

HXSP-2108E-C

RS232/RS422/RS485-ETH User Manual



Contents

HXSP-2108E-C RS232/RS422/RS485-ETH Manual.....	1
Features	3
1. Get Start.....	4
1.1. Application Diagram	4
1.2. Hardware Design.....	5
1.2.1. Hardware Dimensions	5
1.2.2. DB9 Pin definition.....	5
1.2.3. RS422/RS485 Pin definition.....	6
1.2.4. LED.....	6
2. Product Functions.....	7
2.1. Basic Functions.....	7
2.1.1. Static IP/DHCP.....	7
2.1.2. Restore default settings.....	8
2.2. Socket functions	9
2.2.1. TCP Client.....	9
2.2.2. TCP Server.....	10
2.2.3. UDP Client.....	11
2.2.4. UDP Server.....	13
2.3. Serial port.....	14
2.3.1. Serial port basic parameters.....	14
2.3.2. VCOM Application	15
2.3.3. Serial Package Methods	15
2.4. Features.....	16
2.4.1. Identity Packet Function.....	16
3. Disclaimer	17
4. Update History	17

Features

- n** 10/100Mbps Ethernet port, support Auto-MDI/MDIX.
- n** Support TCP Server, TCP Client, UDP Client, UDP Server, HTTPD Client.
- n** Support Baud rate from 600bps to 230.4bps; Support None, Odd, Even, Mark, Space.
- n** Support heartbeat packet and identity packet.
- n** Support RS232, RS485 and RS422.
- n** Support web server, AT command and setup software to configure module.
- n** Support timeout reset function.
- n** Support TCP Client non-persistent function.
- n** Support DHCP/Static IP.
- n** Support software/hardware reload.
- n** Support virtual serial port with RS232_422_485-ETH_ConfigureTool_V1.1 software.

1. Get Start

Product pictures



1.1. Application Diagram



Figure 2 Application diagram

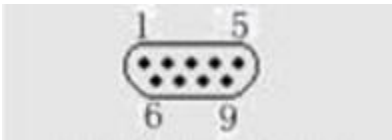
1.2. Hardware Design

1.2.1. Hardware Dimensions



Figure 3 Hardware dimensions

1.2.2. DB9 Pin definition



Pin	2	3	5	1, 4, 6, 7, 8	9
Definition	RXD	TXD	GND	NC	Default NC, can be used as power pin

Figure 4 DB9 Pin

1.2.3. RS422/RS485 Pin definition

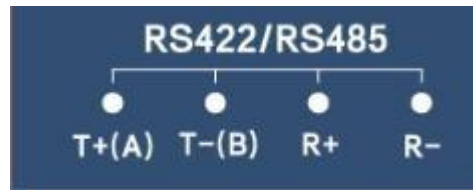


Figure 5 RS422/RS485 pin definition

RS422: R+/R- are RS422 RXD pins and T+/T- are RS422 TXD pins.

RS485: A/B are RS485 RXD/TXD pins.

1.2.4. LED

Indicator	Status
PWR	On: Power on
	Off: Power off
WORK	Flash a period every one second: Working normally
	Flash a period every 200ms: Upgrading status
	Off: Not working
LINK	LED for Link function. Link function can only work in TCP Client/Server mode. TCP connection established, LINK on; TCP connection disconnect normally, LINK off immediately; TCP connection disconnect abnormally, Link off with about 40 seconds delay.
	Enable Link function in UDP mode, LINK on.
TX	On: Sending data to serial
	Off: No data sending to serial
RX	On: Receiving data from serial
	Off: No data receiving from serial

Figure 6 LED

2. Product Functions

This chapter introduces the functions of HXSP-2108E-C RS232/RS422/RS485-ETH as the following diagram shown, you can get an overall knowledge of it.

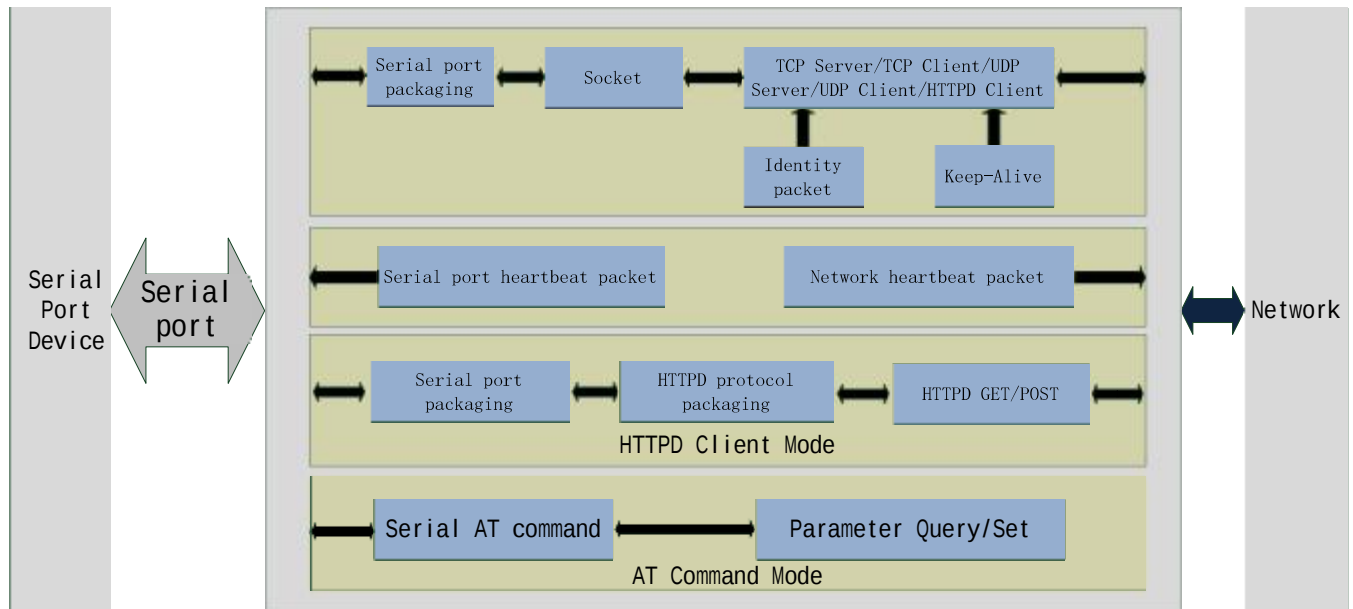


Figure 7 Product Functions diagram

2.1. Basic Functions

2.1.1. Static IP/DHCP

There are two ways for module to get IP address: Static IP and DHCP.

Static IP: Default setting of module is Static IP and default IP is 192.1.200. When user set module in Static IP mode, user need set IP, subnet mask and gateway and must pay attention to the relation among IP, subnet mask and gateway.

DHCP: Module in DHCP mode can dynamically get IP, Gateway, and DNS server address from Gateway Host. When user connect directly to PC, module can't be set in DHCP mode. Because common computer does not have the ability to assign IP addresses.

User can change Static IP/DHCP by setup software. Setting diagram as follow:

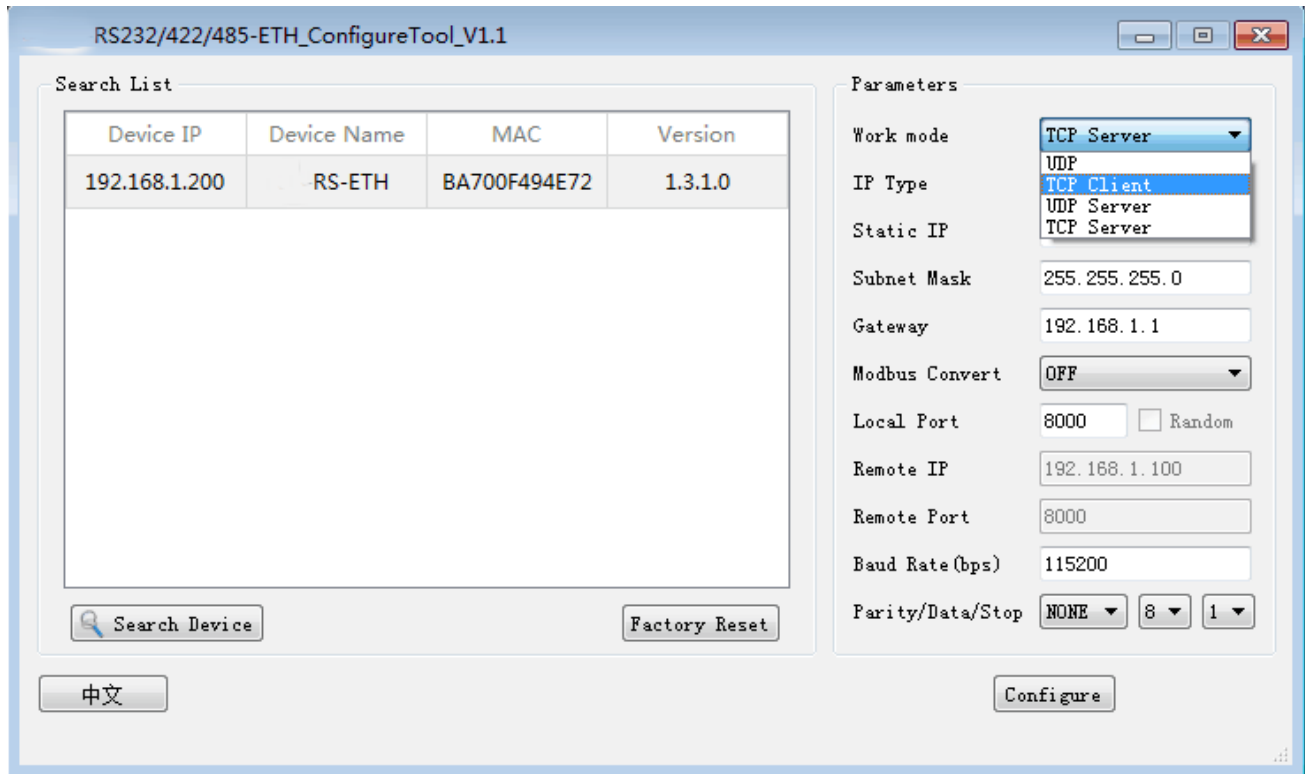


Figure 8 Static IP /DHCP

2.1.2. Restore default settings

Hardware: User can press Reload over 5 seconds and less than 15 seconds then release to restore default settings.

Software: User can use setup software to restore default settings.

2.2. Socket functions

HXSP-2108E-C RS232/RS422/RS485-ETH socket support TCP Server, TCP Client, UDP Server, UDP Client .

2.2.1. TCP Client

TCP Client provides Client connections for TCP network services. TCP Client device will connect to server to realize data transmission between the serial port and server. According to the TCP protocol, TCP Client has connection/disconnection status differences to ensure reliable data transmission.

TCP Client mode support Keep-Alive function: After connection is established, module will send Keep-Alive packets about every 15 seconds to check the connection and will disconnect then reconnect to TCP server if abnormal connection is been checked by Keep-Alive packets. TCP Client mode also support non-persistent function.

HXSP-2108E-C RS232/RS422/RS485-ETH work in TCP Client mode need connect to TCP Server and need set the parameters: Remote Server Addr and Remote Port Number. HXSP-2108E-C RS232/RS422/RS485-ETH work in TCP Client won't accept other connection request except target server and will access server with random local port if user set local port to zero.

Device IP	Device Name	MAC	Version
192.168.1.200	RS-ETH	BA700F494E72	1.3.1.0

User can set HXSP-2108E-C RS232/RS422/RS485-ETH in TCP Client mode and related parameters by setup software or web as follows:

Figure 10 TCP Client

2.2.2. TCP Server

TCP Server will listen network connections and build network connections, commonly used for communication with TCP clients on a LAN. According to the TCP protocol, TCP Server has connection/disconnection status differences to ensure reliable data transmission.

TCP Server mode also support Keep-Alive function.

HXSP-2108E-C RS232/RS422/RS485-ETH work in TCP Server mode will listen local port which user set and build connection after receiving connection request. Serial data will be sent to all TCP Client devices connected to RS232 /RS422/RS485-ETH in TCP Server mode simultaneously.

HXSP-2108E-C RS232/RS422/RS485-ETH work in TCP Server support 16 client connections at most and will kick off oldest connection beyond maximum connections (User can enable/disable this function by web server).

User can set HXSP-2108E-C RS232/RS422/RS485-ETH in TCP Server mode and related parameters by setup software or web server as follows:

Web V1.3.0 | Firmware : V1.3

Parameter Settings

Local IP Setting

IP Type : Static IP

Static IP : 192.168.1.100

Subnet Mask : 255.255.255.0

Gateway : 192.168.1.1

Network Parameter Setting

Work Mode : TCP Server

Modbus Conversion : OFF

Remote IP : 192.168.1.100

Remote Port : 8000

Local Port : 8000 ☐ Random

Serial Parameter Setting

Baud Rate : 115200 bps

Data Bits : 8 bit

Parity : None

Stop Bit : 1 bit

Save

Help

- Baud rate:**
000-2000000bps
- Port :**
1-65535
0 is random
- Remote IP :**
The address of the remote server to be connected when the module is acting as a client. when the server is a TCP server, this parameter is invalid.

Official Website: So-link.com

Figure 11 TCP Server

2.2.3. UDP Client

UDP transport protocol provides simple and unreliable communication services. No connection connected /disconnected.

In UDP Client mode, HXSP-2108E-C RS232/RS422/RS485-ETH will only communicate with target IP/Port. If data not from target IP/Port, it won't be received by HXSP-2108E-C RS232/RS422/RS485-ETH

In UDP Client mode, if user set remote IP as 255.255.255.255, 3C-HXSP-2108E-C RS232/RS422/RS485-ETH can broadcast to entire network segment and receive broadcast data. After firmware version 4015, 306 support broadcasting in same network segment.(Such like xxx.xxx.xxx.255 broadcasting way).

User can set HXSP-2108E-C RS232/RS422/RS485-ETH in UDP Client mode and related parameters by setup software or web server as follows:

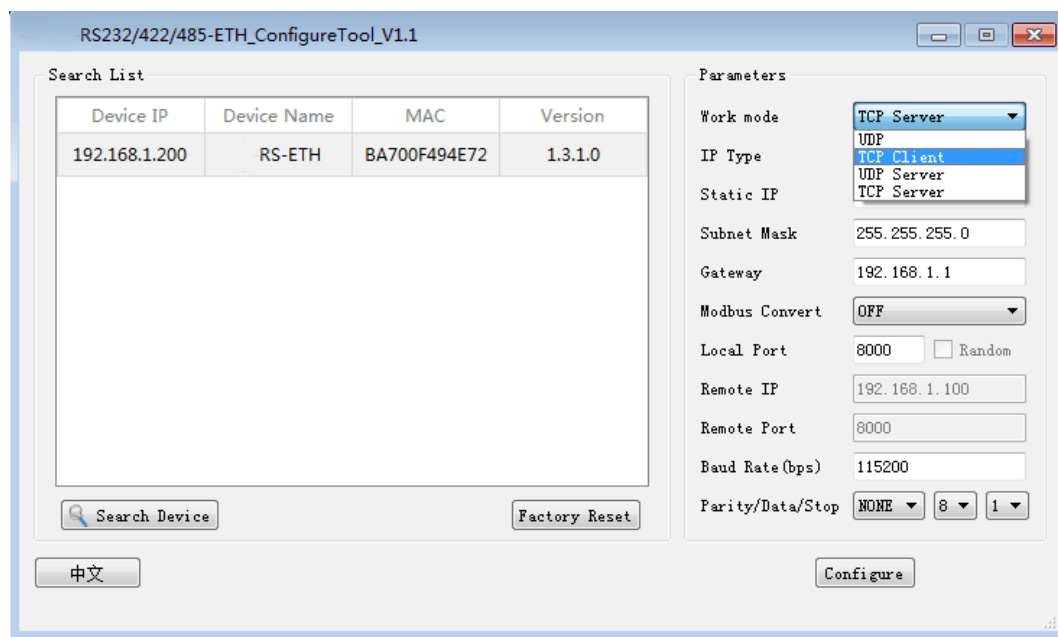


Figure 12 UDP Client

2.2.4. UDP Server

In UDP Server mode, HXSP-2108E-C RS232/RS422/RS485-ETH will change target IP every time after receiving UDP data from a new IP/Port and will send data to latest communication IP/Port.

User can set HXSP-2108E-C RS232/RS422/RS485-ETH in UDP Server mode and related parameters by setup software or web

server as follows:

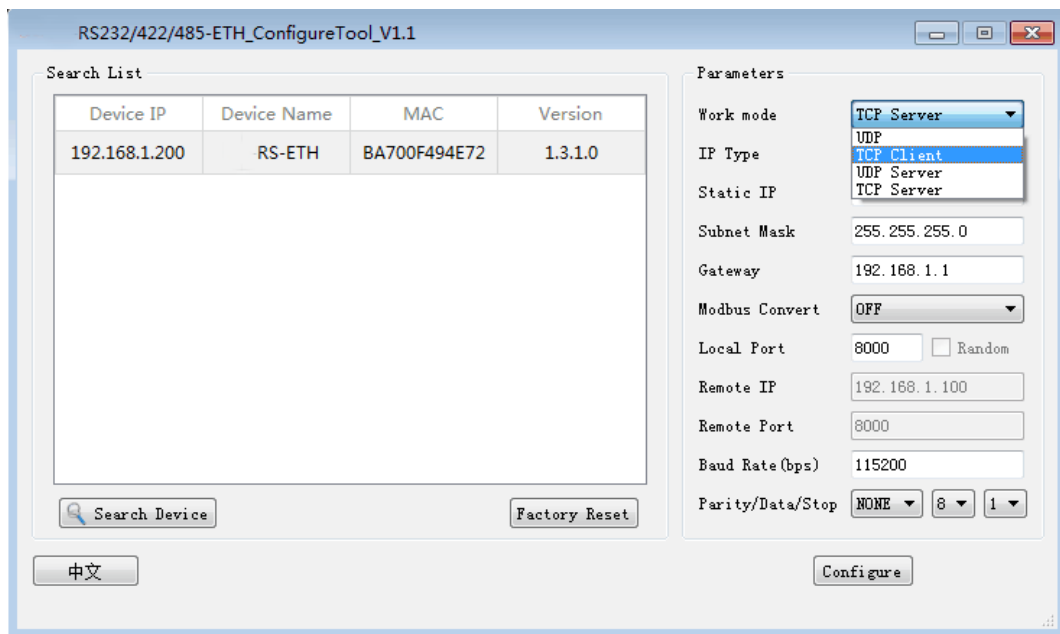


Figure 13 UDP Server

2.3. Serial port

HXSP-2108E-C RS232/RS422/RS485-ETH support RS232/RS485/RS422. User can refer to [1.2.2. DB9 Pin definition](#) [1.2.3. RS422/RS485 Pin definition](#) to connect and RS232/RS485/RS422 can't be used simultaneously.

2.3.1. Serial port basic parameters

Parameters	Default	Range
Baud rate	115200	600~230.4Kbps
Data bits	8	5~8
Stop bits	1	1~2
Parity	None	None, Odd, Even, Mark, Space

Figure 15 Serial port parameters

2.3.2. VCOM Application

User can use our simple Tool software. Through this software user can set up connection between HXSP-2108E-C RS232/RS422/RS485-ETH and virtual serial to solve the problem that traditional equipment PC software used in serial port communication way.

2.3.3. Serial Package Methods

For network speed is faster than serial. Module will put serial data in buffer before sending it to network. The data will be sent to Network as Package. There are 2 ways to end the package and send package to network - Time Trigger Mode and Length Trigger Mode.

HXSP-2108E-C RS232/RS422/RS485-ETH adopt fixed Package time (four bytes sending time) and fixed Package length (40 bytes).

2.4. Features

2.4.1. Identity Packet Function

Figure 17 Identity Packet application diagram

Identity packet is used for identify the device when module works as TCP client/UDP client. There are two sending methods for identity packet.

- l Identity data will be sent when connection is established.
- l Identity data will be add on the front of every data packet.

4. Disclaimer

This document provide the information of HXSP-2108E-C RS232/RS422/RS485-ETH products, it hasn't been granted any intellectual property license by forbidding speak or other ways either explicitly or implicitly. Except the duty declared in sales terms and conditions, we don't take any other responsibilities. We don't warrant the products sales and use explicitly or implicitly, including particular purpose merchantability and marketability, the tort liability of any other patent right, copyright, intellectual property right. We may modify specification and description at any time without prior notice.