User Manual and Test Guide

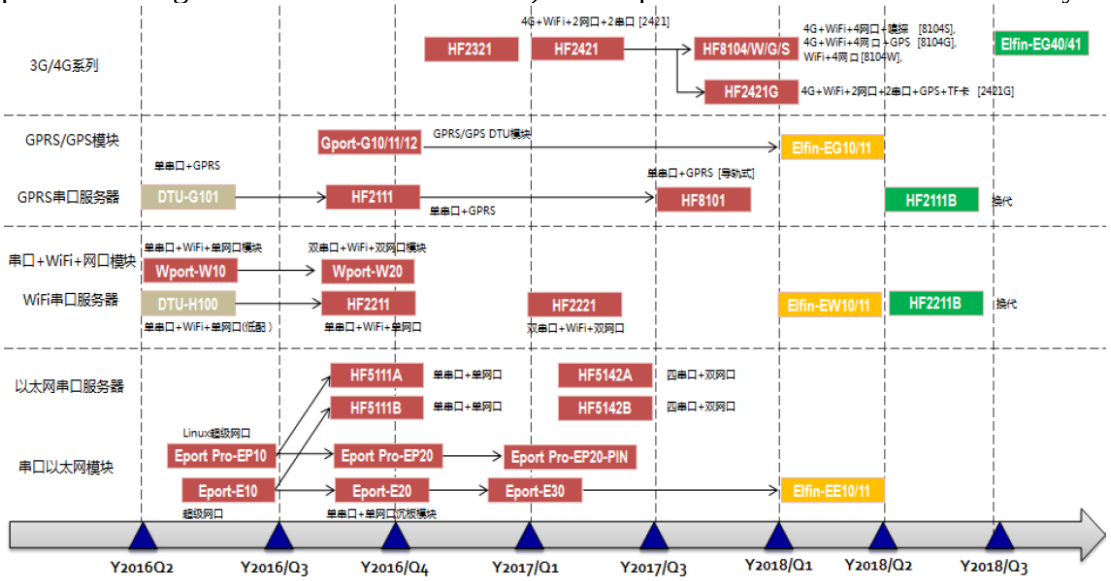
Modbus Application

Rev: 1.0

Table of Contents

1. PRODUCT

This document is applicable to High Flying's IoT equipment. The specific supported models are as follows. This document introduces EE11 (the same configuration method as Ethernet and Wi-Fi devices) and EG10 (similar to the product configuration of cellular network). Other products are used in the same way.



2. HARDWARE

- Elfin-EE11 1 PCS、Elfin-EG10 1PCS

- RS232 to RS485 converter

3. SOFTWARE

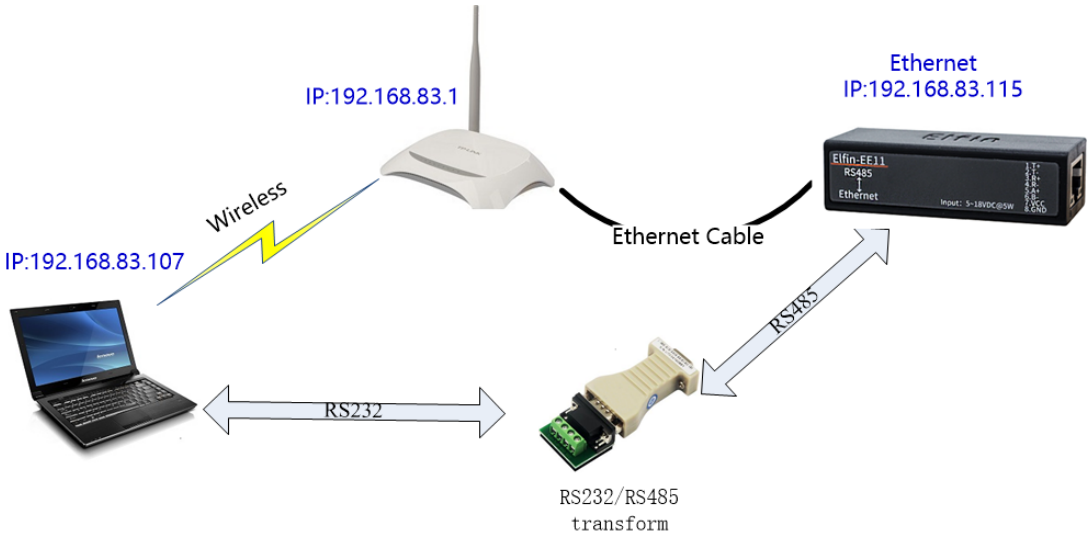
- Modbus Poll
- Modbus Slave

- UART Tools

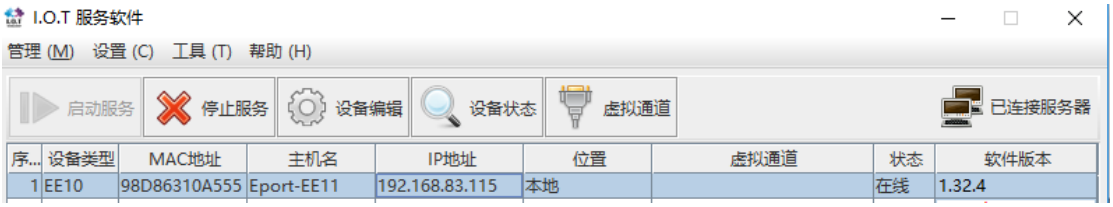
4. EE11 HARDWARE CONNECTION

4.1. LAN PC DIRECT TEST

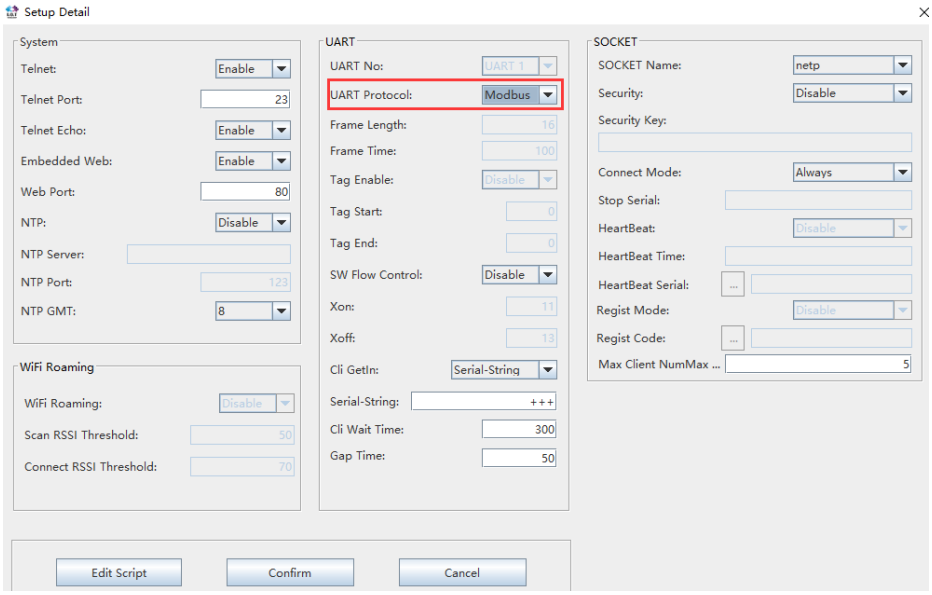
- Connect the hardware as shown below.



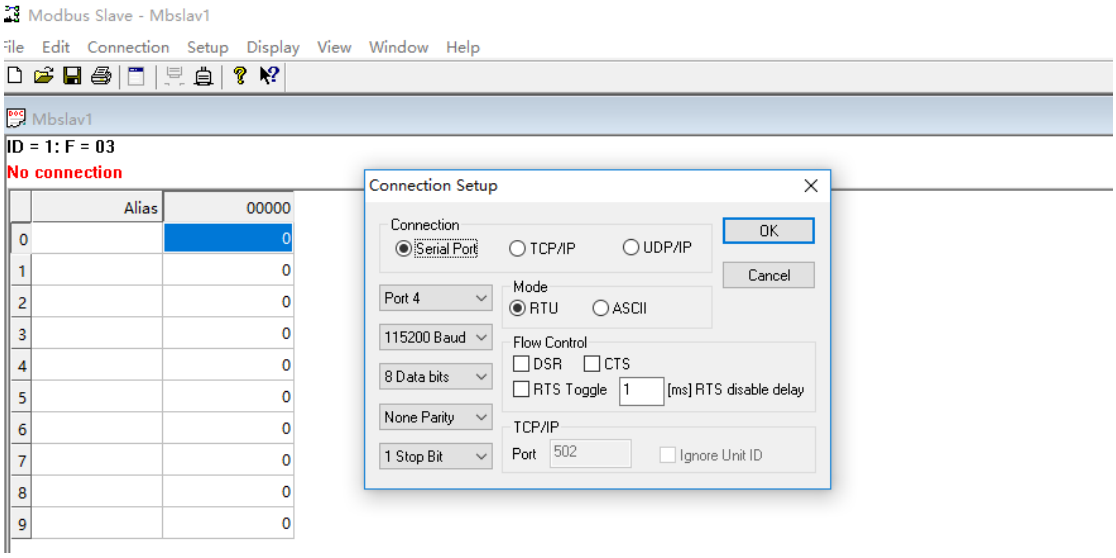
- Open the IOTService Tool and you can see the EE11 device.

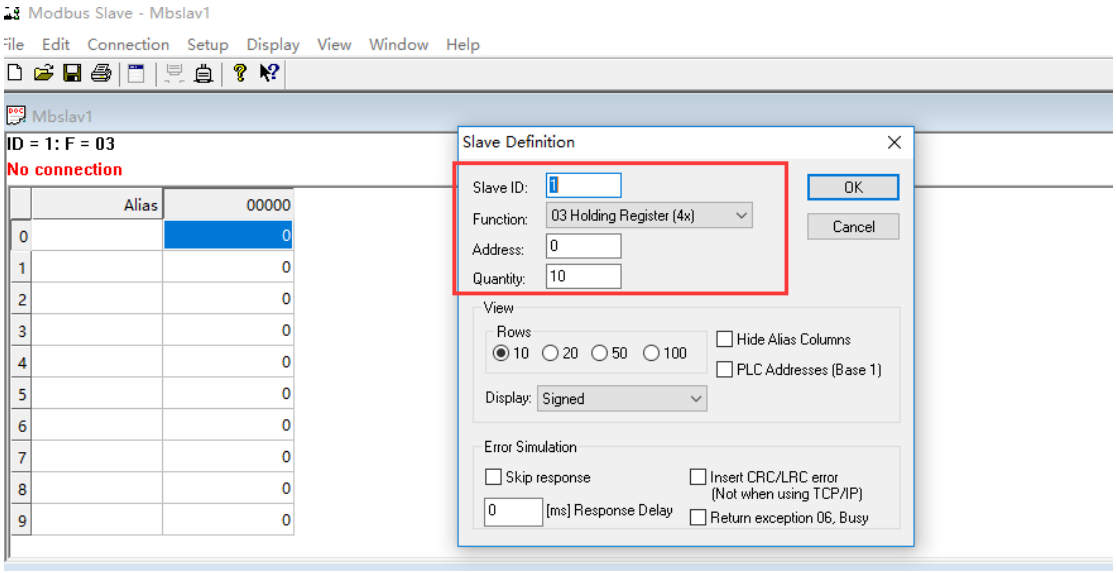


- Enable modbus.

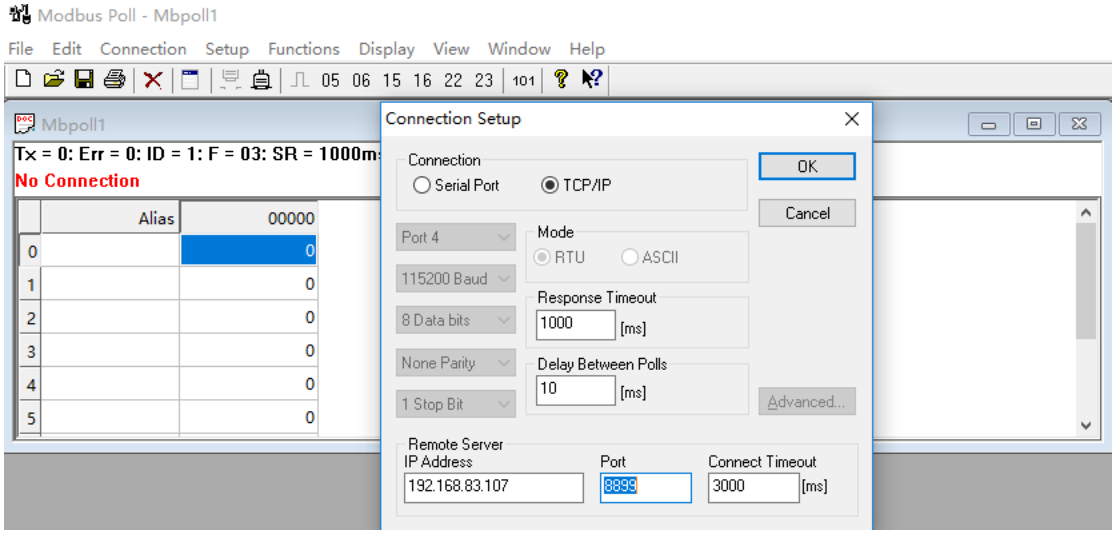


- Open the modbus salve software (used to simulate RS485 devices), set serial port parameters according to EE11, and define the slave device register information.

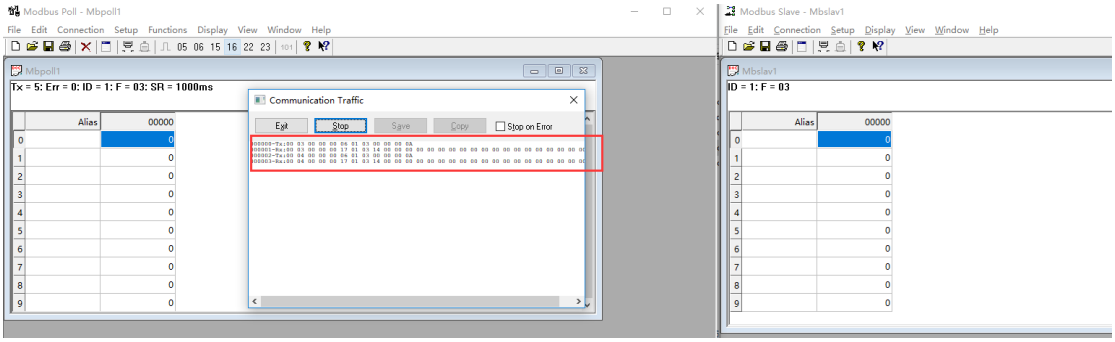




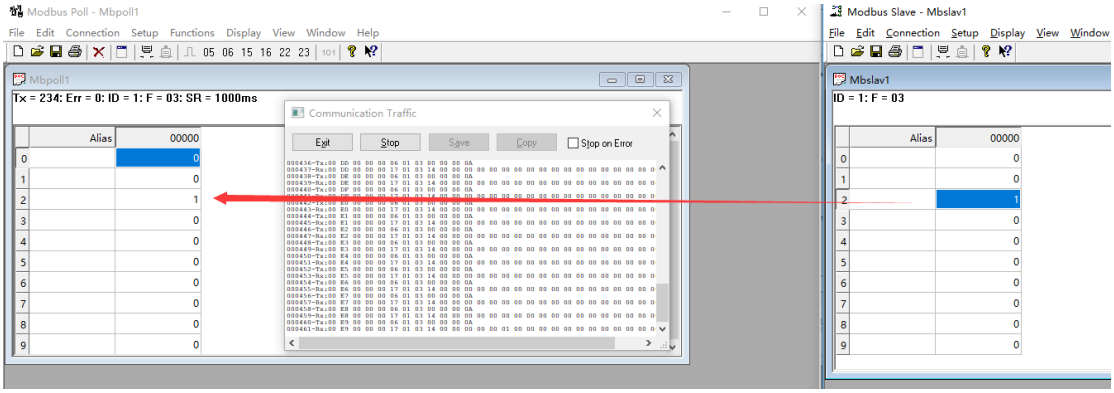
- Open the modbus poll software (for the simulation server), fill in the IP address of the EE11 with the communication address, and fill in the port 8899 (modified according to the communication channel created in EE11, EE defaults to TCP Server, 8899).



- You can see the data packets for communication interaction in the modbus poll software.

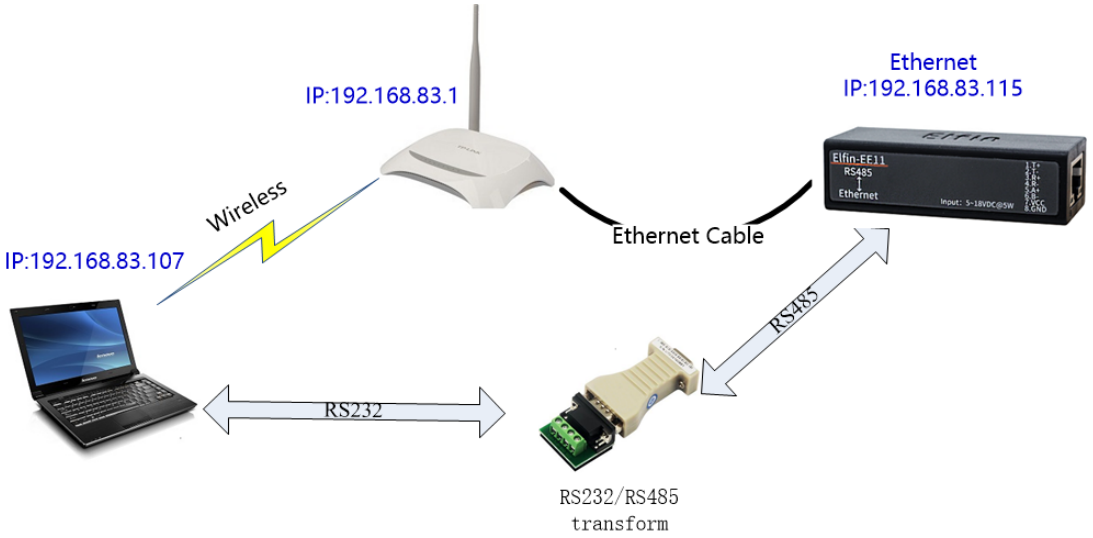


- Modify the corresponding register value in the modbus slave, you can see that the modbus poll software immediately updated this content.

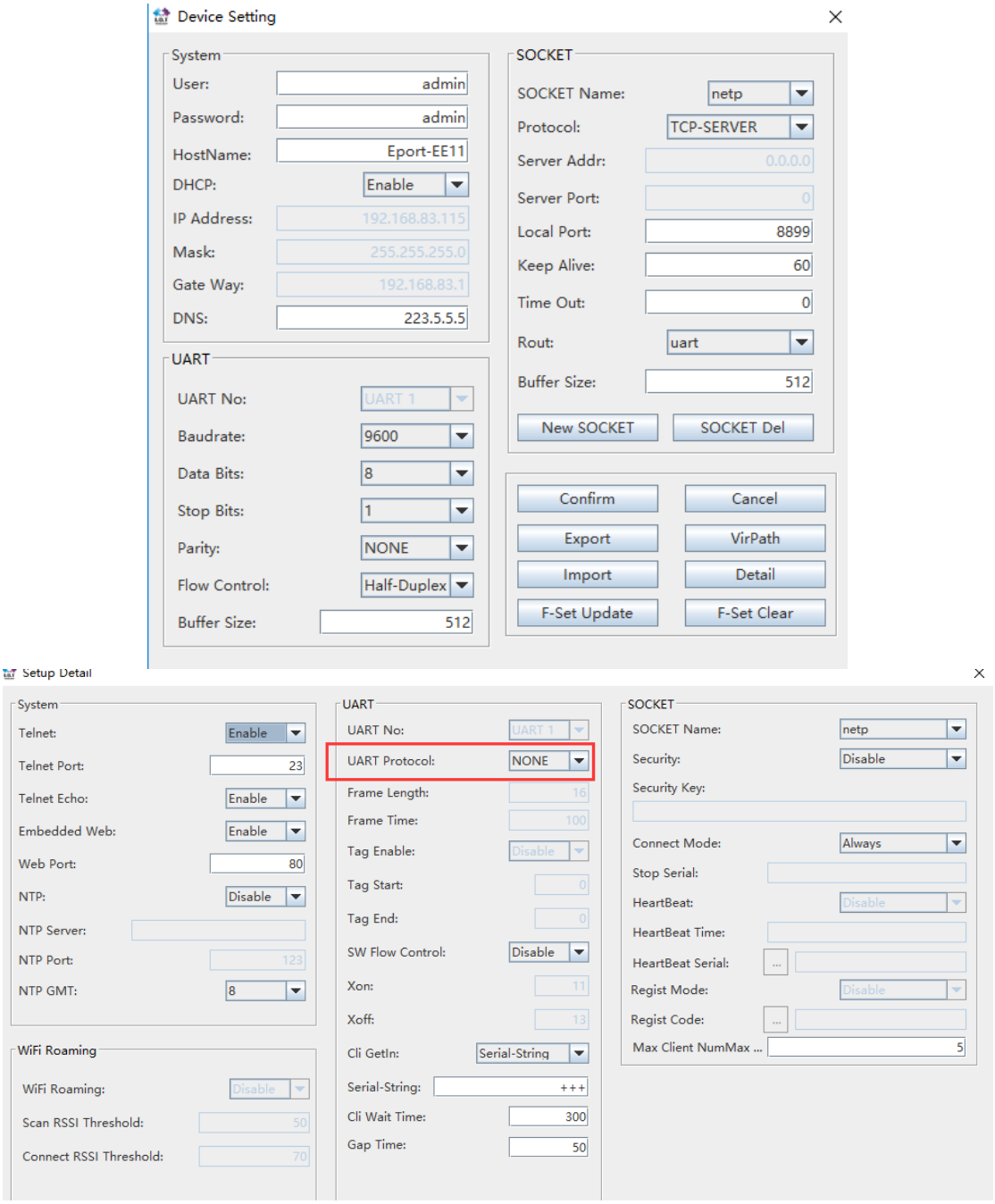


4.2. LAN TRANSPARENT TRANSMISSION TEST

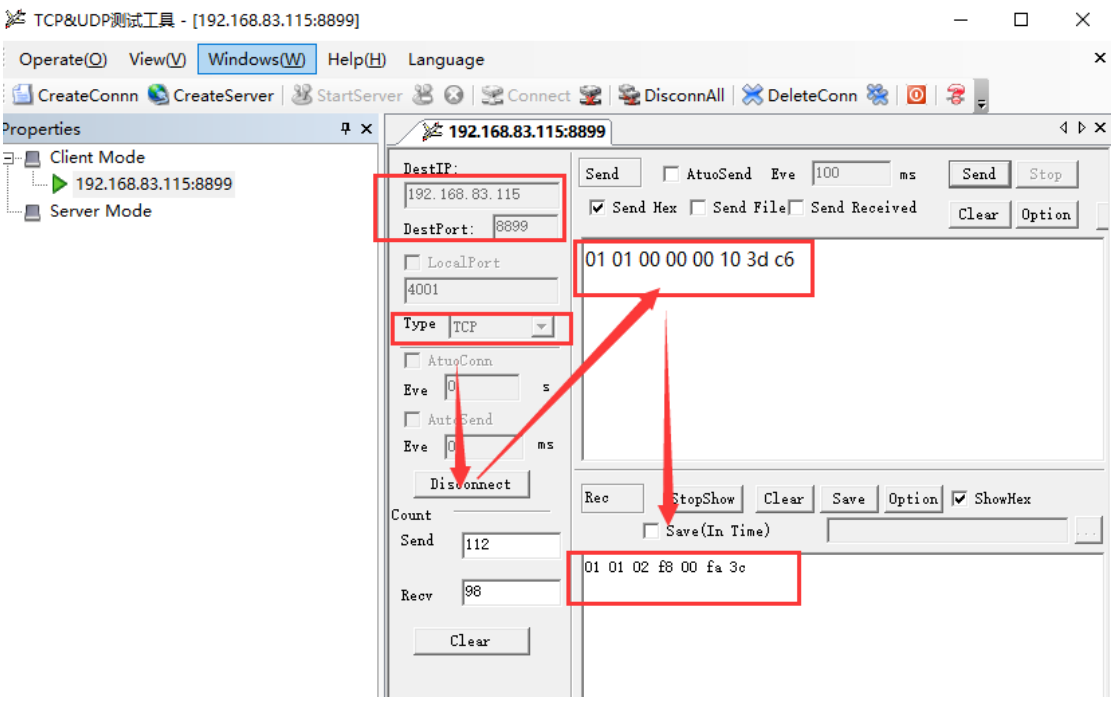
- Connect the hardware as shown below.



- Open IOTService Tool, modify the baud rate to be consistent with the device, and close UART modbus.

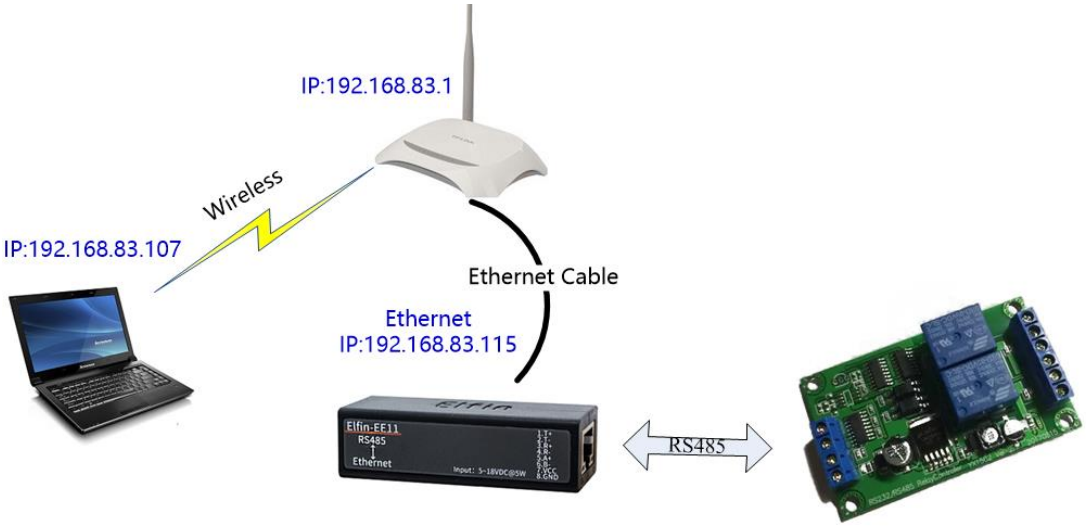


- Open the TCP & UDP test software, send data according to the data format of the device modbus RTU, and see the reply data of the device.

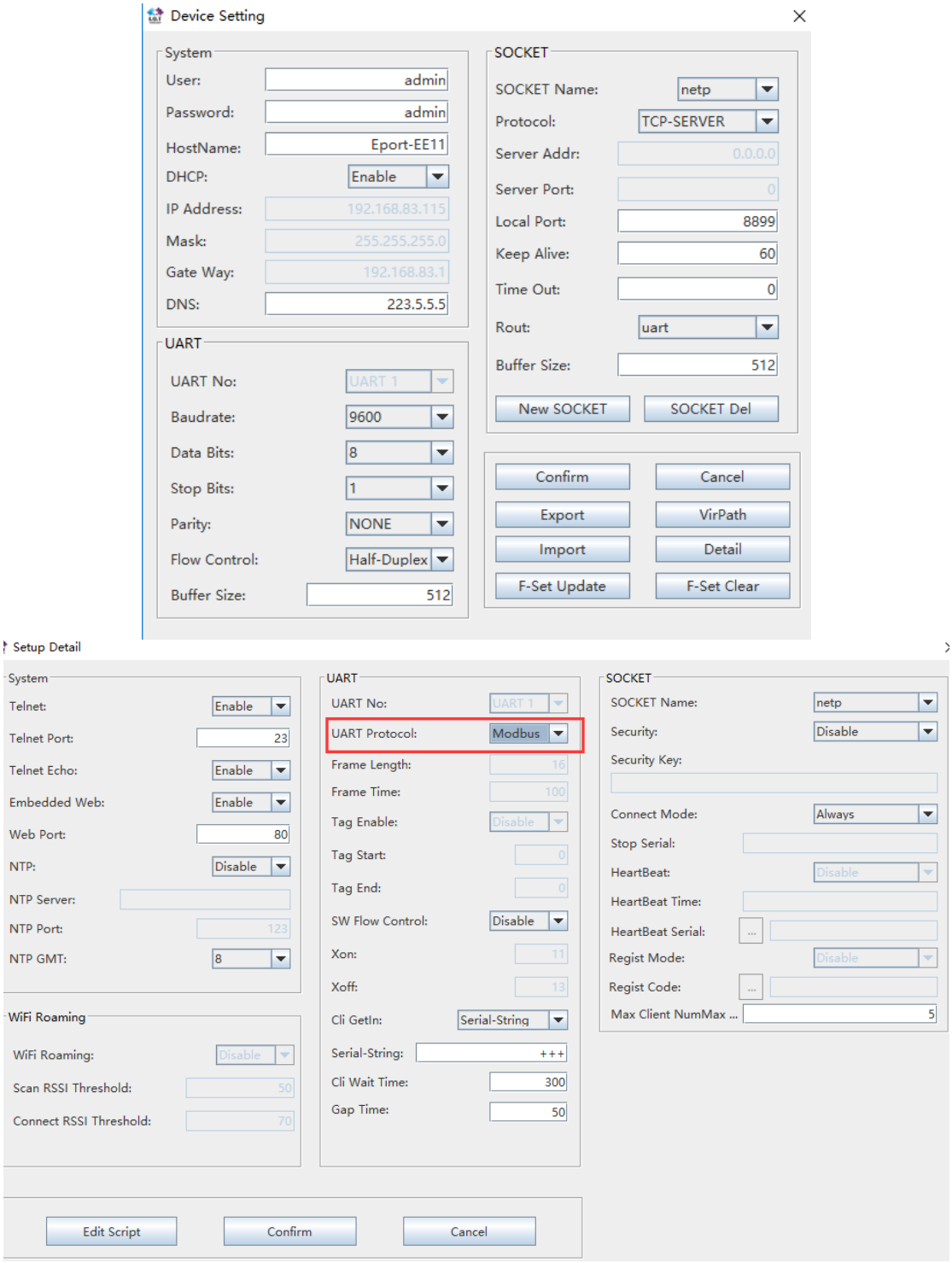


4.3. LAN MODUS POLL TEST

- Connect the hardware as shown below.

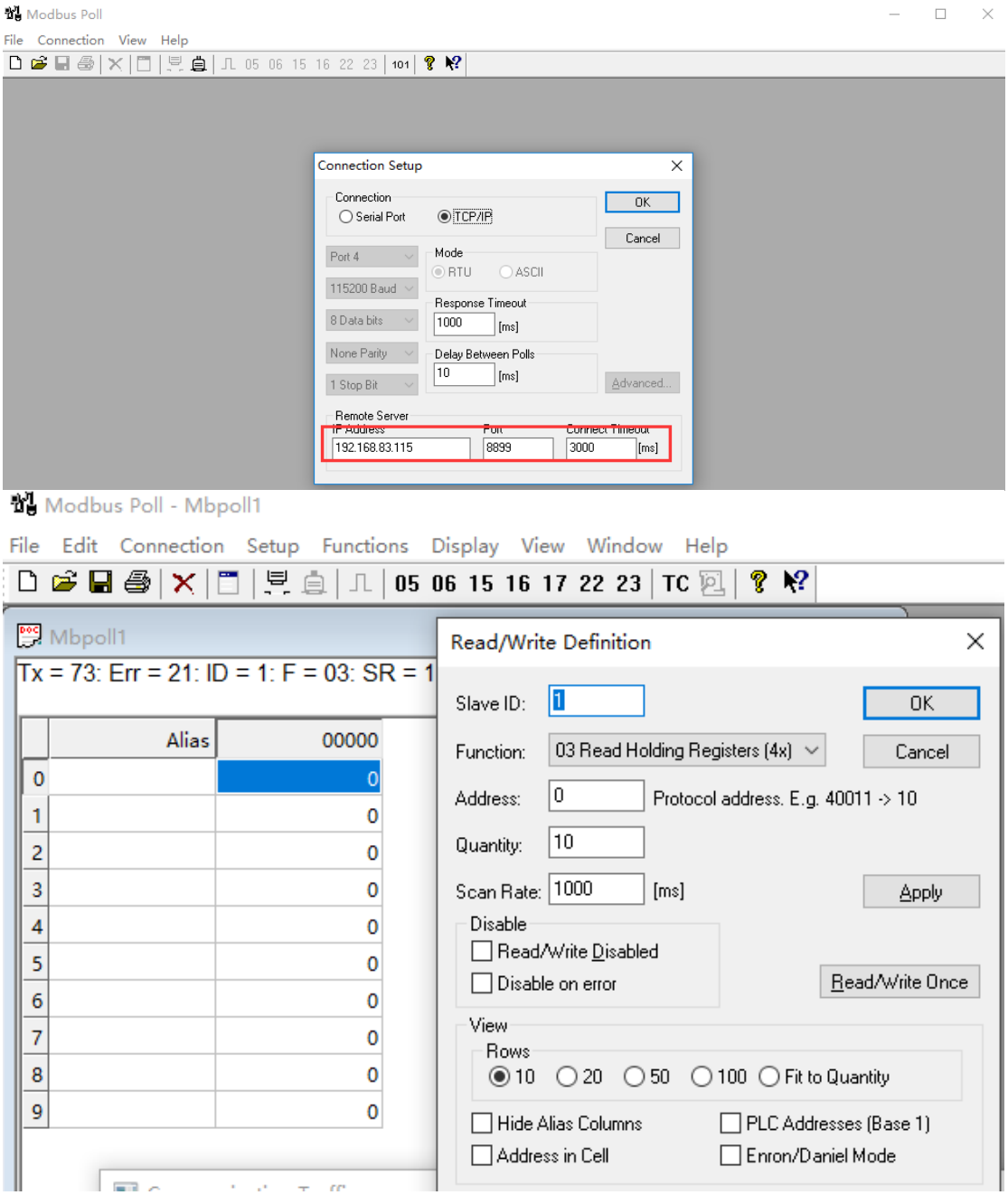


- Open IOTService Tool, modify the baud rate to be consistent with the device, and open the UART modbus

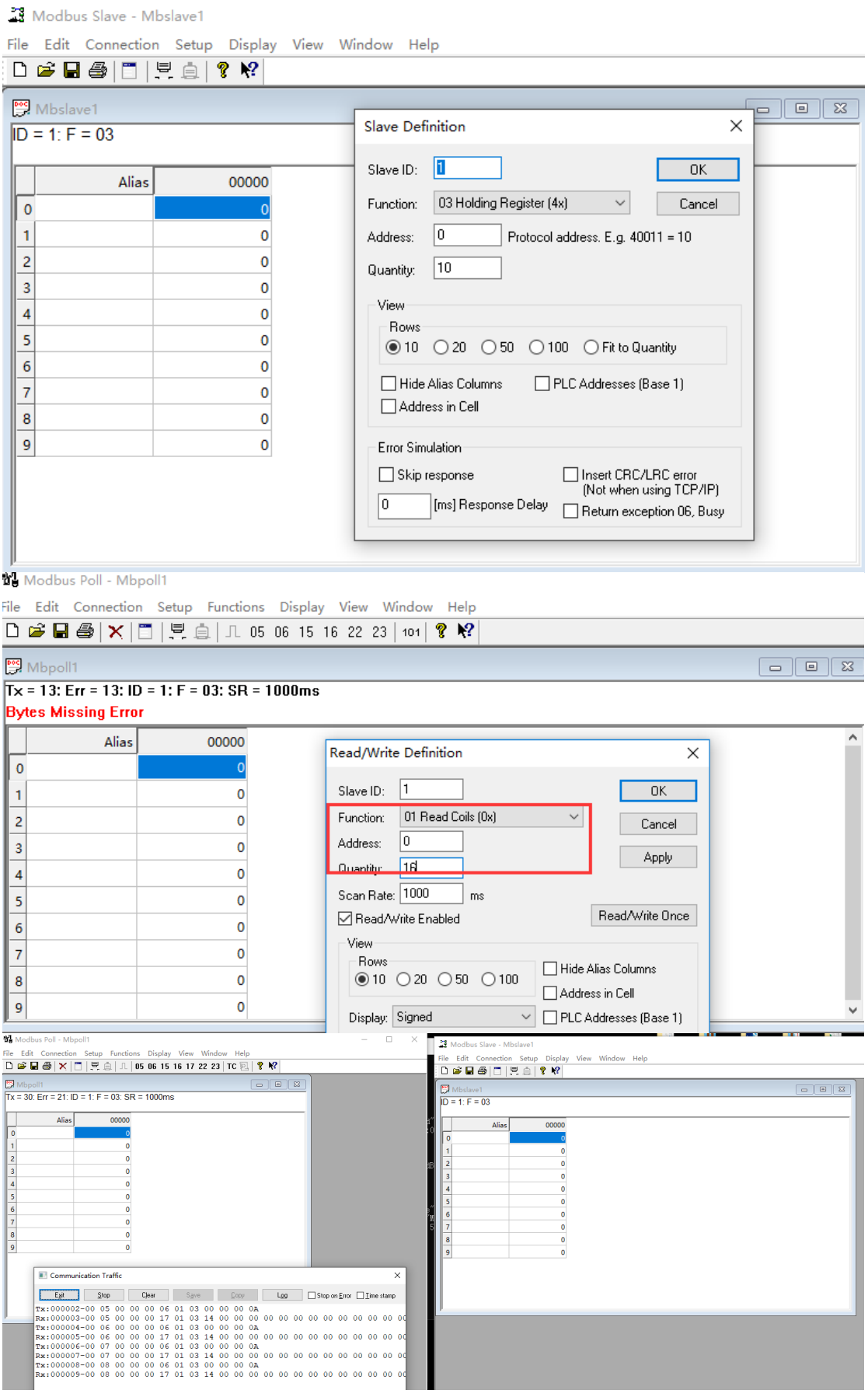


- Open the modbus poll and modbus slave test software, and rewrite the read and write data points according to the device parameters.

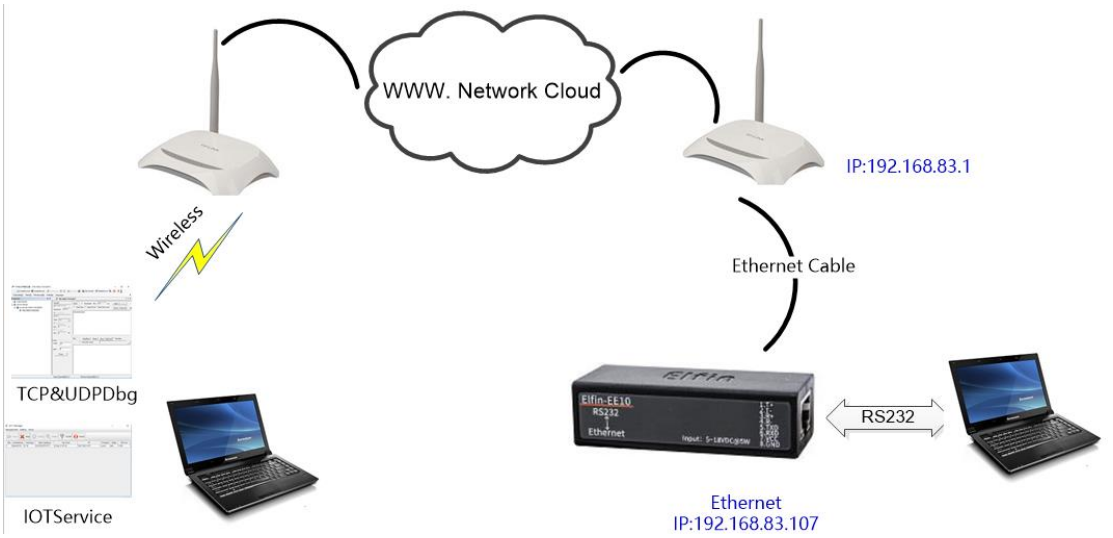
Poll software settings:



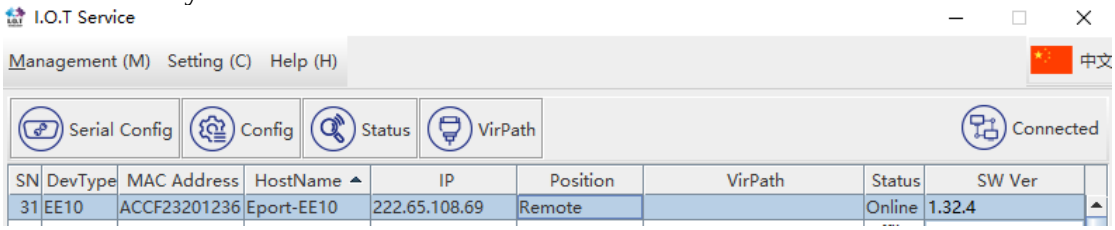
Slave software settings:



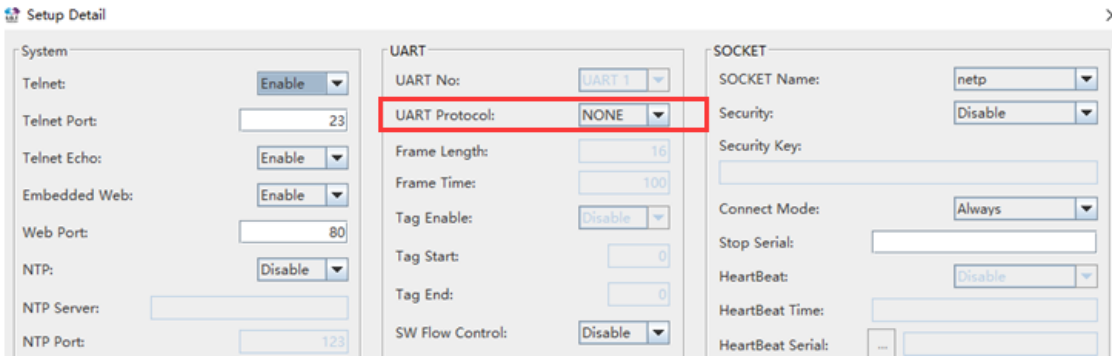
4.4. REMOTE VIRTUAL SERIAL PORT TEST



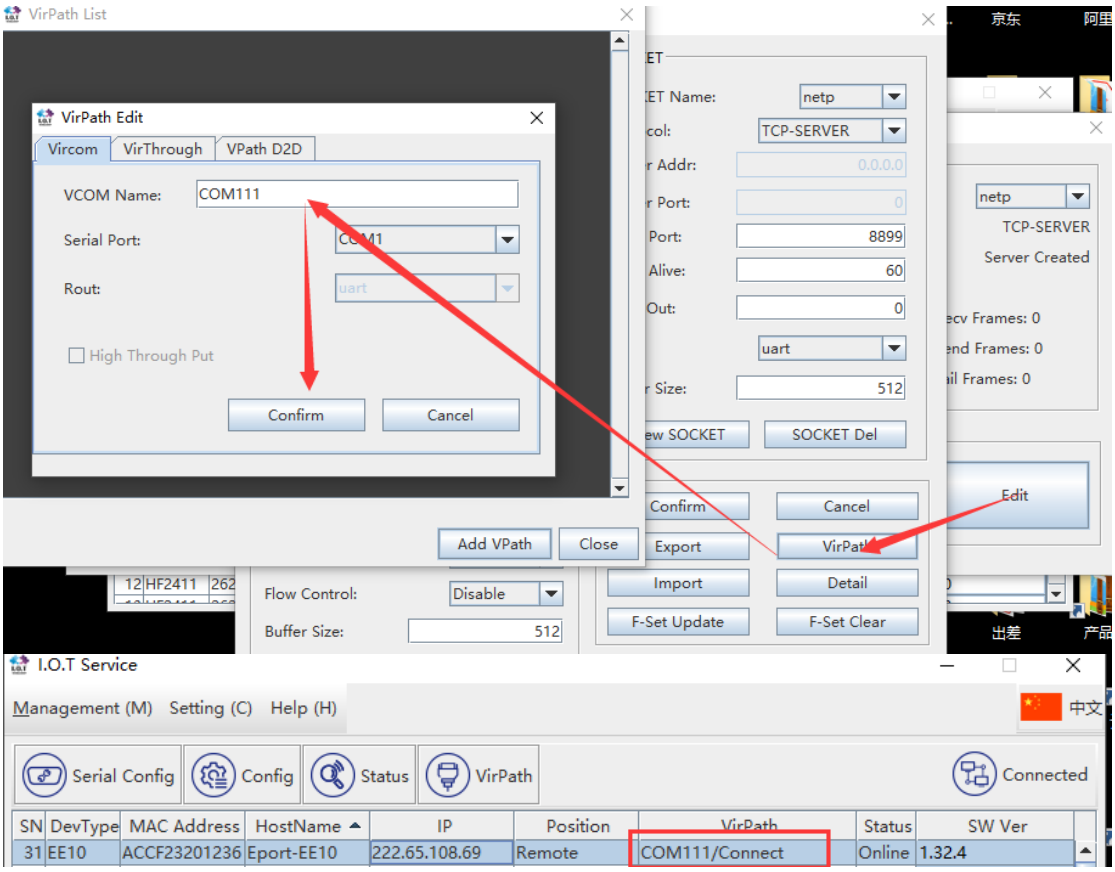
- According to the IOTService Tool documentation, add High Flying's products to the user account (the product need connect to external network). This device has been added remotely as shown below.



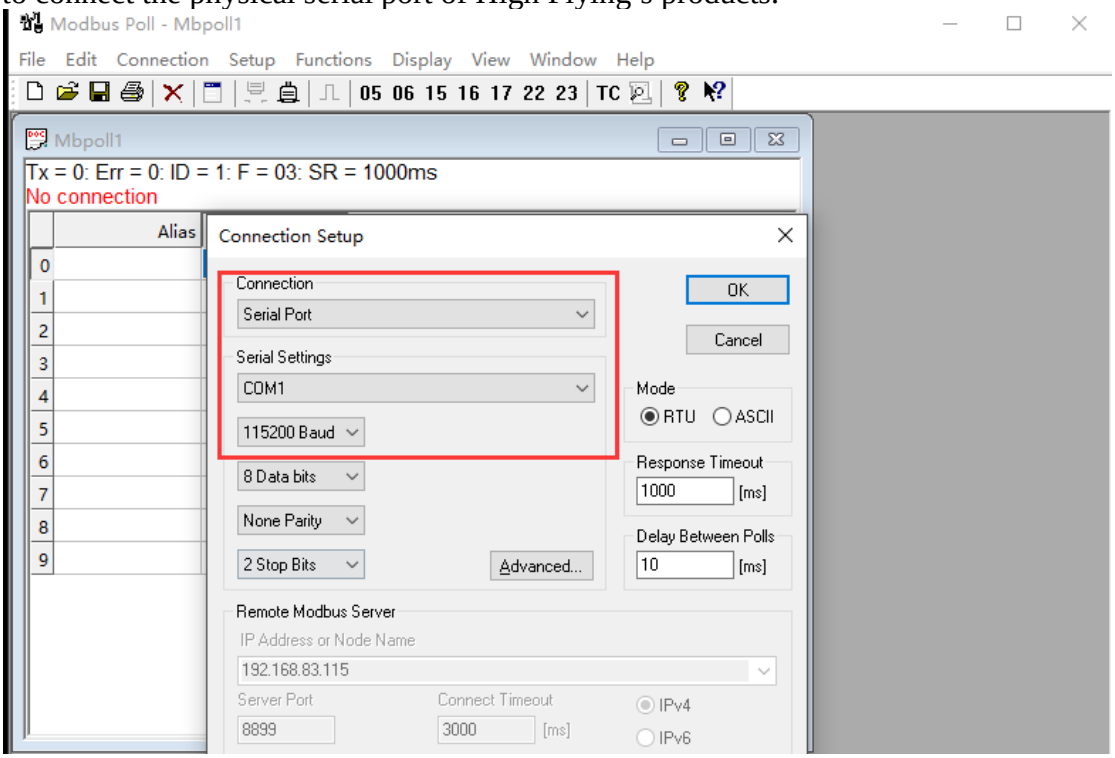
- Close UART modbus protocol.



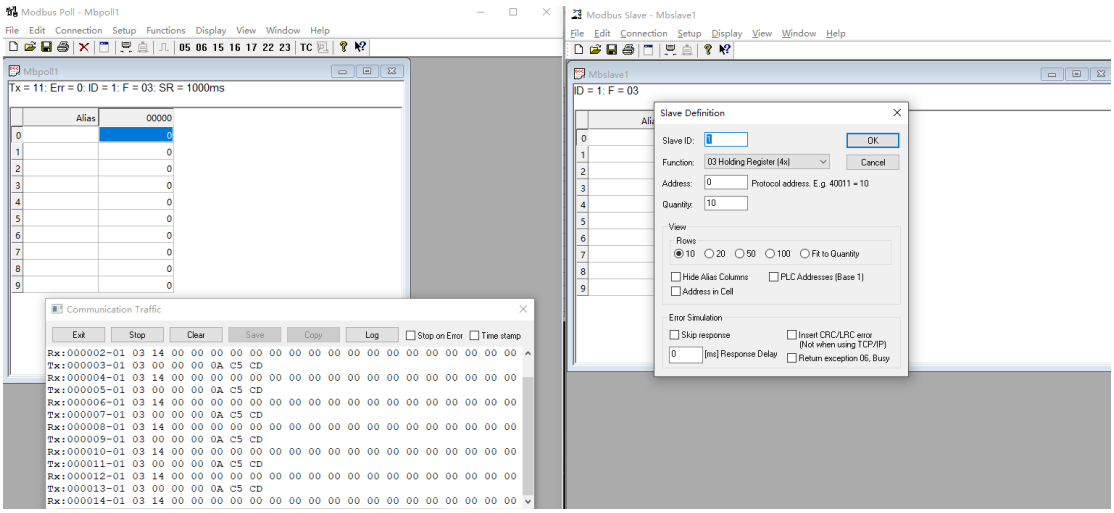
- Create a VirPath



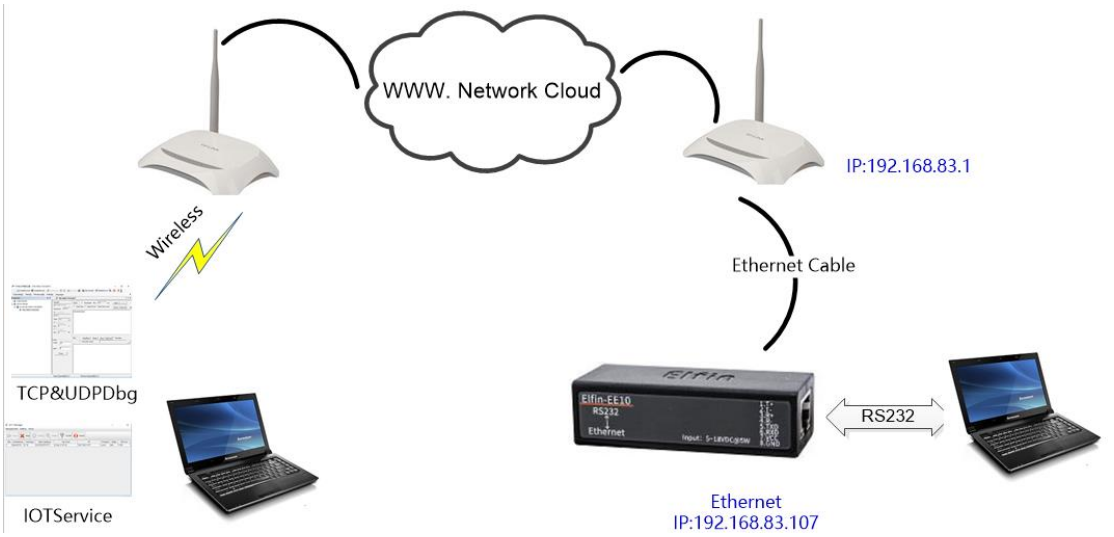
- Open modbus poll, use the VirPath you just created, and open the modbus slave to connect the physical serial port of High Flying's products.



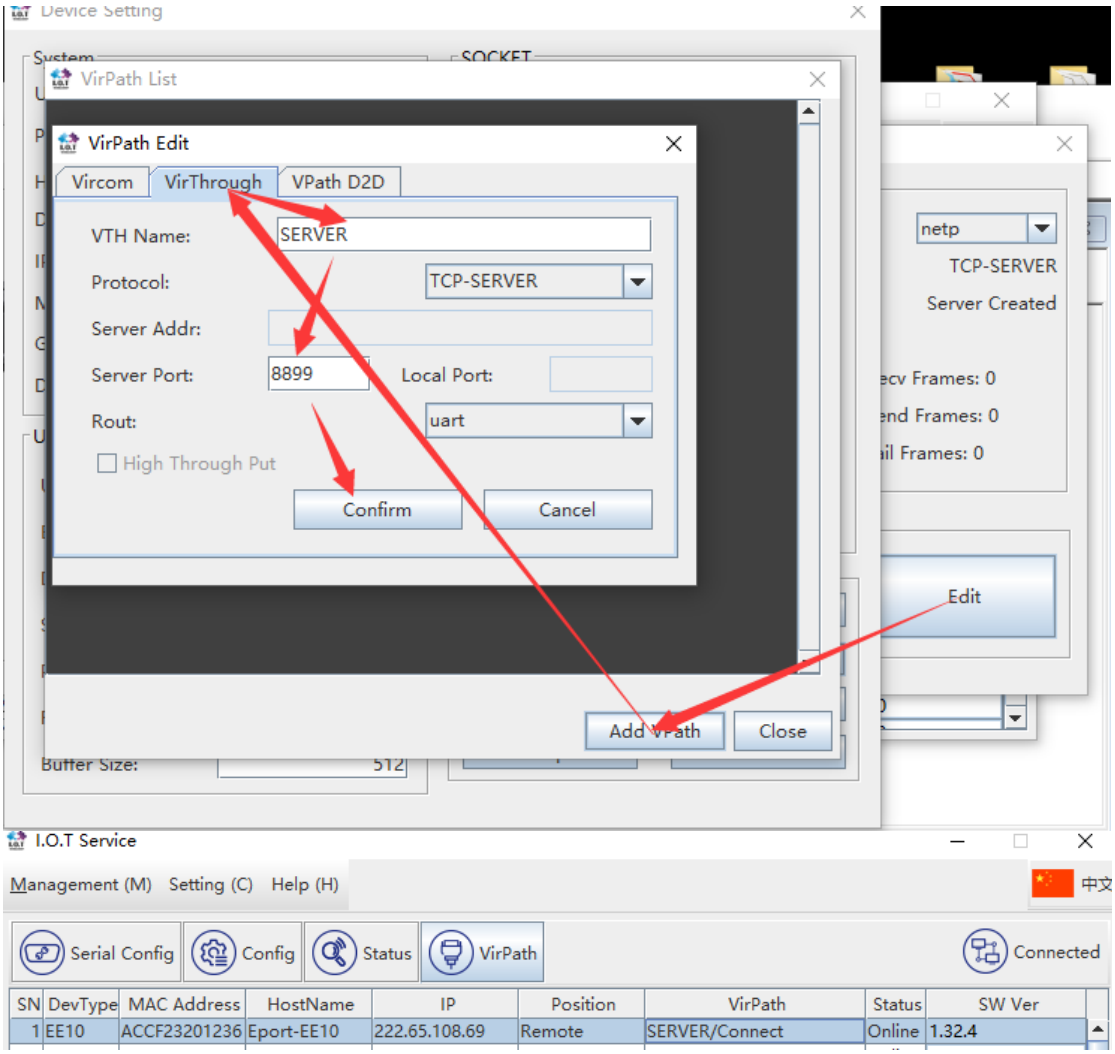
- The data transmission is completed as follows.



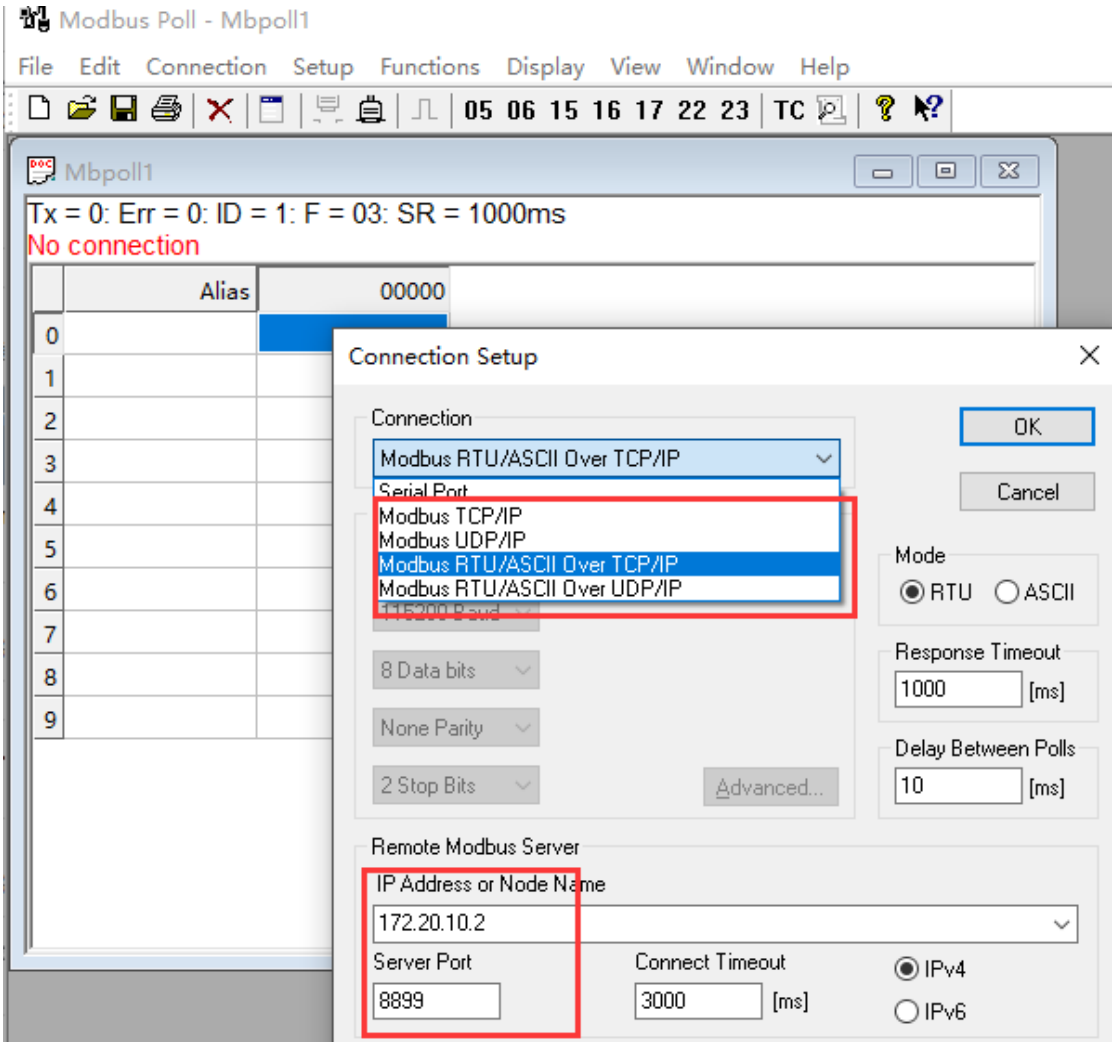
4.5. REMOTE VIRTUAL CHANNEL TEST



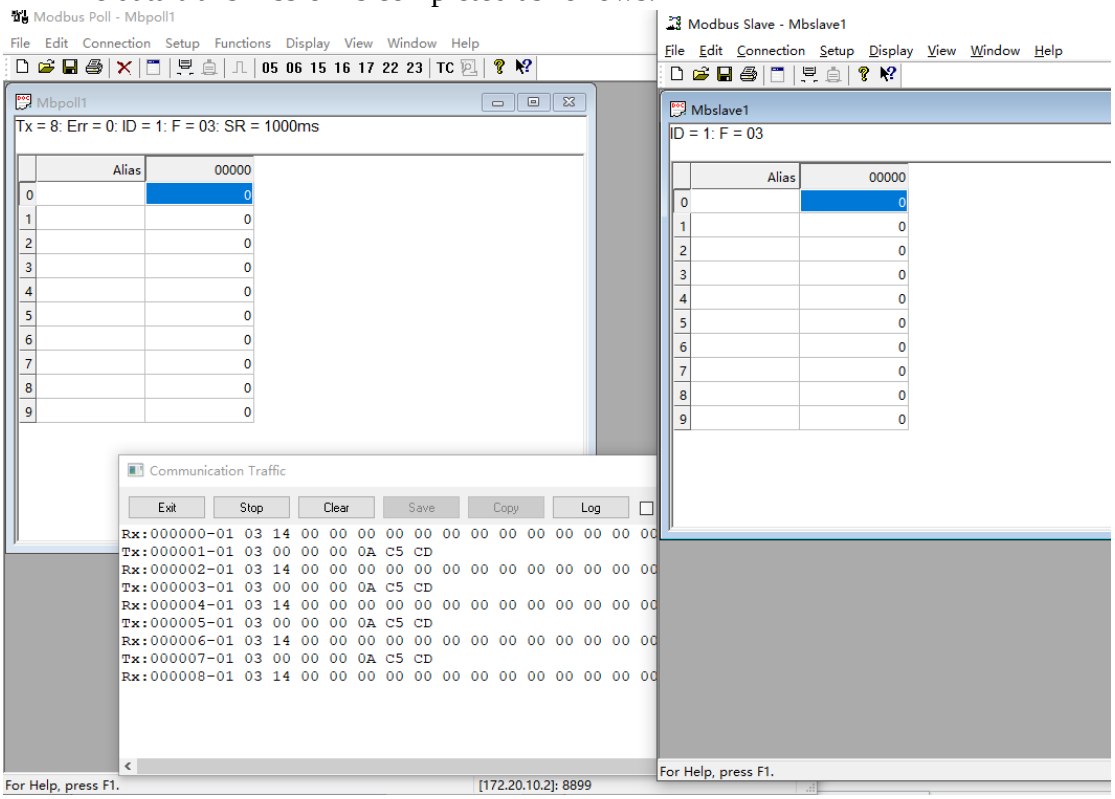
- Add the binding device. This time, create a VirPath and according to TCP Server mode.



- Open modbus poll and use the VirPath just created. Because the serial port modbus protocol is not enabled on the device, the modbus Poll software here is set to transmit by Modbus RTU Over TCP/IP. **The destination address of the communication fills in the virtual channel just created. (8899 port, IP address needs to fill in the IP of the PC),** and open the modbus slave to connect the physical serial port of High Flying's products.



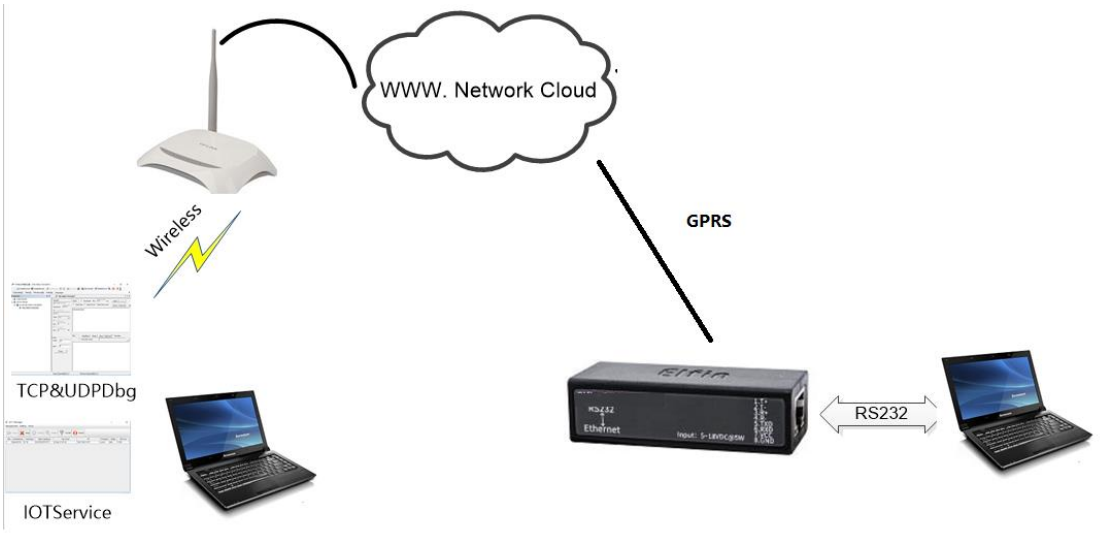
- The data transmission is completed as follows.



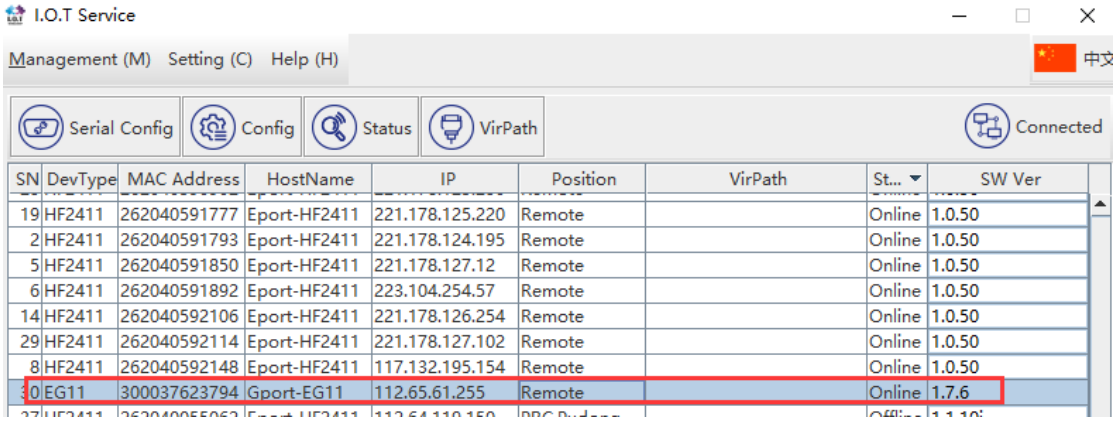
5. EG10 HARDWARE CONNECTION

EG10 can only communicate in remote mode, using the remote virtual serial port and virtual channel provided by High Flying to complete data transmission.

5.1. REMOTE VIRTUAL SERIAL PORT TEST

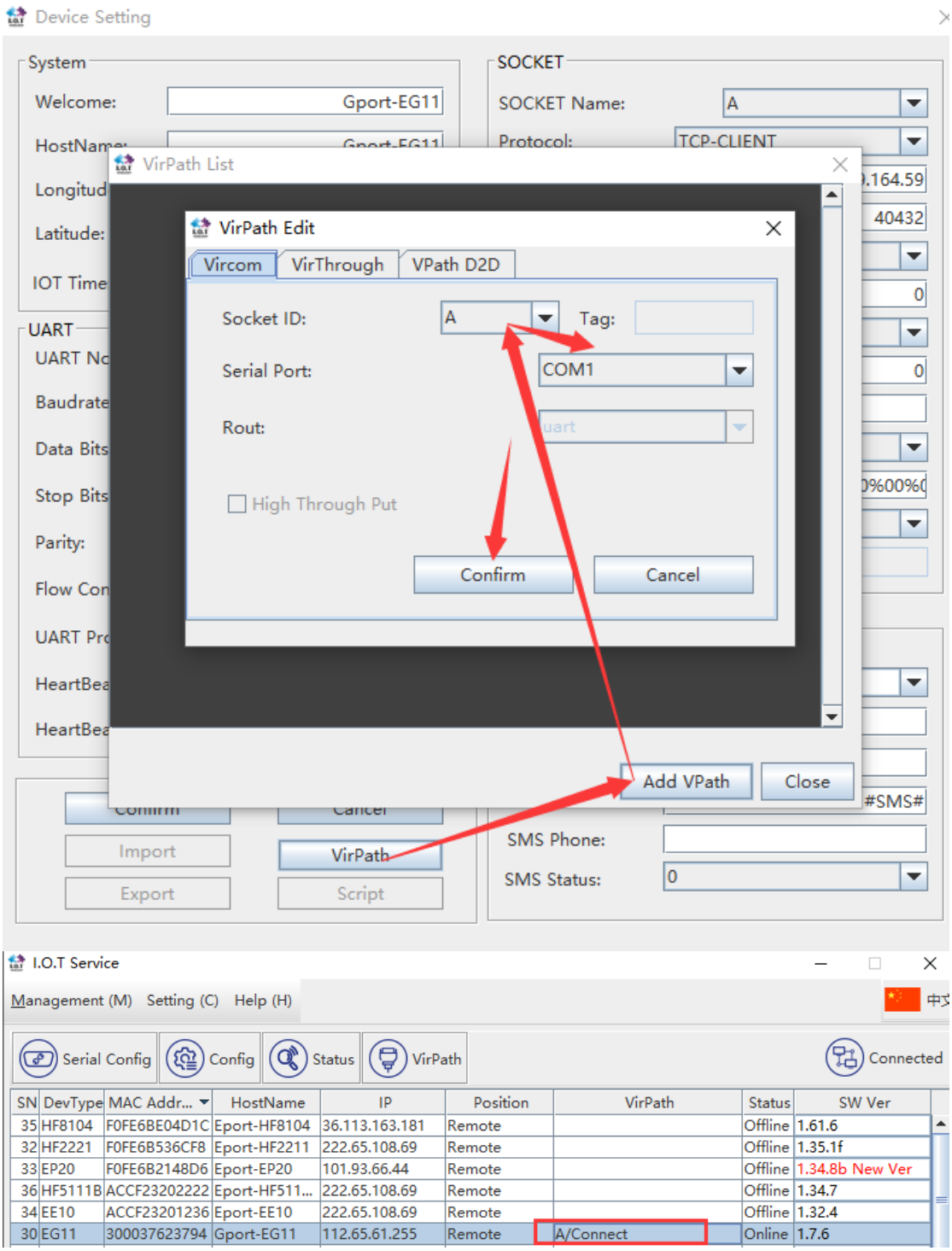


- According to the IOTService Tool documentation, add the High Flying's product to the user account (the product needs to be plugged into the external network such as the SIM card). This device has been added remotely as shown below.

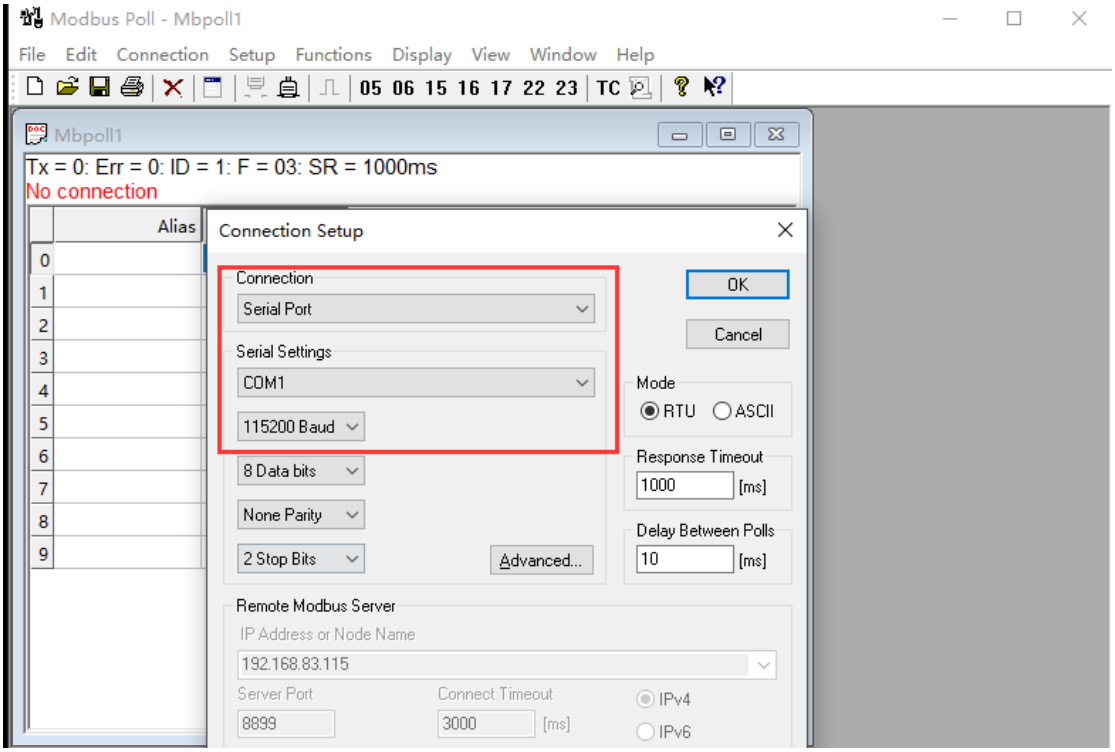


SN	DevType	MAC Address	HostName	IP	Position	VirPath	St...	SW Ver
19	HF2411	262040591777	Eport-HF2411	221.178.125.220	Remote		Online	1.0.50
2	HF2411	262040591793	Eport-HF2411	221.178.124.195	Remote		Online	1.0.50
5	HF2411	262040591850	Eport-HF2411	221.178.127.12	Remote		Online	1.0.50
6	HF2411	262040591892	Eport-HF2411	223.104.254.57	Remote		Online	1.0.50
14	HF2411	262040592106	Eport-HF2411	221.178.126.254	Remote		Online	1.0.50
29	HF2411	262040592114	Eport-HF2411	221.178.127.102	Remote		Online	1.0.50
8	HF2411	262040592148	Eport-HF2411	117.132.195.154	Remote		Online	1.0.50
30	EG11	300037623794	Gport-EG11	112.65.61.255	Remote		Online	1.7.6

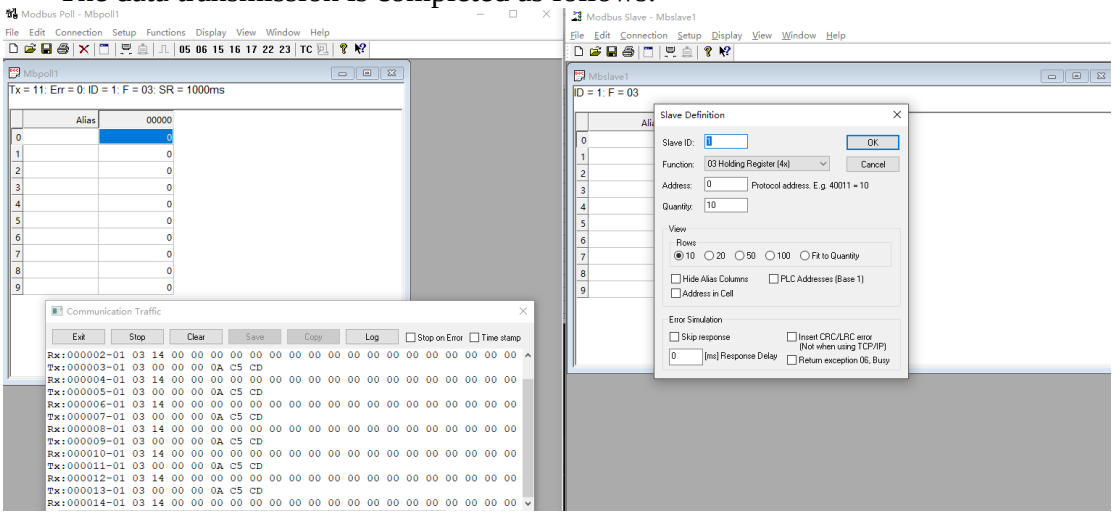
- Create a VirPath.



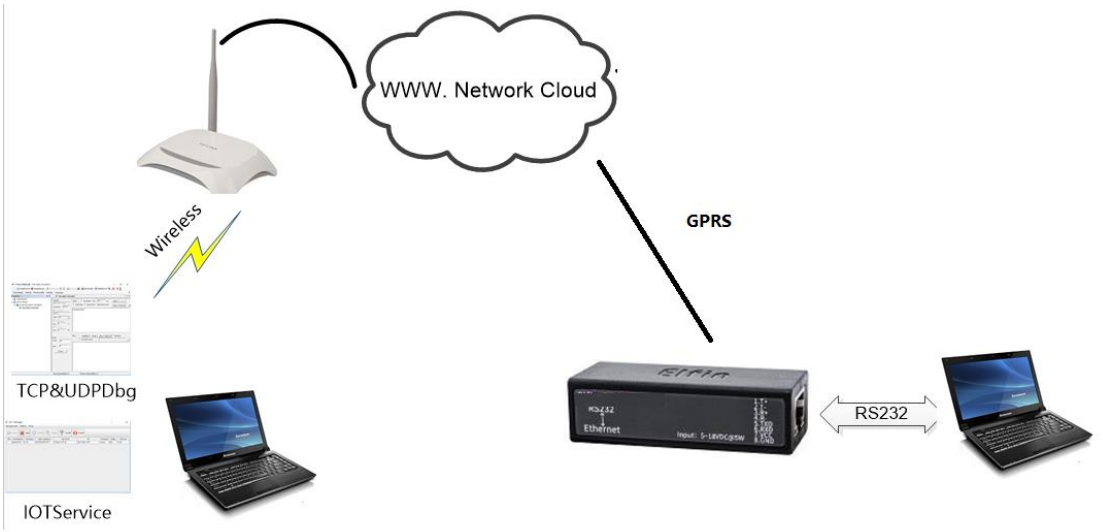
- Open modbus poll, use the VirPath you just created, and open the modbus slave to connect the physical serial port of High Flying's products.



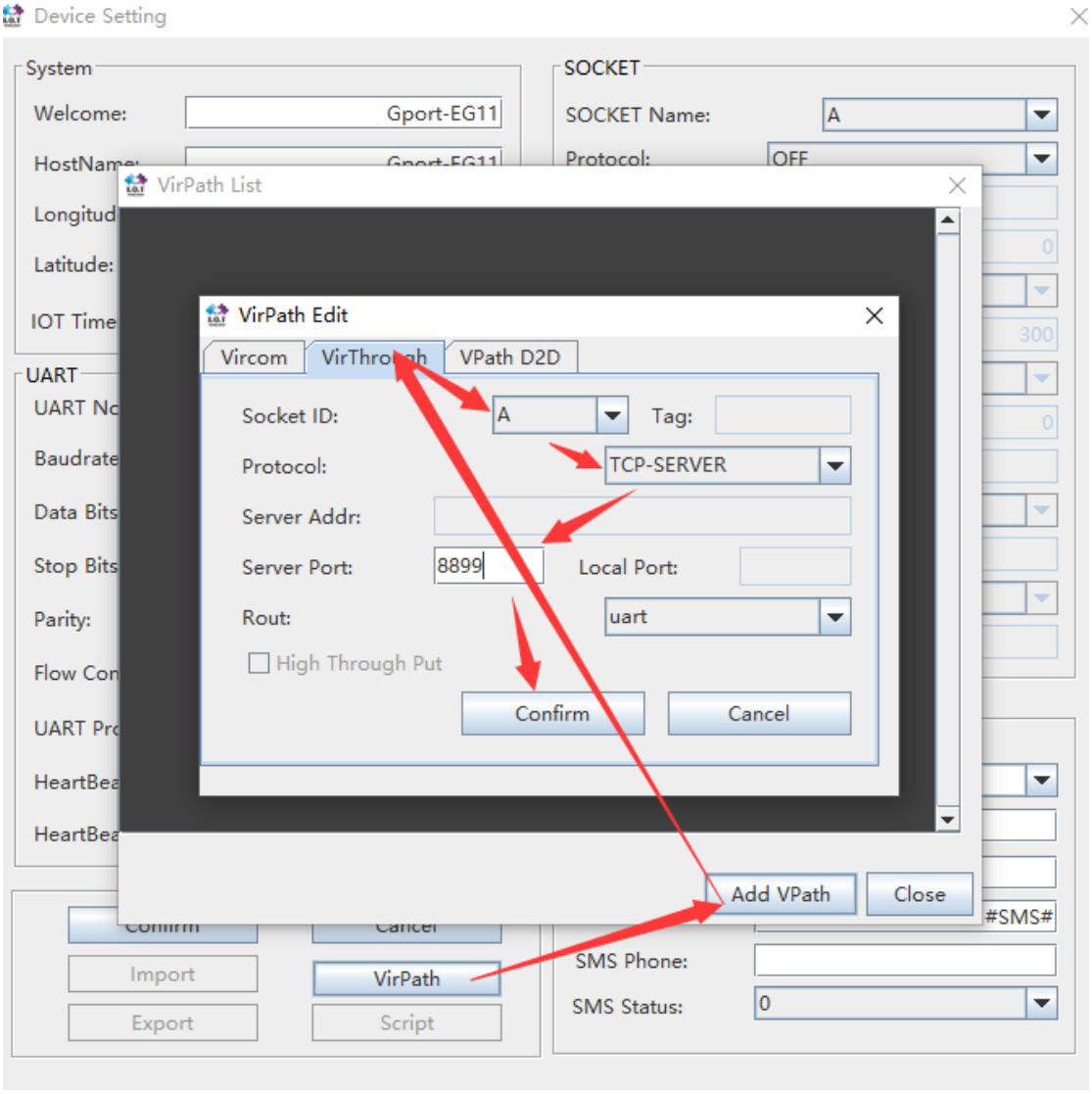
- The data transmission is completed as follows.

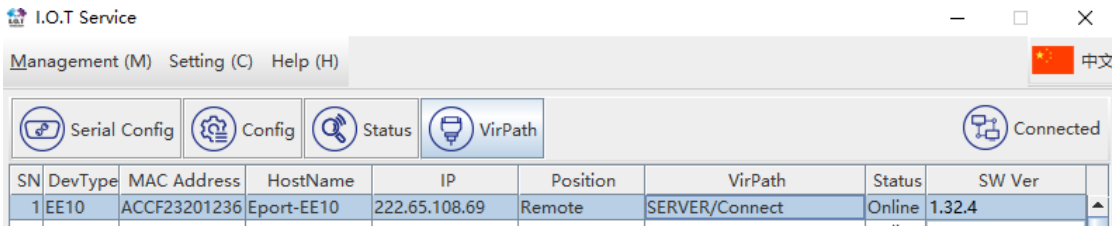


5.2. REMOTE VIRTUAL CHANNEL TEST



- Add the binding device, and create a VirPath this time, according to the TCP Server mode.





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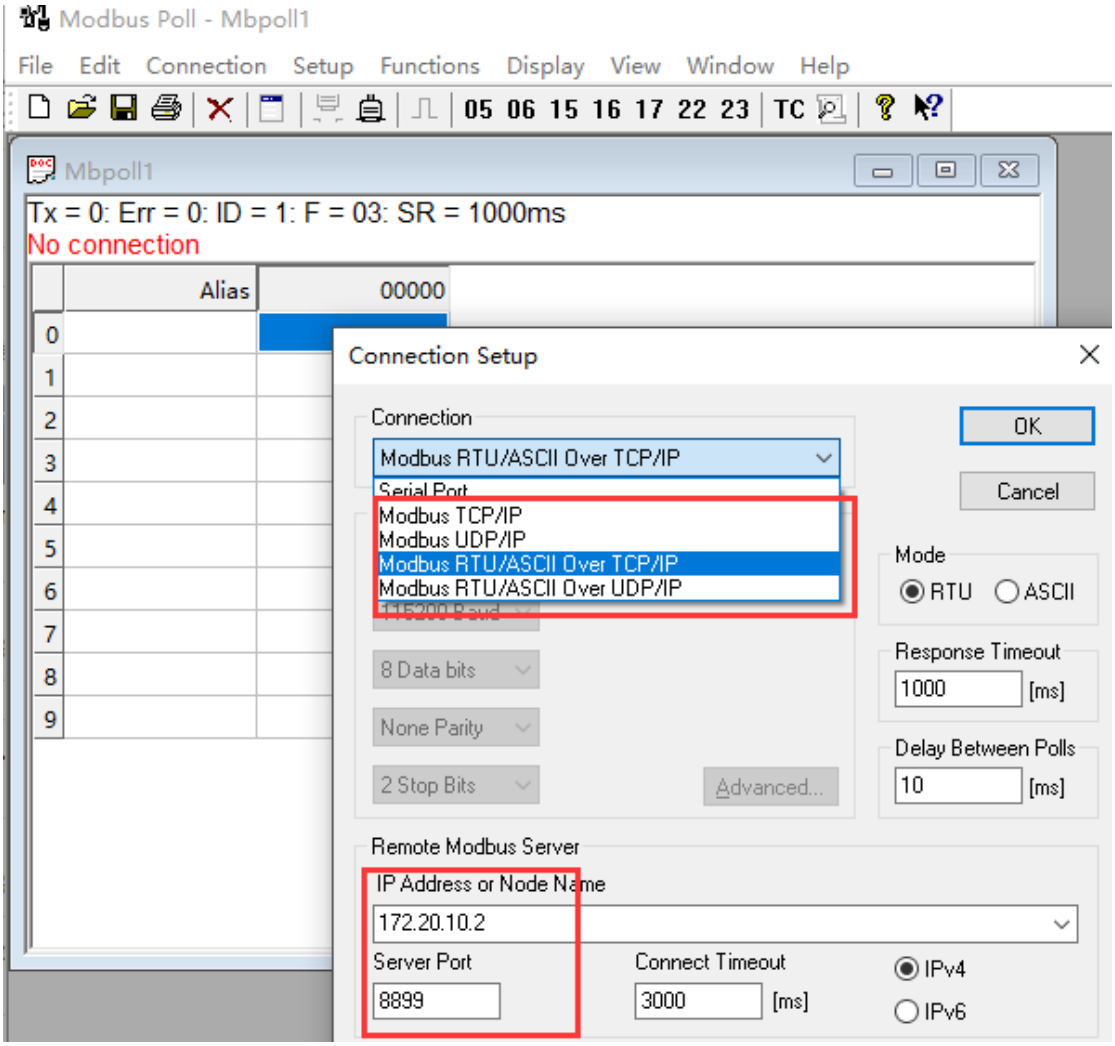

- The data transmission is completed as follows