RS485 TO WIFI/ETH

From Waveshare Wiki
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Documentation

- User Manual (https://files.waveshare.com/upload/6/61/RS485-TO-WIFI-ETH-User-Manual-EN.pdf)
- MQTT Communciation (https://www.waveshare.com/wiki/RS485_TO_WIFI_ETH_MQTT)

Software

- SSCOM Serial Debug Assistant (/wiki/File:Sscom5.13.1.zip)
- RS485 TO WIFI/ETH Configuration Tool (/wiki/File:RS485_TO_WIFI-ETH_Config.zip)

RS485 TO WIFI/ETH

RS485 to WIFI/ETH module



(https://www.waveshare.com/rs485-to-wifi-eth.htm)

FAQ

Question: Why can't the configuration webpage be opened in the computer's browser and cannot communicate with TCP?

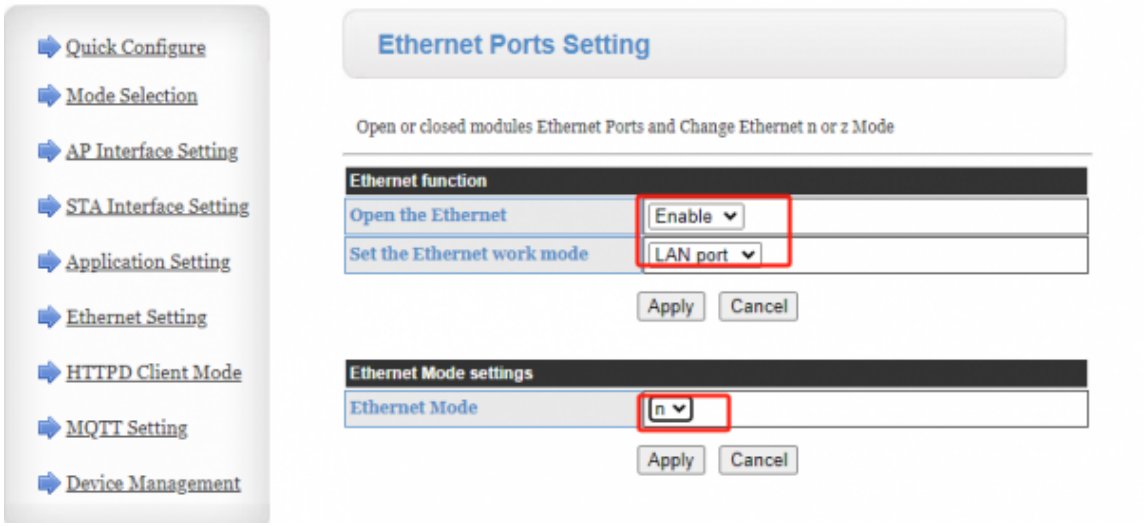
Answer:

Set the IP of RS485 TO WIFI/ETH and computer to the same network address and different node address IP:
For example, RS485 TO WIFI/ETH IP is 10.10.100.254; computer IP is 10.10.100.253.

Question: Why can't I access the configuration page after connecting to the AP hotspot?

Answer:

Unplug the Ethernet cable from the ETH port, or change the port setting to LAN mode:



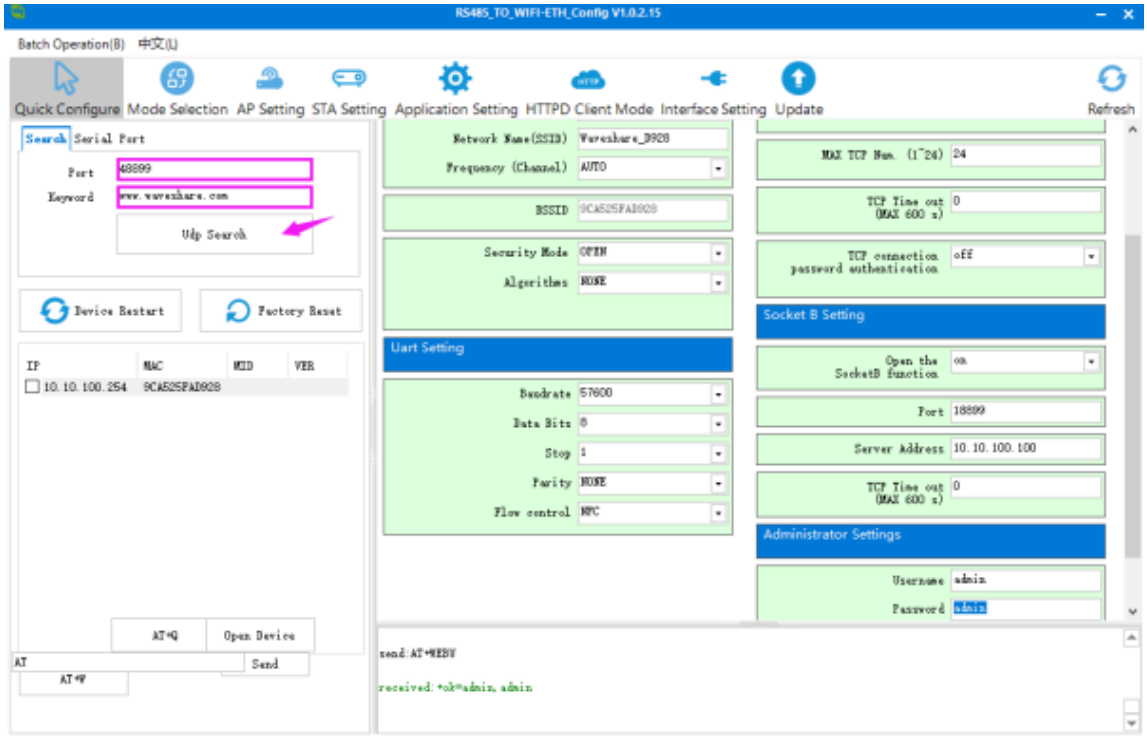
(/wiki/File:Lan-wan-eth.png)

Question: I forgot my IP, what should I do?

Answer:

- If you have not changed your IP, the shipping IP defaults to 10.10.100.254;
- If you forget, you can configure the host computer tool in Windows to enter the corresponding parameters to search for the device IP, as shown in the figure below:

```
Port: 48899
Keyword: www.waveshare.com
```



(/wiki/File:485-wifi-config.png)

Question: How to restore factory settings?

Answer:

After powering on, press and hold the Reload button for more than 5 seconds to restore the factory settings:



(/wiki/File:RS485_TO_WIFI-ETH.png)

Question: Can RS485 be connected to more than one RS485 device?

Answer:

Yes, please use the handshake cascade method to access as below:

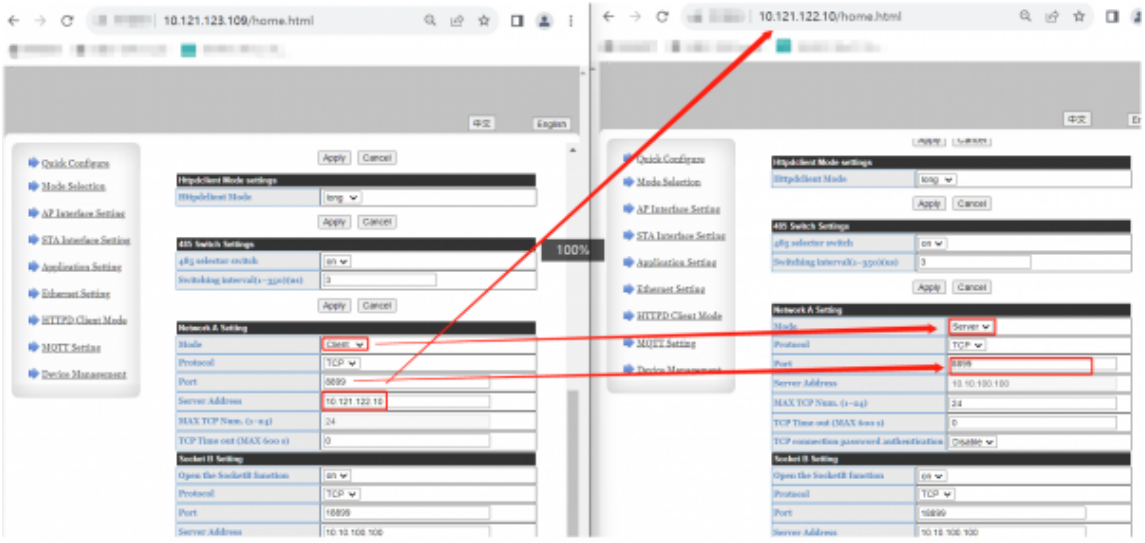


(/wiki/File:RS485_TO_WIFI-ETH-02.png)

Question: How can two RS485 TO WIFI/ETH devices establish communication?

Answer:

- Set two RS485 TO WIFI/ETH devices both as STA modes, respectively connect to the same router through WiFi, and set one as the client, the other one as the server. The remote IP and port number of the client is the local IP and port number of the server:



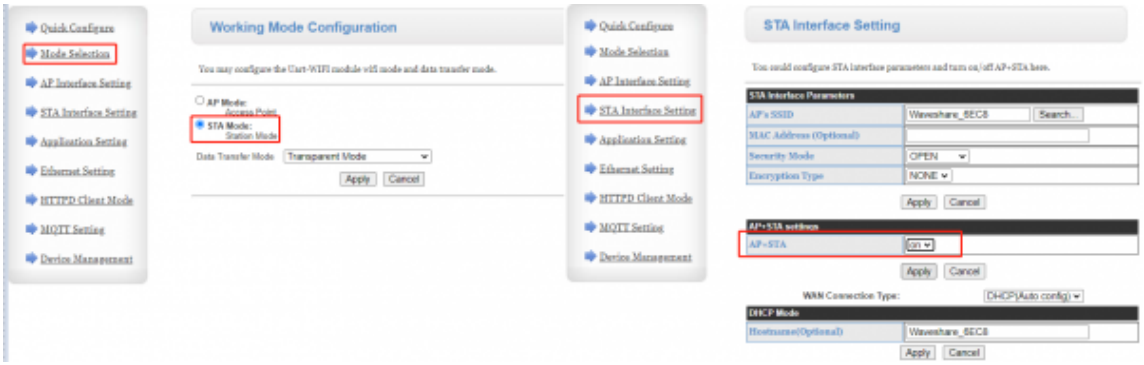
(/wiki/File:RS485_TO_WIFI-ETH-05.png)

- Or you can set one device as AP mode, and the other one as STA mode. Then the communication is established after connecting them.

Question: After setting it to STA mode, can I open the hotspot for other devices?

Answer:

Yes, please enable AP+STA mode, as shown below:



(/wiki/File:RS485_TO_WIFI-ETH-06.png)

Question: How many devices can I connect to in AP mode, and what is the best transmission distance for WIFI?

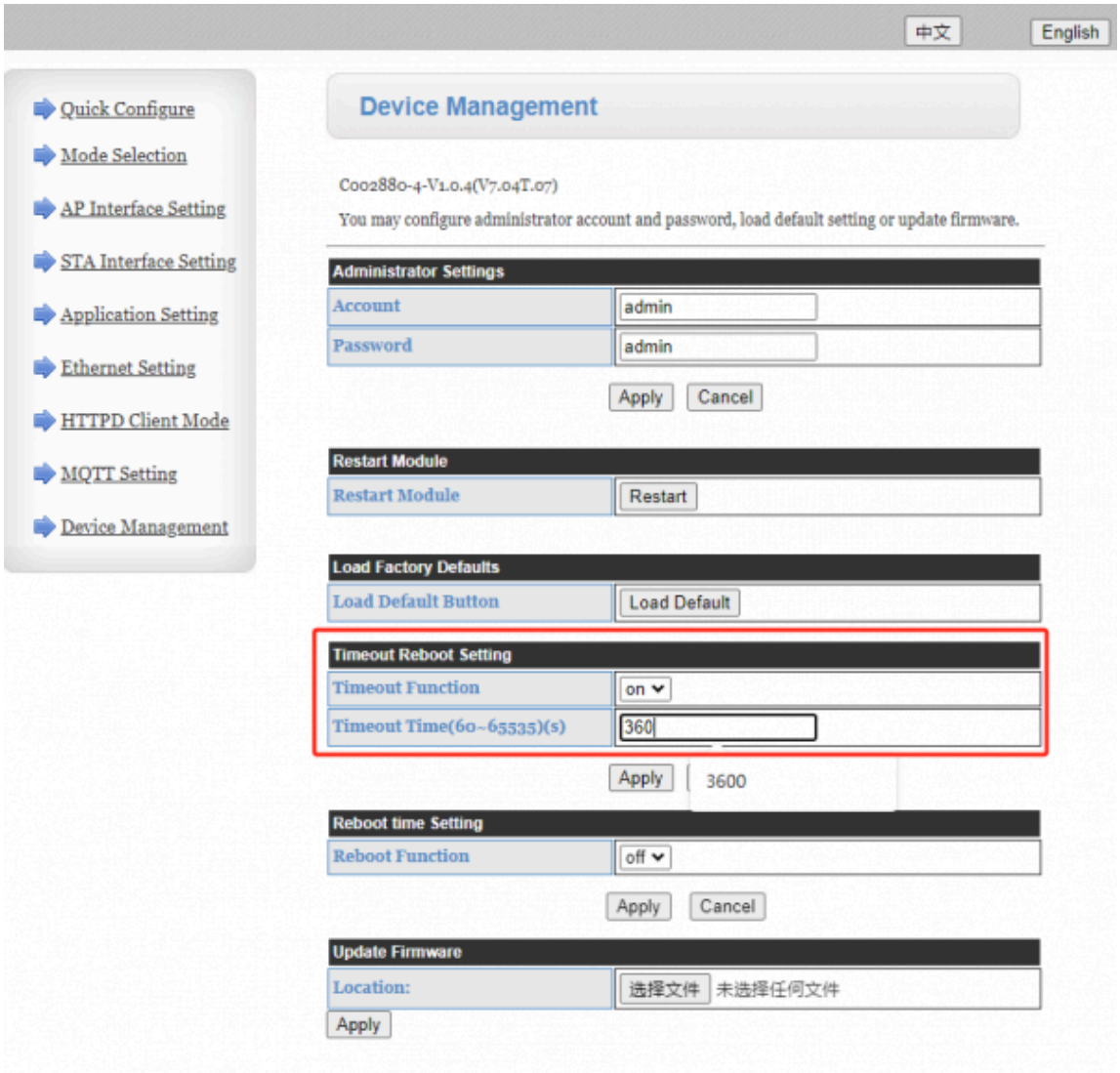
Answer:

Up to 24 devices and the best transmission distance for WIFI is 50m (open area, using a 3dbi antenna).

Question: Do I need to manually restart to restore it when the network is down?

Answer:

You can configure it to automatically restart on timeout:

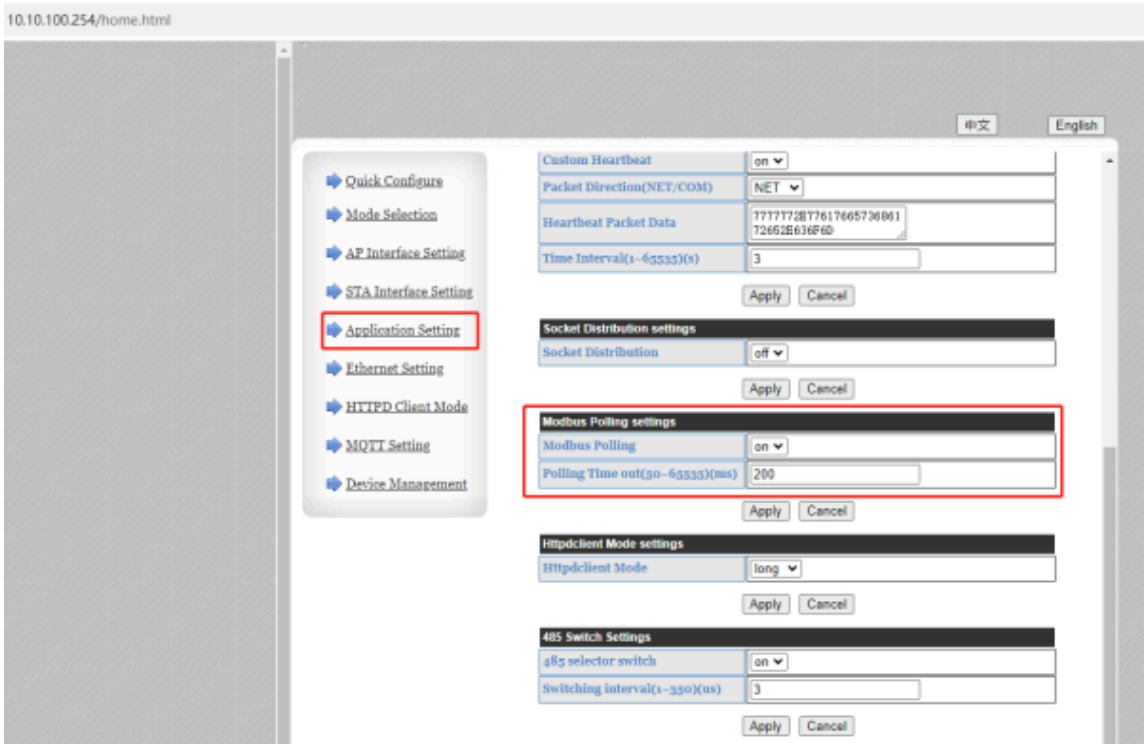


(/wiki/File:RS485_TO_WIFI-ETH-07.png)

Question: How to configure Modbus polling?

Answer:

As shown below:



(/wiki/File:RS485_TO_WIFI-ETH-08.png)

Question: Why does TCP/USP communication not work?

Answer:

- Check Hardware Connection

Ensure all physical connections are correct. Confirm that the RS485 A-A and B-B connections between the serial server and the inverter are properly established and that the Ethernet port is connected.

- Check Software Configuration

Please verify the serial port baud rate (typically 9600bps and 115200bps), IP address, and port number configurations. The remote IP and port number of the client should match the local IP and port number of the server. Check firewall settings to ensure they allow TCP/UDP traffic, or temporarily disable the firewall for testing purposes.

Question: What are the differences between N-ver Ethernet mode and z-ver?

Answer:

- When the Wi-Fi module operates as an STA (software as Z-Ver), it works in bridge mode. After connecting to the AP, devices on the Ethernet interface will obtain IP addresses

from the AP.
- When the Wi-Fi module operates as an STA (software as N-Ver), it works in router mode. After connecting to the AP, it obtains an IP address from the AP. The module itself forms a subnet (default 10.10.100.254), and devices on the Ethernet interface are assigned addresses by the module.

Question: What are the differences between the bridge mode and the router mode?

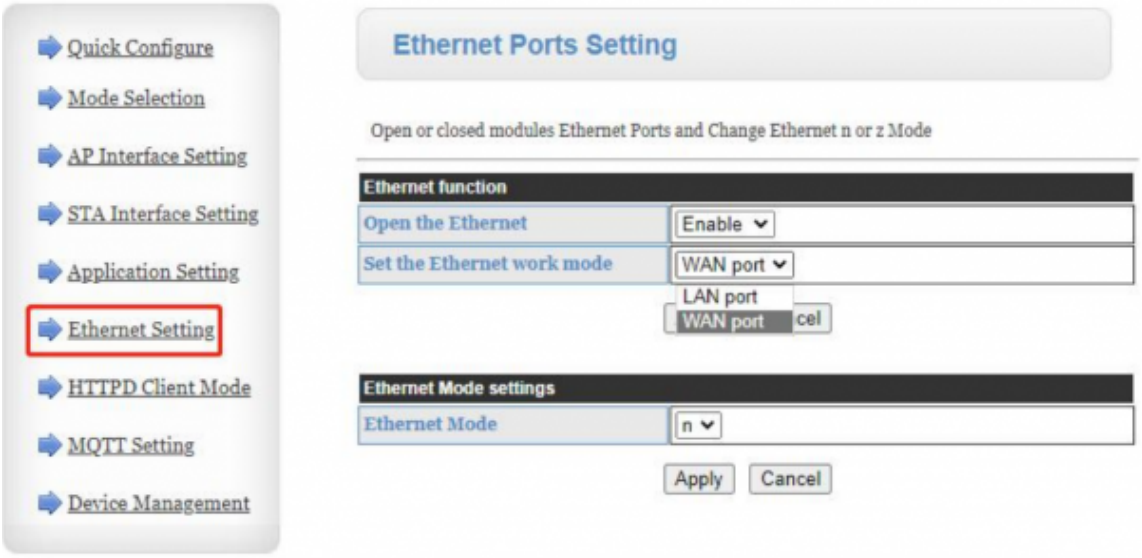
Answer:

- The WIFI module is made as an STA (software is Z-Ver) and the module works in bridge mode. After the module is connected to the AP, the device on the Ethernet interface will get the IP address from the AP. At this time, the module is like a transparent device in the whole network.
- The WIFI module acts as an STA (software N-Ver) and the module works in routing mode. The module connects to the AP and gets the IP address from the AP. The module itself forms a subnet (default 10.10.100.254) and the devices on the Ethernet interface are assigned addresses by the module.

Question: Why can I only use WiFi but not ETH?

Answer:

You need to turn on the LAN function of the network port, if you turn on WLAN, you can't use AP mode.



(/wiki/File:Wifi-485-eth.png)

Question: What are the steps for Modbus devices communication?

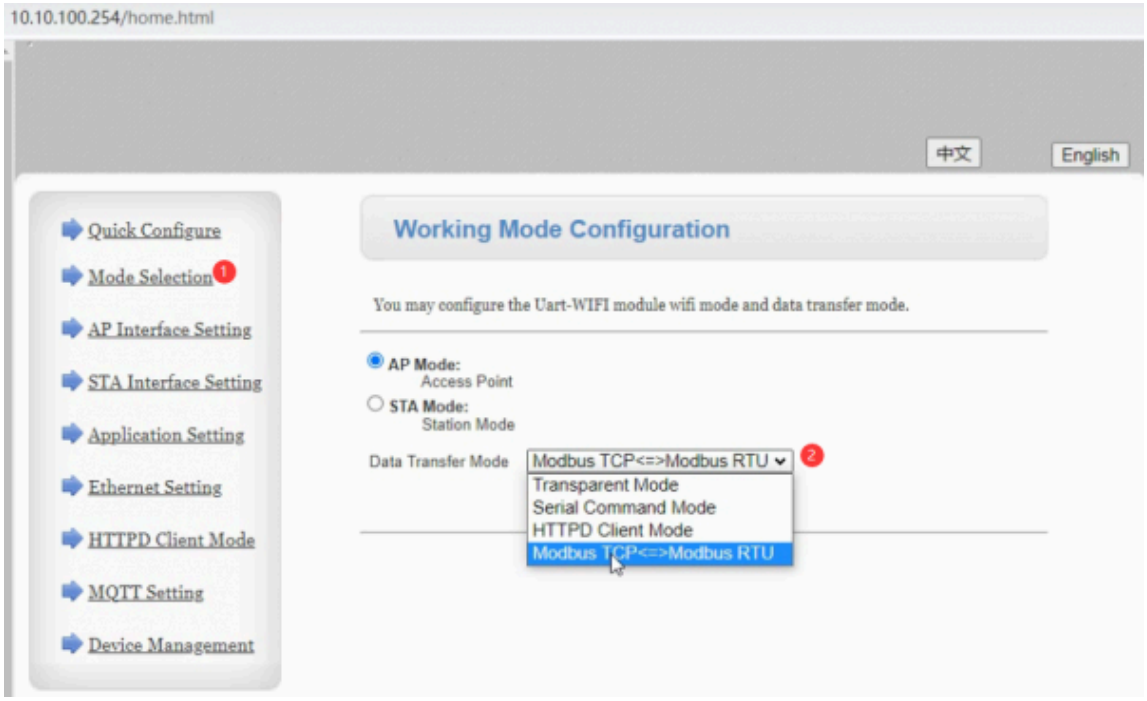
Answer:

Take modbus as an example:

- Hardware connection:
  - Connect the Modbus device to the serial server module via the RS485 interface.
  - Connect the Waveshare RS485 to WiFi/ETH module to your network through WiFi or Ethernet.
- Meter parameter settings:
  - Check the documentation for the Modbus device for its RS485 communication protocol, device address, function code, and baud rate settings.
  - Configure the Modbus device to use the correct baud rate and device address.
- Configure Waveshare RS485 to WiFi/ETH module:
  - Connect Waveshare RS485 to WiFi/ETH module to your computer through WiFi or Ethernet.
  - It is recommended to use TCP transparent protocol to connect the meter through RS485 TO ETH, please correctly configure the parameters such as the UART baudrate and set the operating mode as "None".
  - This module sends data to Modbus device and return the corresponding data.

```
Sending code: 01 05 00 00 FF 00 8C 3A
Return code: 01 05 00 00 FF 00 8C 3A
```

- In addition, you can use the converting functionality of modbus RTU and modbus TCP, and improve the transmission:



(/wiki/File:Wifi-modbus-485.png)

Question: What is the power consumption of RS485 TO WIFI/ETH?

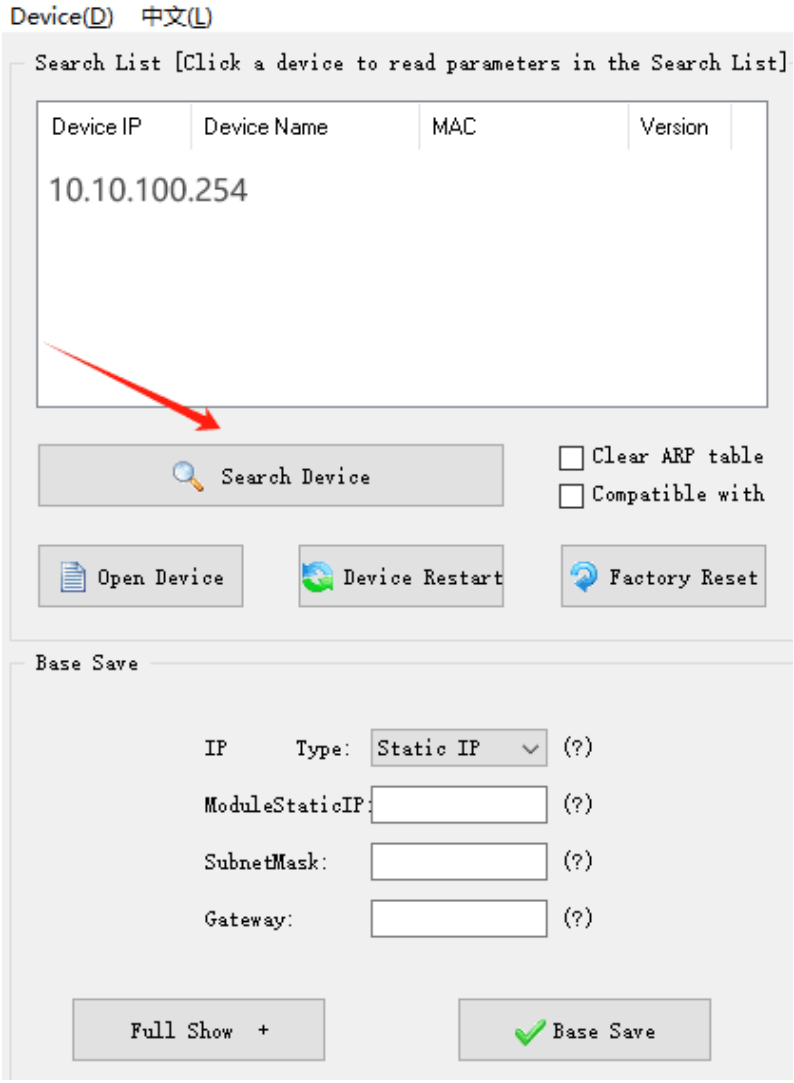
Answer:

12V, 0.056A, 0.67W (average power consumption).

Question: How can I know module IP?

Answer:

The default IP of the module is 10.10.110.254. If you forget the IP, you can use this tool (https://www.waveshare.com/wiki/File:RS232485_TO_ETH_Config.7z) to find the IP after connecting to the hotspot of the module or establishing the connection.



(/wiki/File:Wifi-eth-search.png)

If the above tool cannot work, you need to restore it to the factory setting.

Question: Can the administrator account on the web interface be left blank?

Answer:

It can be left blank. However, for security reasons, it is recommended to keep the administrator account and password settings to avoid security risks caused by unauthorized access.

Support

Technical Support

If you need technical support or have any feedback/review, please click the **Submit Now** button to submit a ticket, Our support team will check and reply to you within 1 to 2 working days. Please be patient as we make every effort to help you to resolve the issue.
Working Time: 9 AM - 6 PM GMT+8 (Monday to Friday)

Submit Now (https://service.waveshare.com/)

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