HXSP-2108E Serial to TCP/IP Serial Device Server User Manual

HXSP-2108E-A RS-232 to Ethernet TCP/IP Serial Device Server

HXSP-2108E-B RS-485/RS-422 to Ethernet TCP/IP Serial Device Server

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1. Product Introduction

1.1. Product Description

The HXSP-2108E Serial to TCP/IP Serial Device Server is a bidirectional switching and transmission device from serial port to Ethernet TCP/IP protocol. It changes the traditional serial communication to Ethernet communication. It realized speed networking for serial device. The converter uses transparent communicate protocol, so that the user need not understand complex Ethernet TCP/IP protocol, need not modify old serial program, save your valuable time and money. The low price will improve your product's core competition, the easy, flexible configuration and High-availability will satisfy your steep demand, it is your ideal select.

1.2. Technical Specification

Serial Port Standard: Accord EIA RS-232, RS-485, RS-422 standard

Ethernet Port Standard: Accord 10Base-T/100 Base-T standard

Auto-detecting 10/100Mbps Ethernet interface

Connector: RJ-45, RS-232(HXSP-2108E-A), RS-485/RS-422(HXSP-2108E-B)

Baud Rate: 300bps~115200bps

Loading: RS-485/422 side support 32 or 128 nodes loopback

Serial Port Protection: 600W surge protection, 15KV ESD protection

Serial Port Transmission Range: RS-485/422 side 1200M, RS-232 side 15M

Protocol: Support TCP, UDP, ARP, ICMP

Ethernet Port Rate: 10/100Mbps

Ethernet Port Working Method: full-duplex or half-duplex

External 9VDC power supply, support Power Supply 7 to 56 VDC

Working Temperature: -10 to 80℃

Dimension: 92mm x 64mm x 24mm

1.3. External Connector

1.4. Installation

The HXSP-2108E Serial to TCP/IP Serial Device Server use WINDOWS application program ezConfig to set parameter through network. Therefore, user need install the network card in computer and set network environment. If it needs connect many HXSP-2108E equipments, user also need the network switchboard or HUB

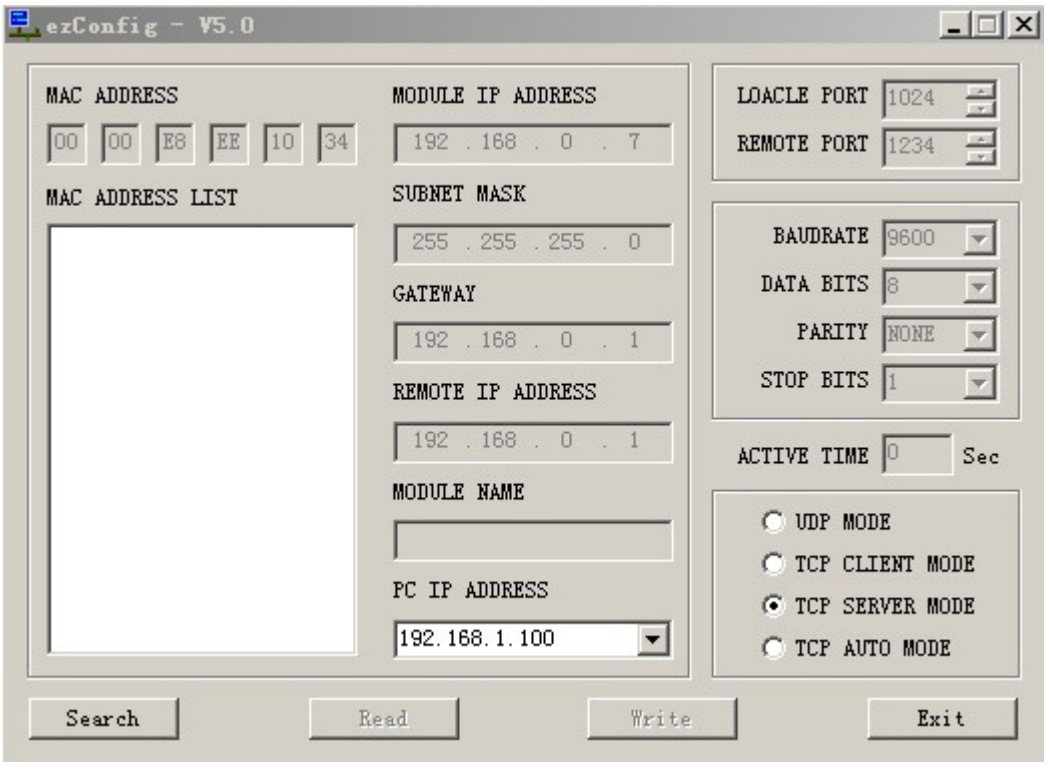
1) Install the network card and set IP address and subnet mask. IP address can be set casually if no connection with other computers in one identical network, such as: 192.168.X.Y (Note: In one identical local area network, X same, Y random, no duplication), the code of the subnet mask is 255.255.255.0 .If the computer is in the local area network, please follow the network administrator's setting.
2) Connect the computer network card to HXSP-2108E by Crossover Ethernet Cable or connect directly the network switchboard or HUB by straight Ethernet cable.
3) Connect serial port of HXSP-2108E with serial port of embedded equipment or PC machine by RS-232 cable (for testing HXSP-2108E-A)
4) HXSP-2108E would start to work after connecting power. PWR light is on and RUN light twinkles, which demonstrate HXSP-2108E work normally. LINK light is on, which demonstrates the correct physical connection. ACT light begins to twinkle when there is data packet receiving and dispatching, which shows the smooth connection between HXSP-2108E and identified network. Then, the connection process is completed.

2. Operating Guide

2.1. HXSP-2108E Disposition

HXSP-2108E adopt the transparent transmission means to deal with data, namely any data the serial port receives is retransmitted to the network. The user may use any communication protocol to realize network communication without changing the original procedure.

Then HXSP-2108E adopts WINDOWS application procedure-ezConfig and disposes parameter through network. Below is the initial contact surface:



Buttons function instruction:

SEARCH(S): To search HXSP-2108E converter in network, with the result demonstrated in physical address tabulation frame. After selecting one physical address, you can read or set this converter parameter.

READ(R): To read the current converter parameter. You can automatically read the corresponding parameter in the physical address tabulation or choose to read one in it.

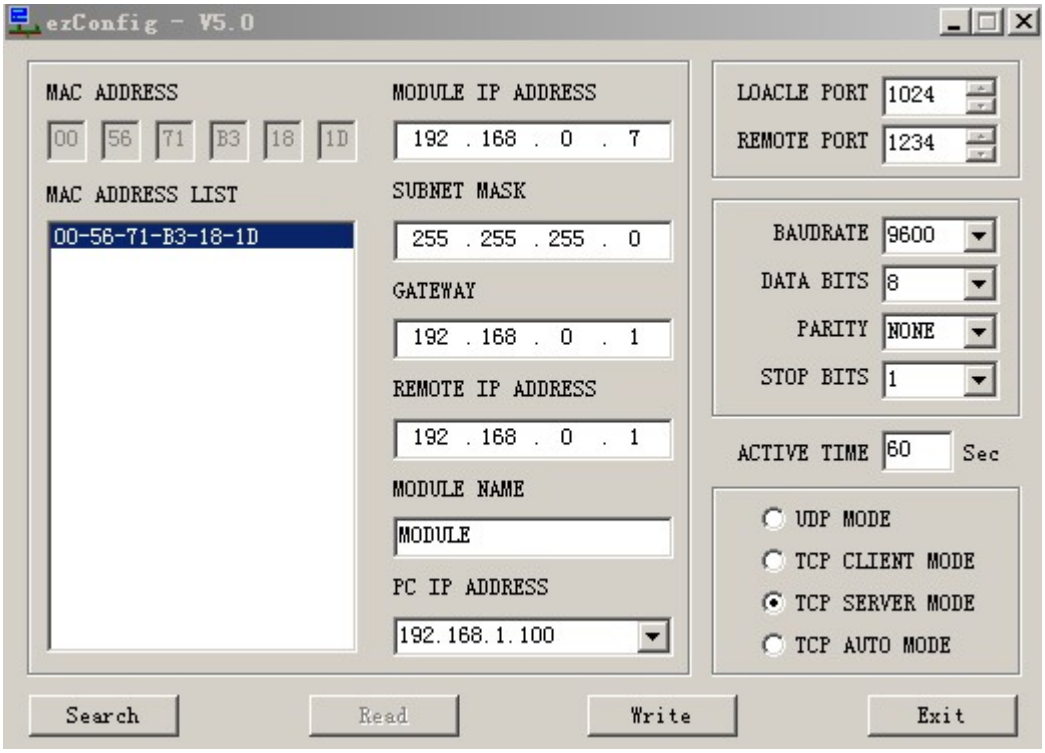
WRIAE (W): Button W is effective when you choose the converter in the physical address tabulation frame. You can insert any data in the corresponding frame. Click the button to write it into the converter. **Attention: Changing physics address leads to the replacement network connection which takes rather long time or using DOS order "ARP-D" to eliminate the ARP buffer to operate.**

EXIT(X): To close ezConfig, or click the ESC key.

The disposition step is as follows:

1. Correctly install and connect HXSP-2108E (RF. 1.4), move the ezConfig procedure, and

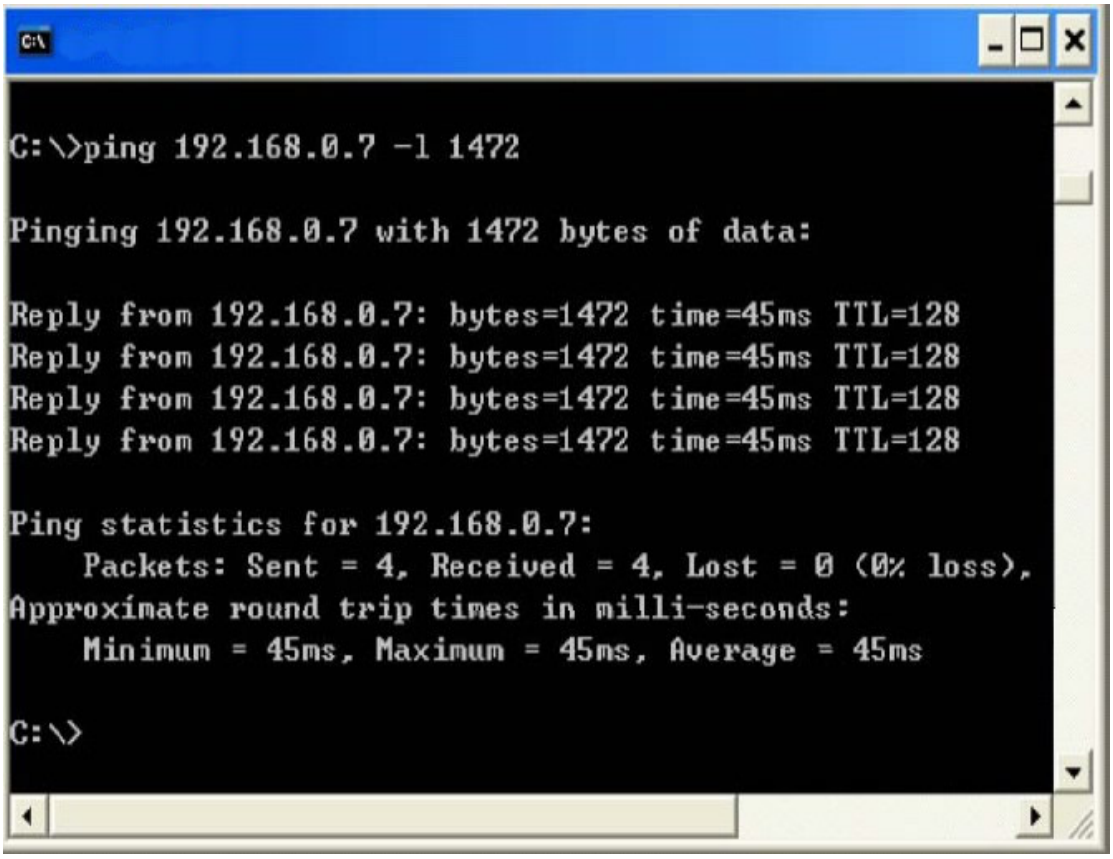
click [Search]. Physical address is shown in the physical address tabulation frame after the software found the converter as below:



2. Choose the physical address and the other parts would be efficient. Now read and set the converter parameter. Which can be reread to relative switch parameter is confirmed to be OK.

3. You can test its reach capability after setting is completed using PING test in DOS windows.

Note: The computer must be in the same identical local area network with the converter as follows:



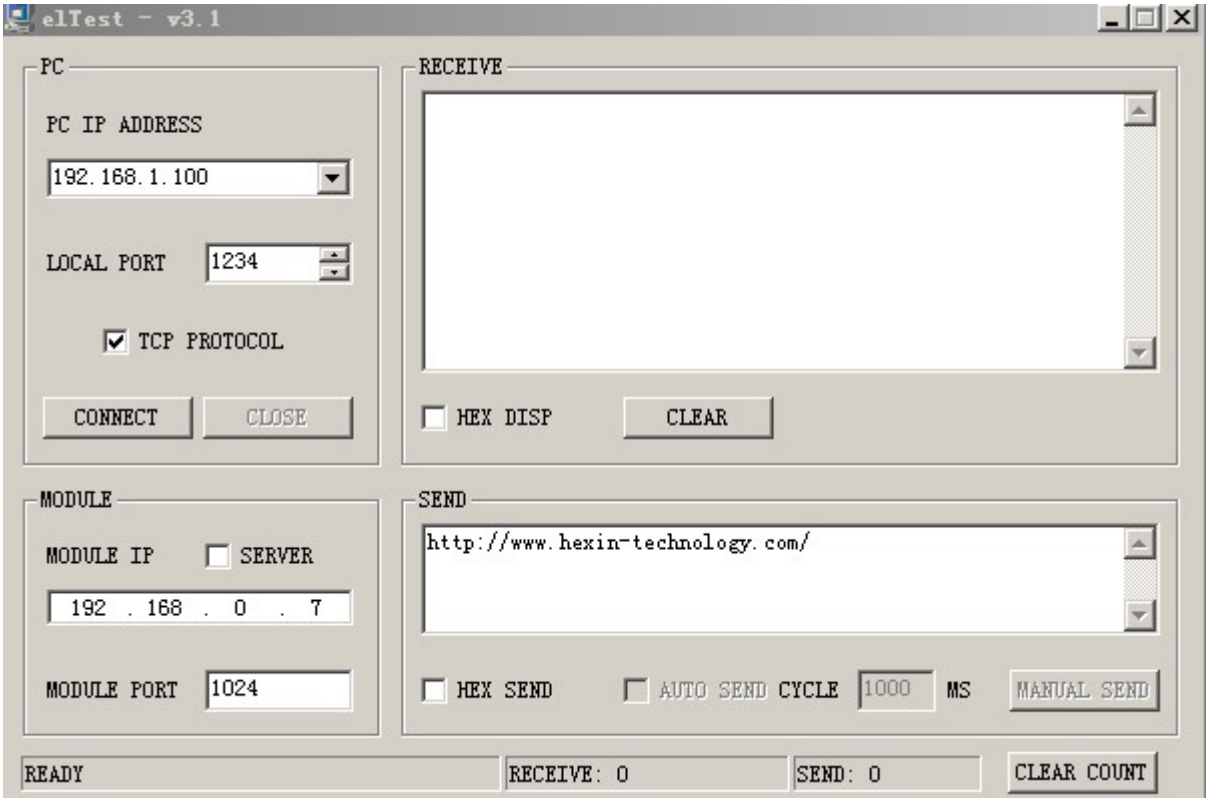
2.2. Communication Test

2.2.1. Stand-alone test

After the disposition completed, we need to carry on simple test to confirm the accuracy of the setting and HXSP-2108E. The single plane test adopts the means of receiving and dispatching of the data packets between the super terminal (the RS232 serial port) and WINDOWS application procedure e1Test (Ethernet TCP/IP) to confirm.

The single plane test step is as follows:

1) Correct install and connect HXSP-2108E (RF.1.4), moves e1Test procedure, set the remote IP address with the remote port to be HXSP-2108E and local port to be HXSP-2108E as remote port as follows:



[PC IP address] Choose PC IP address. The procedure automatically searches all IP address of the computer and chooses the most possible one. If wrong, you can choose through the frame.

[Local port] The port is to receive a TCP/UDP package.

[Communication protocol] Choose UDP protocol. Better not to choose TCP protocol

[Interception] Intercept the TCP connection of HXSP-2108E.

[Module IP Address] To show opposite party's IP Address.

[Module port] To show opposite party's port.

[HEX DISP] Choose it to show receiving data according to HEX DISP, or as ASCII code.

[Clear] Clear the contents of receive data frame.

[Hex send] Send according to hexadecimal system.

Note: The data only can be "0~9, a~f or A~F", no blank in it.

[Automatic send] Automatically send the data in the fixed time according to the sending cycle.

[Send cycle] Set the automatic sending cycle (ms).

[Send by handing] Send TCP/UDP data packet to assigned IP and port.

[Clear count] Clear the transmitting and the receiving count.

2) To connect the serial port of HXSP-2108E with the serial port of PC machine by RS232 cable; to open the super terminal, and to choose the port which connects HXSP-2108E to set relative baud rate (baud rate parameter disposed with ezConfig, automatically to be 19200), 8 data positions, 1 stop position, no verification and no class controls.

3) We have completed the hardware connection and the software establishment, now we can carry on normal communication. The character inputted in the super terminal would

appear in the e1Test receiving window (whether the super terminal can reshow tbe transmission character is decided by the corresponding set of converter), otherwise the e1Test transmission information can be seen in the super terminal window.

2.2.2. **running test**

The design goal of HXSP-2108E is to realize network communication by serial port with the extremely low cost. There is no requirement to understand TCP/IP protocol well and no regulation of the serial transmission format. You can definite any serial communication protocol. And you don't need change current communication procedure to realize the network communication.

Below we can simulate the relative test under this circumstance:

To dispose two HXSP-2108E converters, set their remote IP addresses to be the ones of the opposites. (Two HXSP-2108E should dispose in the same identical local area network), exchange their local port and remote port (opposite party's remote port to be its local port and the opposite party's local port to be its remote port, others set as required), and connect the serial port with its the PC serial port (Could be different serial port of one PC). To open the super terminal and set the relative parameter and the communication is established well. And the character input in one terminal will be shown in another terminal.

3. Application example

3.1 The long range data transmitting

3.2 Concentrate control system