Values Auto-Incrementing

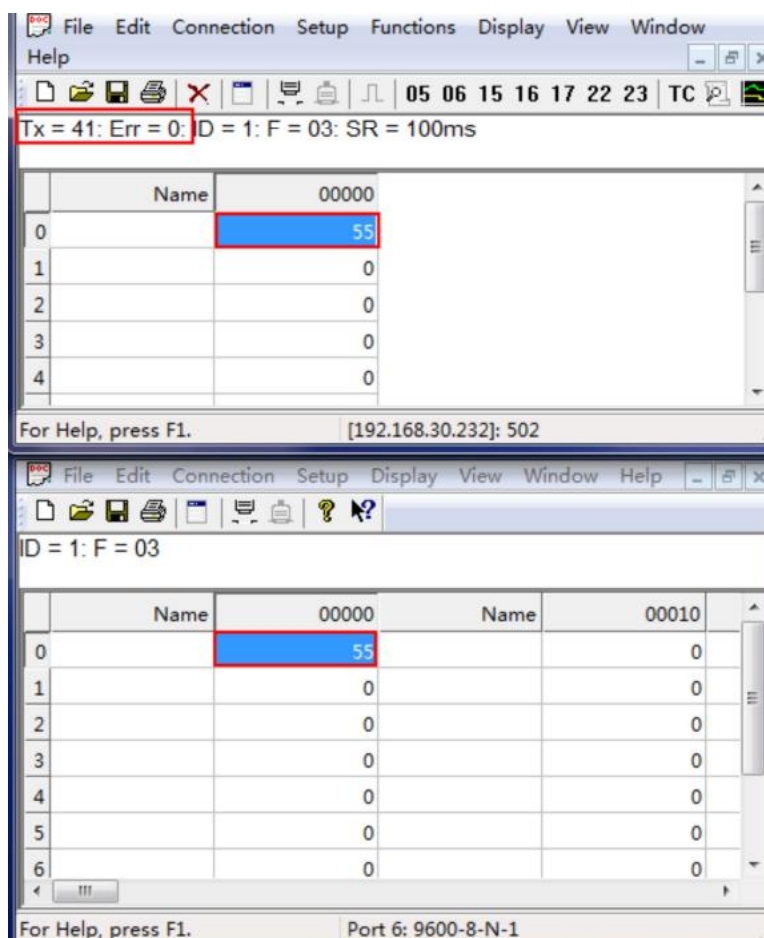


Figure 3-18 Communication Normal: The master can read the slave's register data through the serial server device.

3.3.3. Realcom Function

In Realcom mode, this device works in coordination with an operating system that has the Realcom driver software installed. The Realcom driver maps the device's serial port to a local COM port on the host, allowing existing serial device software or communication modules on the host to be used directly without modification.

The Realcom driver transmits data received on the virtual COM port from the host to the device's serial port over TCP/IP. Conversely, the device transmits data received from its serial port to the host's virtual COM port via TCP/IP.

This device supports three Realcom protocols:

- Realcom MCP: Compatible with Moxa's virtual serial port tool
- Realcom CCP: Compatible with Contec's virtual serial port tool
- Realcom MW: Supports Come-Star's virtual serial port software

网络参数

工作模式

RealCOM_MW

Keepalive 心跳间隔

10

(1-6000)s

Keepalive 超时时间

30

(1-65535)s

配置

应用

Figure 3-19 Realcom Function Configuration

Come-Star Realcom Usage:

1. Configure the device on the WEB interface to Realcom MW mode.
2. Install and open the Come-Star Virtual Serial Port Management software.
3. Click “Add Device” to open the Add Serial Port Mapping interface.
4. Click “Scan”; the software will scan devices within the local network.
5. Select the corresponding device based on its MAC address and IP address.
6. Click “Map Serial Port” and wait for the creation of the local virtual COM port.

The image consists of two screenshots of the 'MWVirtualCom V1.0.300.05' software interface.

The top screenshot shows the 'Add Device' dialog box. In the top-left corner, the 'Add Device' button (represented by a plus sign) is highlighted with a red box. In the top-right corner, the 'Scan' button is also highlighted with a red box. The main area of the dialog box contains a table with columns: 'Select' (with a checkbox), 'Device Name' (containing 'Cport3208-I'), 'Mac' (containing '00-02-B7-38-32-08'), and 'IP Address' (containing '192.168.16.253'). At the bottom-right of the dialog box, the 'Map Serial Port' button is highlighted with a red box.

The bottom screenshot shows the main software interface. At the bottom, there is a table with columns: 'Remarks', 'Serial Port', 'Serial Parameters', 'Serial Status', 'Network Protocol', 'Target IP', 'Target Port', 'Local IP', 'Local Port', 'Serial Port', 'Network Port', and 'Network Status'. The first row of data is: 'Cport3208-I', 'COM2 (Port1)', '未使用', 'RealCom', '192.168.16.253', '57950', '-', '-', '0', '0', and '连接成功'.

Figure 3-20 Virtual Serial Port Management Software Creating a Virtual COM Port

Connect the serial port of this device to the physical serial port on the host. Use a serial debugging tool to open both the virtual COM port created by the Virtual Serial Port Management Software and the physical COM port on the host, and test data transmission between them.

40



Figure 3-21 Virtual COM Port Communication Test

3.3.4. Httpd Client Function

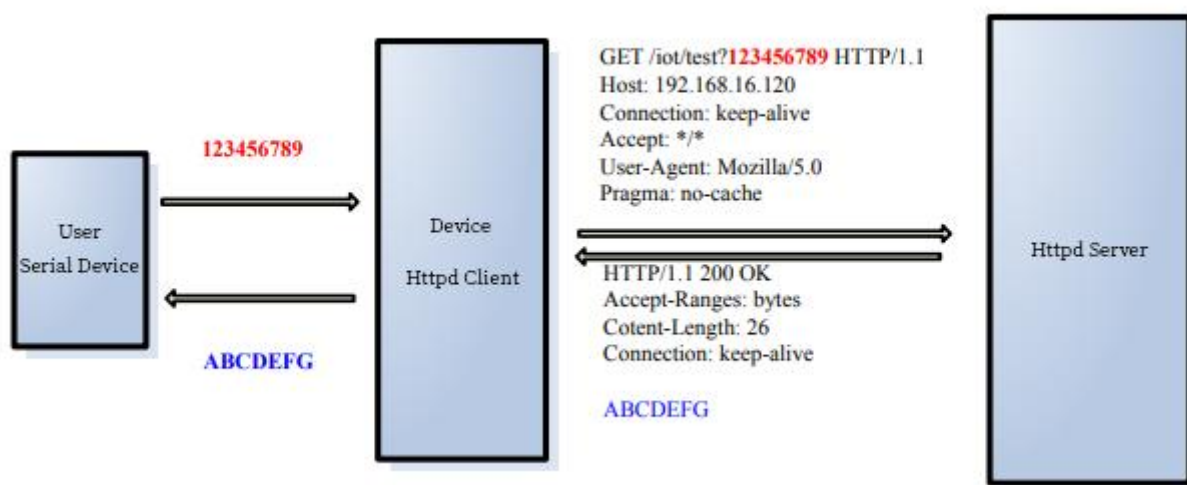


Figure 3-22 Httpd Client Mode Introduction

This function allows the device to submit data received from the serial port to an HTTP server via HTTP. If the HTTP server has data to send back, the device will transparently forward the HTTP body data to the serial port.

Usage Instructions:

- Select the network mode as "Httpd Client".
- Enter the HTTPD address, which is the HTTP server address. This can be an IP address or a domain name (the device must have internet access if a domain name is used).
- Enter the HTTPD port number.

- Specify the HTTPD method by entering the correct URL path and selecting either GET or POST as required.
- Fill in the HTTPD request headers according to your needs.
- Finally, click the Configure button to save the parameters.

Figure 3-23 Introduction to Httpd Client Configuration

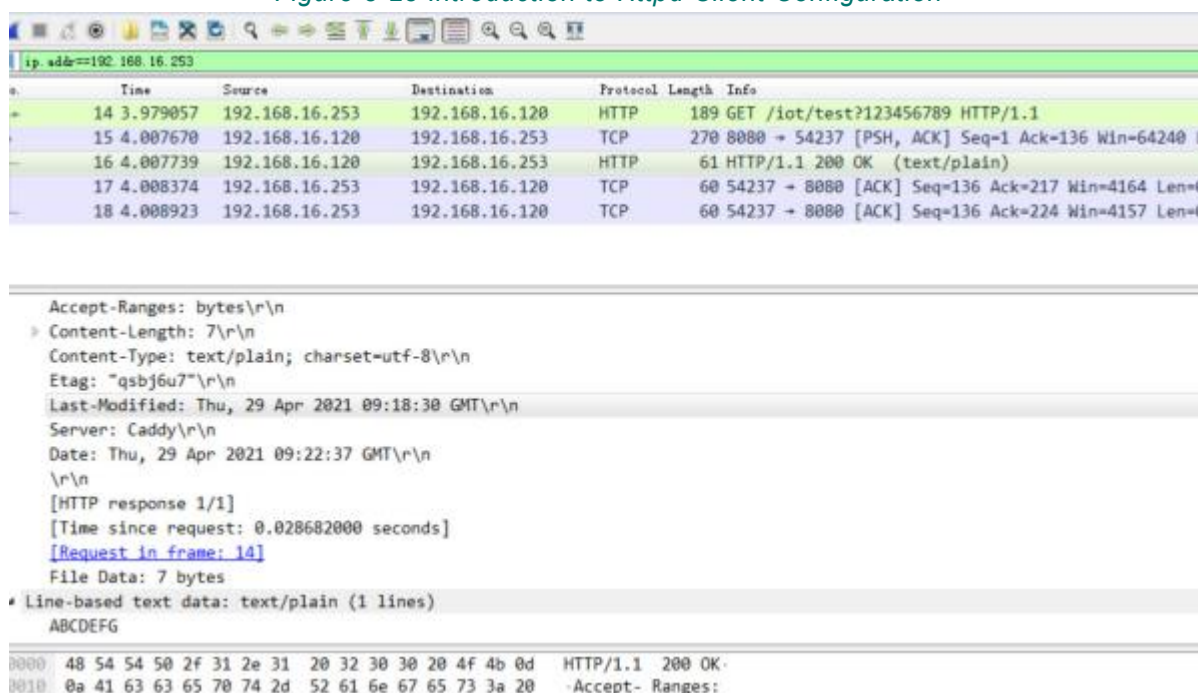


Figure 3-24 Httpd Client Communication Wireshark Capture Example

3.3.5. WebSocket Client Function

This function allows the device to act as a WebSocket Client, transmitting data received from the serial port to the WebSocket server in hexadecimal format. The WebSocket server can also send data to the serial device at any time.

Network Parameters	
Working Mode	WebSocket Client
undefined	Close
Fixed Port Enable	☐

Data Encryption	
Encryption Way	Crypto_None
Padding Way	None

WebSocket Setting	
WebSocket Address	192.168.16.120
WebSocket Port	8443 (1~65535)
WebSocket Function	/v1
WebSocket ping	120 (0~255)s

Configuration

Apply

Figure 3-36 WebSocket Client Configuration Guide

Usage Instructions:

1. Select the network mode as “WebSocket Client.”
2. Enter the WebSocket server address, which can be an IP address or a domain name (requires external network access).
3. Enter the WebSocket server port number.
4. Specify the correct URL path for the WebSocket method.
5. Optionally set the WebSocket Ping interval; enter 0 to disable the Ping function.
6. Finally, click the “Configure” button to save the parameters.

No.	Time	Source	Destination	Protocol	Length	Info
2655	34.583069	192.168.16.253	192.168.16.120	TCP	60	54241 → 8443 [SYN] Seq=0 Win=4380 Len=0 MSS=1460
2656	34.583138	192.168.16.120	192.168.16.253	TCP	58	8443 → 54241 [SYN, ACK] Seq=0 Ack=1 Win=8192 Len=0
2658	34.584744	192.168.16.253	192.168.16.120	TCP	60	54241 → 8443 [ACK] Seq=1 Ack=1 Win=4380 Len=0
2670	34.685202	192.168.16.253	192.168.16.120	HTTP	349	GET /v1/websocketTest HTTP/1.1
2671	34.688711	192.168.16.120	192.168.16.253	HTTP	411	HTTP/1.1 101 Switching Protocols
2672	34.689425	192.168.16.253	192.168.16.120	TCP	60	54241 → 8443 [ACK] Seq=296 Ack=358 Win=4023 Len=0
3360	42.334997	192.168.16.253	192.168.16.120	WebSocket	74	WebSocket Binary [FIN] [MASKED]
3363	42.534316	192.168.16.120	192.168.16.253	TCP	54	8443 → 54241 [ACK] Seq=358 Ack=316 Win=64220 Len=0
4094	52.200039	192.168.16.120	192.168.16.253	WebSocket	86	WebSocket Text [FIN]
4095	52.200800	192.168.16.253	192.168.16.120	TCP	60	54241 → 8443 [ACK] Seq=316 Ack=390 Win=3991 Len=0

▶ Frame 3360: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface 0 ▶ Ethernet II, Src: Watanabe_3b:32:08 (00:02:b7:3b:32:08), Dst: AsustekC_41:e3:9a (4c:ed:fb:41:e3:9a) ▶ Internet Protocol Version 4, Src: 192.168.16.253, Dst: 192.168.16.120 ▶ Transmission Control Protocol, Src Port: 54241, Dst Port: 8443, Seq: 296, Ack: 358, Len: 20 ▶ WebSocket • Data (14 bytes) Data: 776562736f636b65742054657374 [Length: 14]
--

0000	4c ed fb 41 e3 9a 00 02	b7 3b 32 08 08 00 45 00	L..A....;2...E.
0010	00 3c 00 1c 00 00 ff 06	18 da c0 a8 10 fd c0 a8	..<.....
0020	10 78 d3 e1 20 fb 00 00	1b e0 51 76 2e 73 50 18	..x....Qv.sP.
0030	0f b7 64 17 00 00 82 8e	12 34 56 78 65 51 34 0b	..d.....4VxeQ4.
0040	7d 57 3d 1d 66 14 02 1d	61 40	}W..f...a@

Figure 3-26 WebSocket Client Communication – Wireshark Packet Capture Example

3.3.6. MQTT Function

In this mode, the serial server operates as an MQTT Client. Data received from the serial port is published to the MQTT server via the configured publish topic. Data delivered from the MQTT server through the subscribed topic is then forwarded to the serial port.

Network Parameters	
Working Mode	MQTT Client
undefined	Close
Fixed Port Enable	☐
Data Encryption	
Encryption Way	Crypto_None
Padding Way	None
MQTT Setting	
Platform	☒ Ali Cloud ☐ OneNet ☐ OneNetS ☐ HuaWei Cloud ☐ Other Cloud
MQTT Address	iot.test.com
MQTT Port	1883 (1~65535)
QOS	0
MQTT Ping	60 (0~255)s
Data Format	hex
Product Key	Client_ID (By Numbers, letters, _ +, - and other characters)
Device Name	UserName (By Numbers, letters, _ +, - and other characters)
Device Secret	Password (By Numbers, letters, _ +, - and other characters)
Subscribe Topic 1	/sub1 ☒ (By Numbers, letters, _ +, - and other characters)
Publish Topic 1	/pub1 ☒ (By Numbers, letters, _ +, - and other characters)
Subscribe Topic 2	/sub2 ☐ (By Numbers, letters, _ +, - and other characters)
Publish Topic 2	/pub2 ☐ (By Numbers, letters, _ +, - and other characters)

Figure 3-27 MQTT Configuration Overview

MQTT Configuration:

- Select the specific MQTT server platform. Currently supported platforms include Alibaba Cloud MQTT, China Mobile OneNET, Huawei Cloud MQTT, and Tencent Cloud MQTT. “Other Cloud” refers to any cloud server that complies with the standard MQTT protocol.
- Enter the MQTT server address, which can be either an IP address or a domain name.
- Enter the MQTT server port number.
- Set the MQTT ping interval to maintain the connection with the MQTT server.
- Enter the MQTT triplet parameters for authentication (the parameter names may vary slightly across platforms; users only need to fill them in according to the values generated by the selected platform).
- Each serial port supports two groups of publish and subscribe topics. Users must correctly configure the topic parameters according to the MQTT platform requirements; otherwise, data transmission and reception may be affected.

Note:

- The following port numbers are reserved by the system and must not be reused: 80, 443, 4500, 4800, 57050, 57051, 57850, 57851.
- The device and the remote device must use the same baud rate, parity, data bits, and stop bits.
- If the device operates in UDP mode, the remote device must also operate in UDP mode. If the device operates in TCP Client mode, the remote device must operate in TCP Server mode. If the device operates in TCP Server mode, the remote device must operate in TCP Client mode.
- In UDP Multicast mode, the same multicast address can only be used once. A multicast address must not be configured for multiple serial ports.
- When long data frames are frequently transmitted or when high data transmission performance is required, adjust the baud rate appropriately and increase the transmission interval to prevent garbled data or packet loss caused by a low serial port speed.
- When configuring the device, ensure that the connected RS232/485/422 devices stop sending data to the serial server to avoid garbled characters.
- When Modbus_ASCII_Master operates in transparent transmission mode, a maximum of 60 registers can be read at one time.
- Due to the influence of serial port speed, if Modbus data timeouts occur, configure an appropriate Modbus receive timeout on the web interface. At the same time, the host system's read timeout should be extended accordingly based on the baud rate.
- To use the RealCOM function, the serial server firmware version must be V1.x.9.210512 or above, and the virtual COM port utility software version must be V1.0.300.05 or above.
- Different MQTT servers have different requirements for the Ping interval: Alibaba Cloud requires 60–300 seconds, OneNET requires 10–1800 seconds, and Huawei Cloud requires 30–120 seconds. It is recommended not to configure the value too high or too low, with typical values being 60s or 120s.

3.4. Serial Port Information

The Serial Port Information page is used to display the current configuration parameters and connection status of the serial port, as shown in Figure 3-28 below.

(Internet explorer 7.0 or above is

Device Info	Serial Port No. : COM1 Serial Port Status: Disabled Sending Bytes Count: 0 Receiving Bytes Count: 0			
Serial Port Config	Serial Mode	Baud Rate	Data Bits	Stop Bit
Serial Port Info	RS485	9600	8	1
Port Management	Parity Bit	Packing Length	Packing Interval	Large traffic transmission
Network Address	None	500	50	Disabled
User Password	Working Mode	Local Port	Destination Address	Destination Port
System Info	UDP Client	-	-	-
Log Management	Serial Port No. : COM2 Serial Port Status: Disabled Sending Bytes Count: 0 Receiving Bytes Count: 0			
System Management	Serial Mode	Baud Rate	Data Bits	Stop Bit
	RS485	9600	8	1
	Parity Bit	Packing Length	Packing Interval	Large traffic transmission
	None	500	50	Disabled
	Working Mode	Local Port	Destination Address	Destination Port
	UDP Client	-	-	-
	Serial Port No. : COM3 Serial Port Status: Disabled Sending Bytes Count: 0 Receiving Bytes Count: 0			
	Serial Mode	Baud Rate	Data Bits	Stop Bit
	RS485	9600	8	1
	Parity Bit	Packing Length	Packing Interval	Large traffic transmission
	None	500	50	Disabled
	Working Mode	Local Port	Destination Address	Destination Port
	UDP Client	-	-	-
	Serial Port No. : COM4 Serial Port Status: Disabled Sending Bytes Count: 0 Receiving Bytes Count: 0			
	Serial Mode	Baud Rate	Data Bits	Stop Bit
	RS485	9600	8	1
	Parity Bit	Packing Length	Packing Interval	Large traffic transmission
	None	500	50	Disabled
	Working Mode	Local Port	Destination Address	Destination Port
	UDP Client	-	-	-

Figure 3-28 Serial Port Information Page

3.5. Port Management

This page allows you to restart a specified serial port on the serial device server, as shown in Figure 3-29.

Device Info	Serial reset	
Serial Port Config	Serial Port No.	Serial reset
Serial Port Info	1	☐
Port Management	2	☐
Network Address	3	☐
User Password	4	☐
System Info	5	☐
Log Management	6	☐
System Management	7	☐
	8	☐
	Select All Apply	

Figure 3-29 Port Management Interface

Select the corresponding serial port and click “Apply” to restart the selected port.

3.6. Network Address

The Network Address module includes network protocol, IP address, subnet mask, default gateway, and DNS address.

3.6.1. Network Address

This function is used to assign a specific IP address to the serial device server. The factory default IP address of the serial server is 192.168.16.253.

The network address configuration page is shown in Figure 3-30.

Device Info	ETH1	
Serial Port Config	Network Protocol	☒ Static Address ☐ DHCP
Serial Port Info	IP Address	192.168.16.253
Port Management	Netmask	255.255.255.0
Network Address	Gateway	192.168.16.1
User Password	DNS	192.168.16.1
System Info		
Log Management	Configuration Cancel	
System Management		

Figure 3-30 Network Address Interface

- Mode:** Select Independent Segment Mode or Cascade Mode. In Independent Segment Mode, the two network interfaces operate on separate network segments. In Cascade Mode, multiple devices can be connected in series via Ethernet cables. In this case, only the first device needs to be connected to the external network, and the subsequent devices can also communicate.

(In Cascade Mode, the parameters configured for the eth1 interface are used.)

- **Network Protocol:** Select Static IP or DHCP.
- **IP Address:** An IP address is a 32-bit address assigned to devices connected to the Internet. It consists of two parts: the network ID (net-id) and the host ID (host-id).
- **Subnet Mask:** The subnet mask is a 32-bit value corresponding to an IP address, consisting of a series of 1s and 0s. It divides the IP address into the subnet portion and the host portion. The bits corresponding to 1s in the mask represent the subnet address, while the remaining bits represent the host address. The default masks are 255.0.0.0 for Class A addresses, 255.255.0.0 for Class B addresses, and 255.255.255.0 for Class C addresses.
- **Default Gateway:** The default gateway, also known as the default route, is used when the destination address of an IP packet does not match any specific route in the routing table. In such cases, the device forwards the packet to the default route, typically another router, which then determines how to further forward the packet.
- **DNS:** The IP address of the DNS server. When using a static IP address, this field must be filled in manually. If no specific DNS server is required, the default gateway IP address is typically used.

After modifying the address settings, click the [Configure] button to submit the changes to the serial server. The system will then switch to a waiting page, as shown in Figure 3-31.

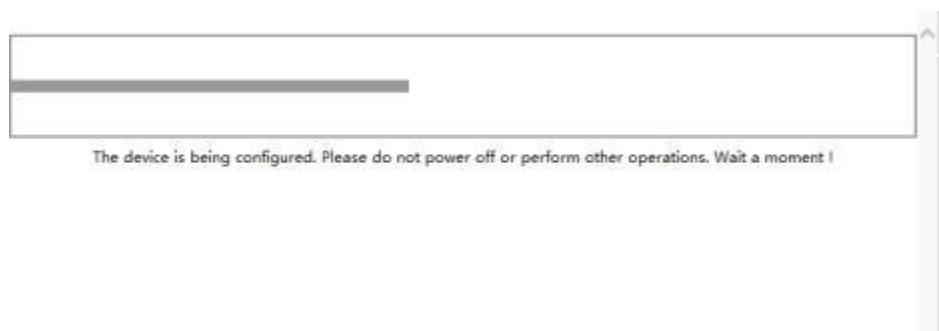


Figure 3-31 Waiting Page After User Modifies Address

When the progress bar on the screen completes, the serial server will restart the Web server, and the user must log in again.

Note:

- When the device enters the waiting page after configuring the IP address, do not power off the device or perform other operations, otherwise the IP address modification may fail.
- The configured IP address and default gateway must be in the same network segment.
- If the device obtains its IP address via DHCP, after rebooting, the user must use the company's Network Management Utility to search for the device in order to determine its newly assigned IP address.
- The Cport3108 series has only one Ethernet port and does not support Cascade Mode or Independent Segment Mode.

3.7. User Password

The User Password module is mainly used for changing passwords.

3.7.1. User Password

The Web server of this serial server provides three different levels of user permissions:

- **Guest:** Can only view the current configuration of the serial server and cannot make any changes. The username and password are both “none” and cannot be modified.
- **Regular User:** Can configure the various functional parameters of the serial server. The username is fixed as “admin” and cannot be changed. The initial password is “admin” and can be modified on this page.
- **Administrator:** Has the highest level of permissions. If the regular user password is forgotten, the administrator account can be used to log in and reset the device password. The username is fixed as “admin,” and the password is the last six digits of the device’s eth1 MAC address. (If the MAC address is unknown, it can be viewed by logging in as a guest.)

The login password must consist of 4–12 valid characters, including uppercase and lowercase letters and numbers. When changing the password, it must be entered twice, and both entries must match. The page is shown in Figure 3-32.

(Internet explorer 7.0 or above is required)

Figure 3-32 User Password Interface

- **Username:** The device username is fixed as “admin” and cannot be modified.
- **New Password:** Set the password for this user account. It must consist of 4–12 characters, including uppercase and lowercase letters and numbers.
- **Confirm New Password:** Re-enter the password to ensure it is entered correctly.

Note:

- This page modifies the password for the regular user account.
- For security reasons, it is recommended to change the default password immediately after the first login.

3.8. System Information

The System Information page allows users to configure the device model, name, and view related information, as shown in Figure 3-33.

The screenshot displays the 'System Info' configuration page. On the left is a vertical menu with options: Device Info, Serial Port Config, Serial Port Info, Port Management, Network Address, User Password, System Info (highlighted in orange), Log Management, and System Management. The main content area has a teal header 'System Info'. Below it, four fields are listed: 'Device Type' with value 'Cport3108-485', 'Device Name' with value 'managed_dev', 'Device Platform' with value 'I324020180', and 'Device ID' with value 'MSM0152512090501'. Each field has a description in parentheses: '(By Numbers, letters, _ +, - and other characters)' for Device Type and Device Name, and '(By Numbers, letters, _ +, - and other characters)' for Device Name. At the bottom right are 'Configuration' and 'Cancel' buttons.

Field	Value	Description
Device Type	Cport3108-485	(By Numbers, letters, _ +, - and other characters)
Device Name	managed_dev	(By Numbers, letters, _ +, - and other characters)
Device Platform	I324020180	
Device ID	MSM0152512090501	

Figure 3-33 System Information Interface

- **Device Model:** Users can customize the model name of the serial server.
- **Device Name:** Users can customize the name of the serial server.
- **Device Platform:** The manufacturer's platform name. This parameter cannot be modified by the user.
- **Device ID:** The factory-assigned serial number of the serial server. This parameter cannot be modified by the user.

3.8.1. Log Management

This page allows users to manage the operational logs of the serial server, including local storage, network storage, USB storage, and serial log output, as shown in Figure 3-34.

Device Info	Local Storage	
Serial Port Config	Local Log	☐ Enable ☒ Disable
Serial Port Info	Export Log	Export
Port Management		
Network Address	Network Log	
User Password	Network Log	☐ Enable ☒ Disable
System Info	Remote IP	192.168.30.140
Log Management	Remote Port	9999 (1~65535)
System Management	Local Port	9998 (1~65535)
	Serial Port Log Output	
	Log output	☐ Enable ☒ Disable
	Output serial port	COM1
Configuration Cancel		

Figure 3-34 Log Management Interface

- Local Storage:** This function saves key operational log information of the serial server on the device itself. When local logging is enabled, clicking the Export button allows users to download the logs in text format to a PC. If local logging is disabled, logs cannot be exported. Since local log storage frequently writes to the internal storage chip of the serial server, it is recommended to enable this feature only when necessary.
- Network Storage:** This function transmits the serial server's operational logs to a remote UDP server via UDP. Users need to specify the IP address and port of the remote UDP server.
- USB Storage:** This function records the serial server's operational logs in text format on a USB drive. Users must insert the USB drive into the serial server's USB port. (Only supported by the Cport3208 series)
- Serial Log Output:** This function outputs the serial server's operational logs to a specified serial port. Users can select a port from the dropdown menu. Once a port is designated for log output, other transparent transmission or Modbus functions on that port will be disabled.

3.9. System Management

This page allows users to perform various system operations on the serial server, including reboot, restore factory settings, and firmware upgrade. Users are advised to operate with caution, as improper use may damage the serial server. The interface is shown in Figure 3-35.

Internet Explorer 7.0 or above is

Device Info	Device Restart
Serial Port Config	Restart The Device Confirm
Serial Port Info	
Port Management	
Network Address	Restore Factory Settings ☒ Keep the current IP address
User Password	Restore Factory Settings Confirm
System Info	
Log Management	Device Upgrade
System Management	Select Upgrade File Confirm Browse
	No Data Device Restart
	Network no data restart interval 0 (0~65535)s
	Serial no data restart interval 0 (0~65535)s
	Confirm
	NTP Sync Time
	NTP Function ☐ Enable ☒ Disable
	Server Address ntp.ntsc.ac.cn
	Time Zone 8
	Configuration Cancel

Figure 3-35 System Management Interface

Device Reboot: This function performs a software reboot of the serial server. Before the server fully restarts, it is inactive and cannot forward any data packets. This software reboot differs from a hardware power-on reset; it is equivalent to a system software reset, similar to a “warm restart” in Windows. The main advantage of this function is that it enables remote rebooting of the serial server—users can reboot it remotely as long as they have access. Click the Start button, and a confirmation dialog will appear (as shown in Figure 3-36). After clicking OK, the page transitions to a waiting screen. When the progress bar completes, the serial server restart is finished.

Warning:
The system will restart!
Please confirm whether to perform this operation?

Figure 3-36 Warning Message for Device Reboot

Restore Factory Settings: This function restores the serial server to its factory default configuration and automatically reboots the device. Before the server restarts successfully, it will be inactive and cannot forward any data packets. This function is useful when incorrect settings cause the serial server to malfunction, allowing it to return to the default factory configuration. On the right, there is an option “Retain Current IP Address”. If checked, the current IP address will be kept; if unchecked, the IP address will also be reset to the factory default: 192.168.16.253. Click the Start button, and a confirmation dialog will appear (as shown in Figure 3-37). After clicking OK, the page will switch to a waiting screen. Once the progress bar completes, the serial server will have restored its factory settings.

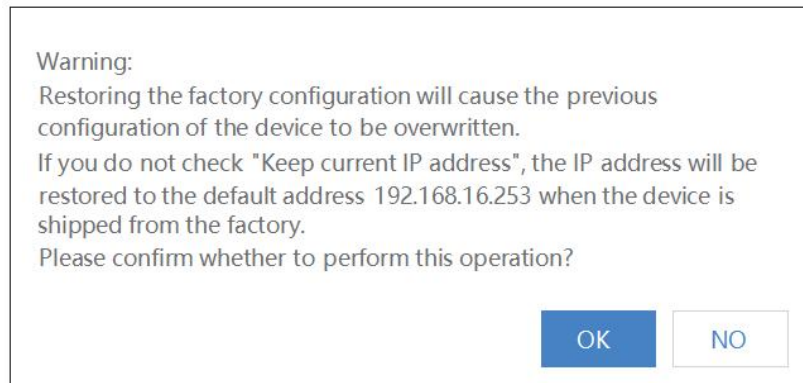


Figure 3-37 Factory Reset Warning for the Device

Device Upgrade: This function is used to perform a system software upgrade for the serial server. Users can obtain the upgrade program via email or from the company’s website. Please ensure that the device model and version match the upgrade program, as using a mismatched program may cause the upgrade to fail. After obtaining the upgrade program, click the Browse button to select the upgrade file, then click Start. A confirmation dialog will appear (as shown in Figure 3-38). Click OK to proceed to the waiting page. Once the progress bar completes, the serial server software upgrade will be finished.

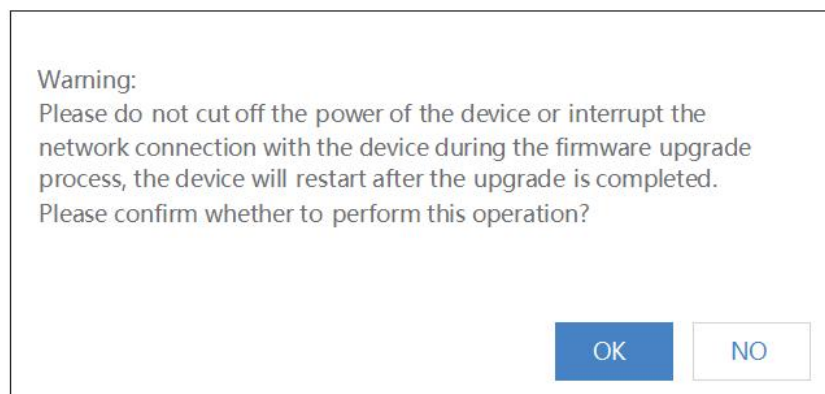


Figure 3-38 Device System Upgrade Warning

No-Data Device Reboot: This function allows the serial server to automatically restart if no data is transmitted or received through the network or serial ports for an extended period. The reboot time can be set between 0–59 seconds, but the feature will not take effect for values less than 60 seconds. Only when the time is set to 60 seconds or more will the no-data reboot function be active. The default value is 3600 seconds, i.e., one hour.

NTP Time Synchronization: This function allows the serial server to synchronize its time with an NTP server. Users need to specify the NTP server’s IP address or domain name, and the local time

zone must be selected from the dropdown menu.

Note:

- Restoring factory settings will reset all device configurations to their default values. If you wish to retain the current IP address, please check “Keep Current IP Address”; otherwise, the IP address will be reset to the default 192.168.16.253.
- When upgrading the device software, always ensure that the upgrade file is correct. Using an incorrect upgrade file may damage the device software and cause the serial server to malfunction.
- Do not operate the serial server or click on the Web page during the upgrade process. If a misoperation interrupts the upgrade, restart the serial server first before attempting the upgrade again.
- Power must not be turned off during the entire upgrade process, as a power outage may cause permanent damage to the device. If a power failure occurs during the upgrade, immediately send the device back to the company for resolution.
- When configuring the “No Data Device Reboot” parameter, avoid using Chrome version 68, as this may cause the configuration page to become unresponsive.

4. Maintenance and Service

From the date of product shipment, Come-Star Communication (Wuhan) Co., Ltd. provides a five-year product warranty. According to the product specifications of Come-Star Communication (Wuhan) Co., Ltd., during the warranty period, if the product has any malfunction or functional operation failure, Come-Star Communication (Wuhan) Co., Ltd. will repair or replace the product for the user free of charge. However, the above commitment does not cover damage caused by improper use, accidents, natural disasters,

incorrect operation or incorrect installation. In order to ensure that consumers benefit from the series of products of Come-Star Communication (Wuhan) Co., Ltd., help and problem solving can be obtained through the following methods:

- Internet service
- Call the technical support office
- Product repair or replacement

4.1. Internet Service

Through the technical support section of Come-Star Communication (Wuhan) Co., Ltd. website, you can get more useful information and usage skills.

4.2. Technical Support Hotline

Users who use the products of Come-Star Communication (Wuhan) Co., Ltd. can call the technical support office of Come-Star Communication (Wuhan) Co., Ltd. Come-Star Communication (Wuhan) Co., Ltd. has professional technical engineers to answer your questions and help you in the first time Solve the product or usage problems you encountered.

4.3. Product Repair or Replacement

For product maintenance, replacement or return, in accordance with the processing procedures of Come-Star Communication (Wuhan) Co., Ltd., you should first contact Come-Star Communication (Wuhan) Co., Ltd.

The technical staff of the company will confirm, and then work with the sales staff of Come-Star Communication (Wuhan) Co., Ltd. to complete the repair, replacement or return of the product.



Contact Us

COME-STAR COMMUNICATION(WUHAN) CO., LTD.

Address: Puneng Industrial Park, Fenghuang Garden 1st Road, East Lake
High-Tech Development Zone, Wuhan, China.

Tel: +86-027-59257958

Mail: sales@come-star.com

Official site: www.come-star.com

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