

Embedded TCP/IP agreement serial port server USER GUIDE



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1 Product Introduction

1.1 Product Description

The 2108E serial embedded TCP/IP agreement serial port server is the bidirectional transformation facility from RS232 serial port to Ethernet TCP/IP agreement. Quick networking by changing the traditional serial port communication to network communication; transparent transmission without changing process; Low price to improve your product's core competition; Easy and simple nimble disposition and the reliable performance satisfy your any harsh application.

1.2 Technical Specification

Interface: 10 Base-T, RS232/485(DB9 female jack)

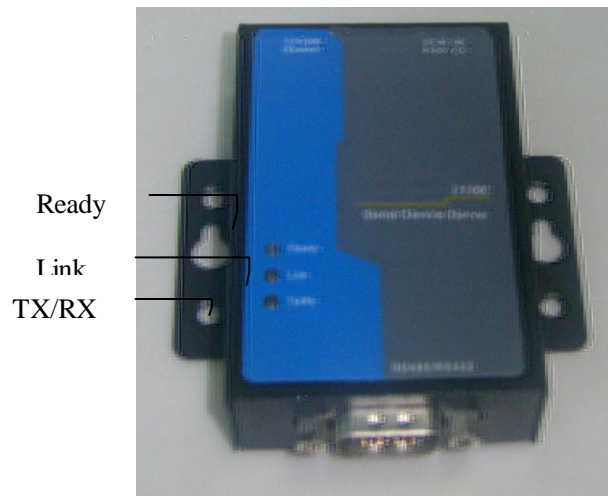
Agreement: TCP/UDP/IP/ICMP, Ethernet, ARP

Serial Port: 300bps-115200bps

Power Supply: DC5V+-10%

Dimension: 92*64*24mm (high-quality aluminum alloy shade case)

1.3 Exterior Connection



1.4 Installation

The 2108E serial embedded TCP/IP agreement serial port server adopts WINDOWS application procedure-ezConfig and disposes parameter through network. Therefore, we have to install the network card in computer and set good network environment. If it needs to connect other 2108E equipments, we shall have the network switchboard or HUB

1. To install the network card and dispose IP address and subnet covers

code. IP address can be disposed 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 covers is 255.255.255.0 .If the computer is in the local area network, please follow system manager' s arrangement.

2. To connect the computer network card interface to 2108E interface by overlapping or directly by straight line to the network switchboard or HUB.
3. To connect serial port of 2108E with serial port of embedded equipment or PC machine by RS232 cable (for testing 2108E)
4. 2108E would start to work after connecting power. PWR light is on and RUN light twinkles, which demonstrate 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 2108E and identified network. Then, the connection process is completed.

2. Operating Guide

2.1 2108E Disposition

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 agreement to realize network communication without changing the original procedure.

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



Buttons function instruction:

SEARCH(S): To search 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

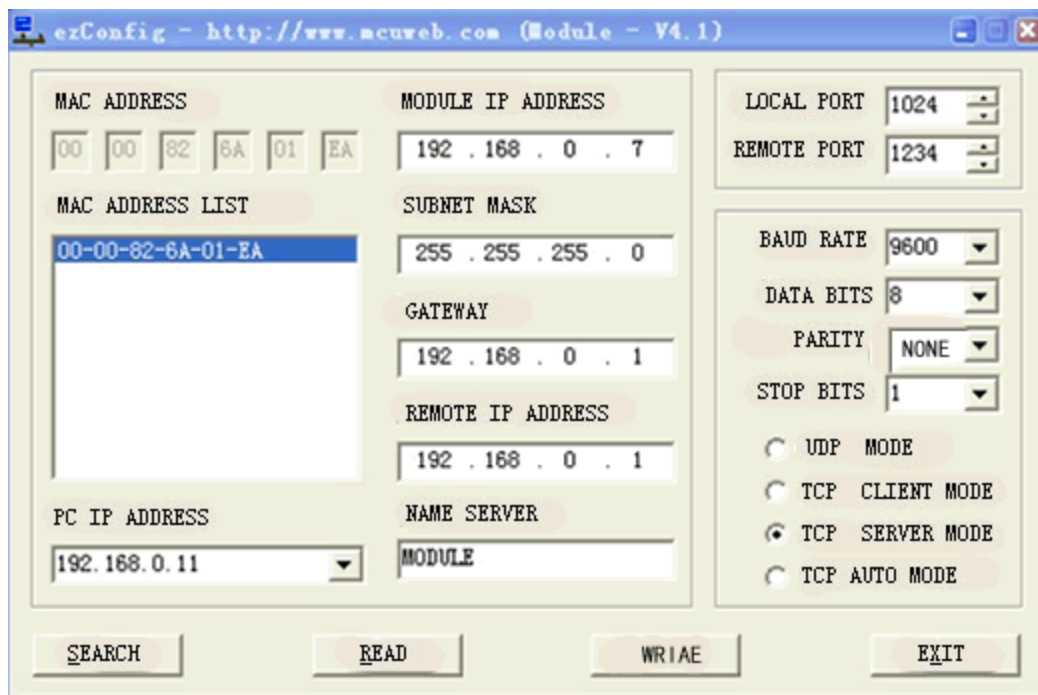
in the physical address tabulation frame. You can insert any data in the corresponding frame. Click the button to write it into the converter.

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.

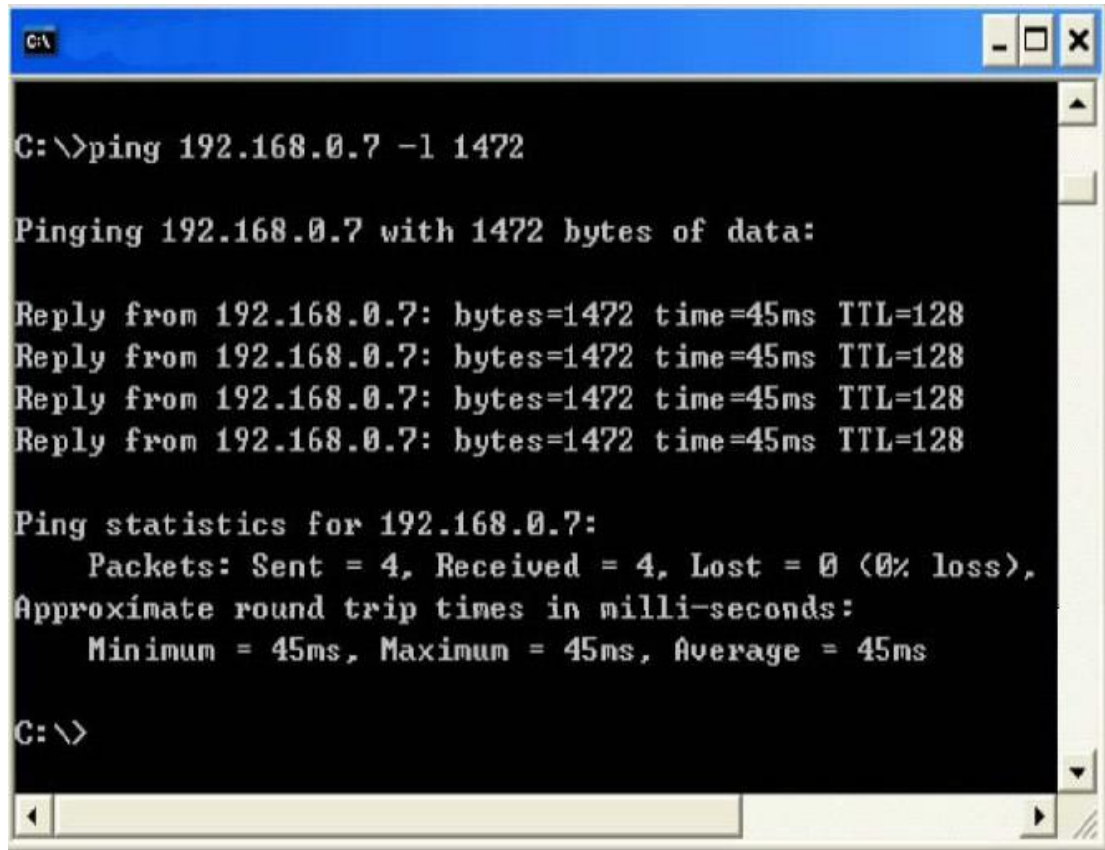
The disposition step is as follows:

1. Correctly install and connect 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:**



```
C:\>ping 192.168.0.7 -l 1472

Pinging 192.168.0.7 with 1472 bytes of data:

Reply from 192.168.0.7: bytes=1472 time=45ms TTL=128
Reply from 192.168.0.7: bytes=1472 time=45ms TTL=128
Reply from 192.168.0.7: bytes=1472 time=45ms TTL=128
Reply from 192.168.0.7: bytes=1472 time=45ms TTL=128

Ping statistics for 192.168.0.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 45ms, Maximum = 45ms, Average = 45ms

C:\>
```

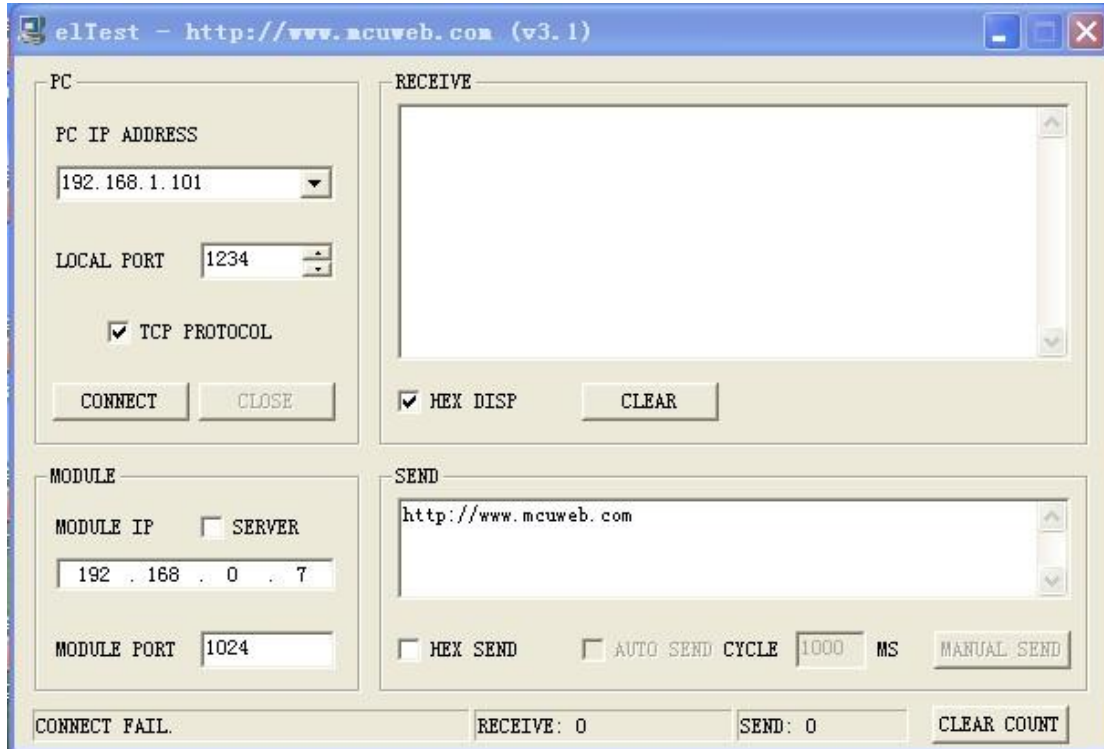
2.2 Communication Test

2.2.1 Single plane test

After the disposition completed, we need to carry on simple test to confirm the accuracy of the setting and 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 2108E (RF.1.4), moves e1Test procedure, set the remote IP address with the remote port to be 2108E and local port to be 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 agreement] Choose UDP agreement. Better not to choose TCP agreement

[Interception] Intercept the TCP connection of 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 2108E with the serial port of PC machine by RS232 cable; to open the super terminal, and to choose the port which connects 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 the 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 Movement test

The design goal of 2108E is to realize network communication by serial port with the extremely low cost. There is no requirement to understand TCP/IP agreement well and no regulation of the serial transmission format. You can definite any serial communication agreement. 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 2108E converters, set their remote IP addresses to be the ones of the opposites. (Two 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