LINOVISION IOT-R32W Rugged and Versatile Cellular Router Instructions

LINOVISION IOT-R32W Rugged and Versatile Cellular Router

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Purpose

Chapter 1

IOT-R32W support 1x DI (digital input) and 1x DO (digital output).
It supports to set linkage between DI and DO. When DI receive the signal, it trigger the action of DO.

Besides the DO action, it also supports the linkage action of SMS, Email and Cellular UP from DI.

Applications

Chapter 2

For example, DI can connect some sensors, like door opening sensor, temperature measurement sensor, etc. DO can connect some alarming devices, like warning light, alarm bell, etc.

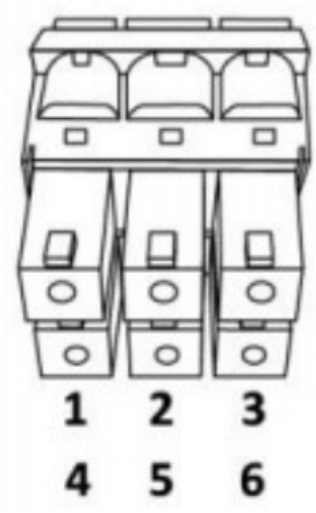
So, when the door is opened or temperature is high, we can receive alarm information.

Connection Diagram

Chapter 3

PIN definition of IOT-R32

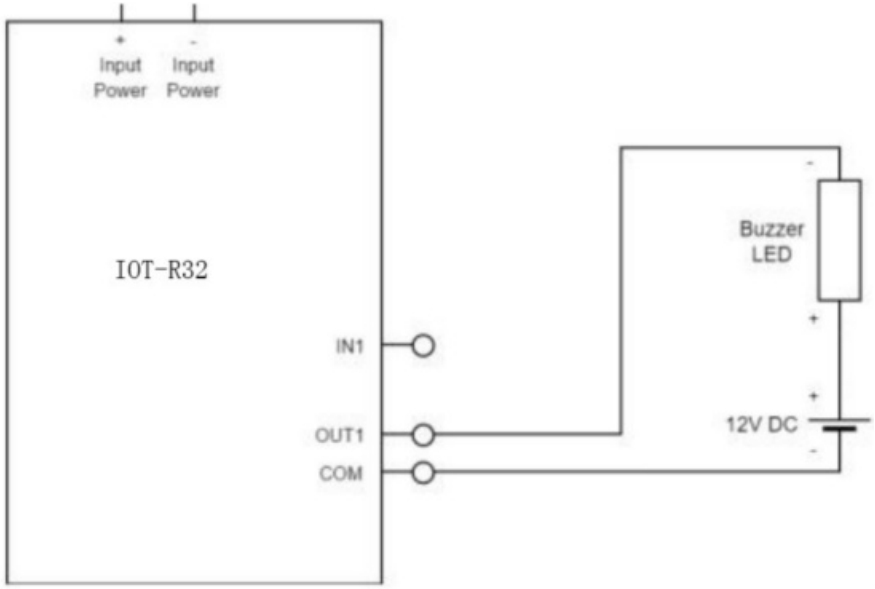
PIN	RS232	DI	DO	Description
1	—-	—-	OUT	Digital Output
2	—-	**IN**		Digital Input
3	GND	—-	—-	Ground
4	—-	COM	COM	Common Ground
5	RXD	—-	—-	Receive Data
6	TXD	—-	—-	Transmit Data



Example of DO wiring

Connect the warning light to the OUT and COM ports of the router and then power on the router for testing.

COM port-negative pole of power supply-positive pole of power supply-positive pole of warning light-negative pole of warning light-OUT



Device List

Chapter 4

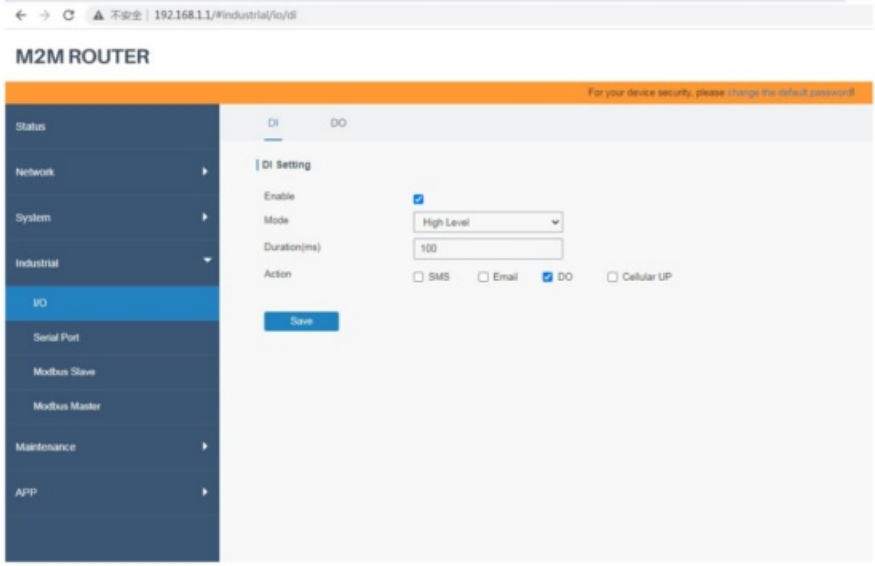
Test Tools	Quantity	Description
Warning Light	1	Observe the DO port changes visually
Power Supply	1	12V DC
Computer	1	Login router WEB interface to set c onfiguration
IOT-R32	1	Main test equipment

Instructions

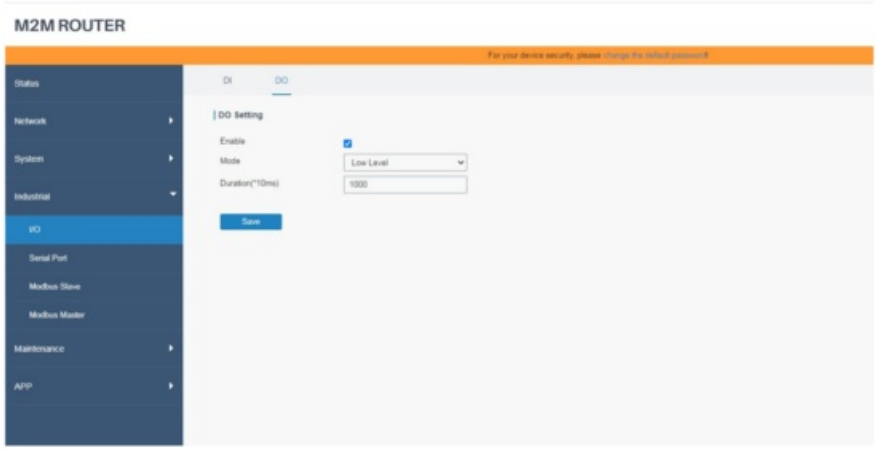
Chapter 5

After the connection is completed according to the connection diagram, Log in to the web page of IOT-R32 for configuration

Check DO linkage trigger, DI is high by default, and detected as low when DI is grounded.



You can configure DO to be low by default and Duration: 1000*10ms. At this time, the LED is off.



When DI-IN receives a switch signal, it will be linked to DO. After DO is output, the LED will turn on for 10s, and then turn off.

Common problems and troubleshooting methods

The warning light is always off during the test

1. Check whether the warning light is on or not when the warning light is connected to the power supply, make sure the warning light is working well.
2. Check whether the Modbus Slave function is enabled or not. If enabled, please turn off these functions before testing.
3. After change the settings, please make sure click save and apply, or the settings will not take effect.
4. Check whether the connected port is correct or not.

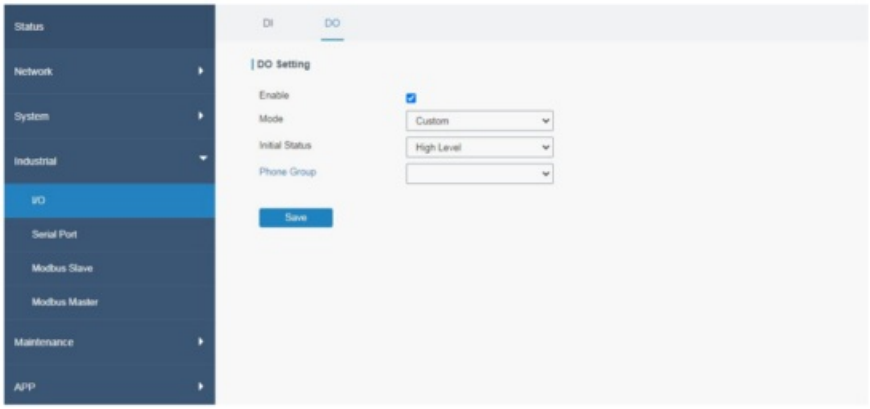
The light stays on during this test

1. Check whether there is a short circuit in the wiring.
2. Check whether the COM and OUT ports are connected reversely.
3. Check if Modbus Slave is closed.

Other ways to control DO port

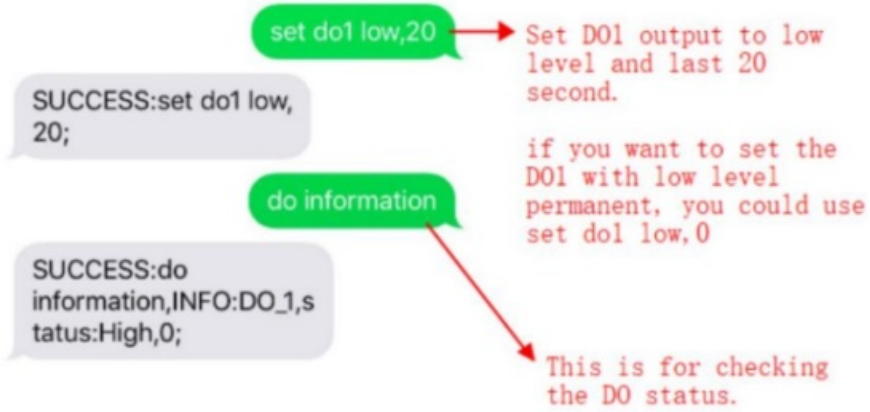
Chapter 6

Besides triggering the DO linkage by DI, you can also control DO through SMS. At this time, the working mode needs to be selected as Custom.



Message content: set **do1 low,20** //20 means the time of DO output low level,
the unit is second; when the time is set to 0, it means it remains constant
When DO wants to stay low, send set **do1 low,0**
Send when DO is to be kept high: **set do1 high,0**
Query the current DO status: **do information**

The following figure is an example of sending control SMS and router reply SMS content:

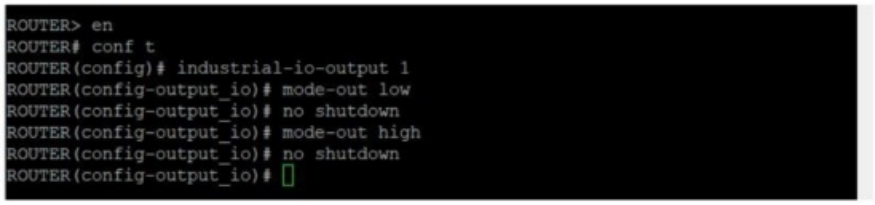


Control via CLI

The DO port status can be controlled through the CLI command as shown in the figure. After modification, you need to use no shutdown to enable.

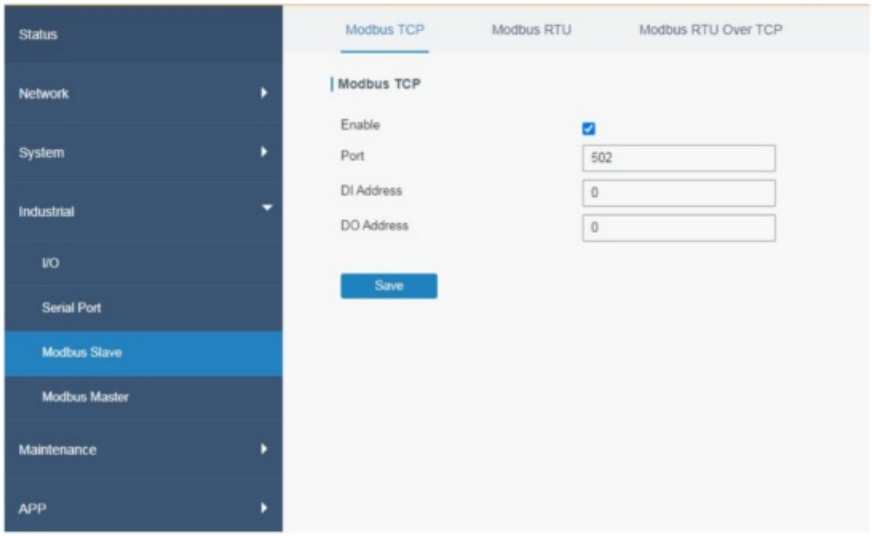
ROUTER > en
ROUTER # conf t

ROUTER (config)# industrial-io-output 1 ROUTER(configoutputio)# mode-out low
ROUTER > en
ROUTER # conf t
ROUTER (config)# industrialio-output 1
ROUTER (config-outputio)# mode-out low
ROUTER (config-outputio)# no shutdown //DO Change to low level mode
ROUTER (config-outputio)# mode-out high
ROUTER (config-outputio)# no shutdown //DO Change to high level mode

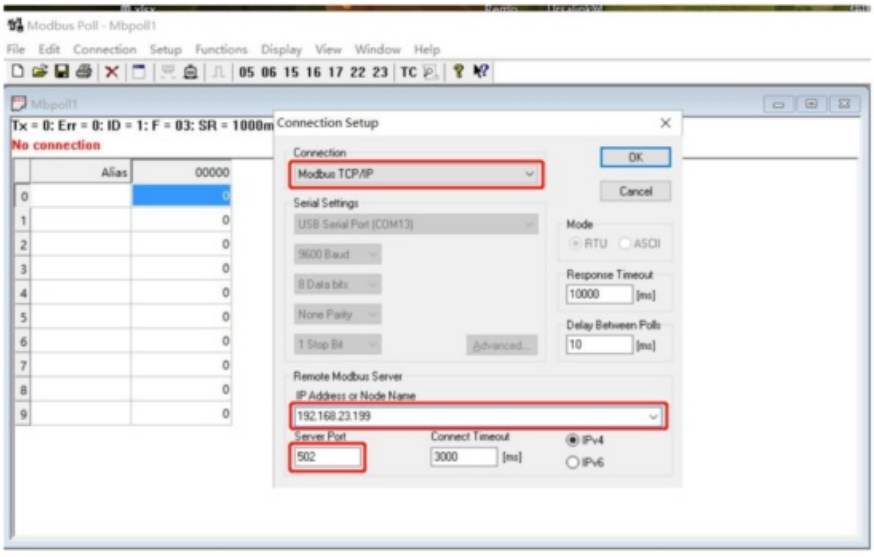


Control DO via Modbus TCP

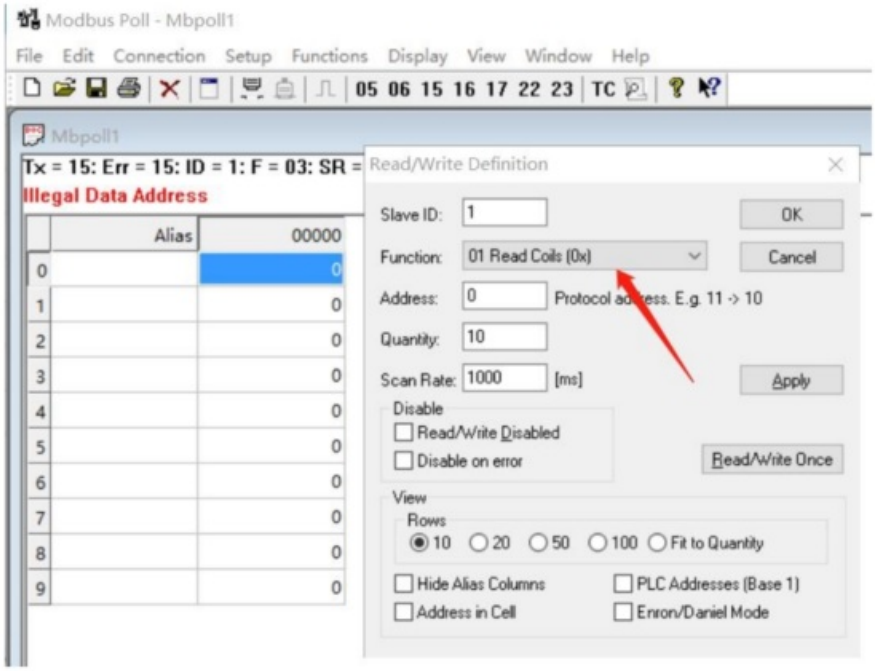
a. Enable Modbus TCP, click save, apply.



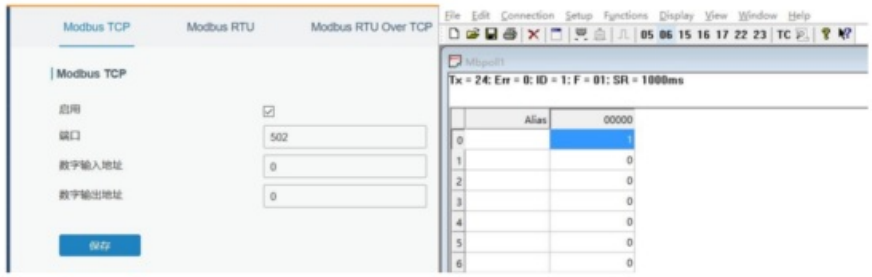
b. Open the Modbus Poll tool, select Modbus TCP/IP when connecting, fill in the router IP and port (default 502) and click ok to connect.



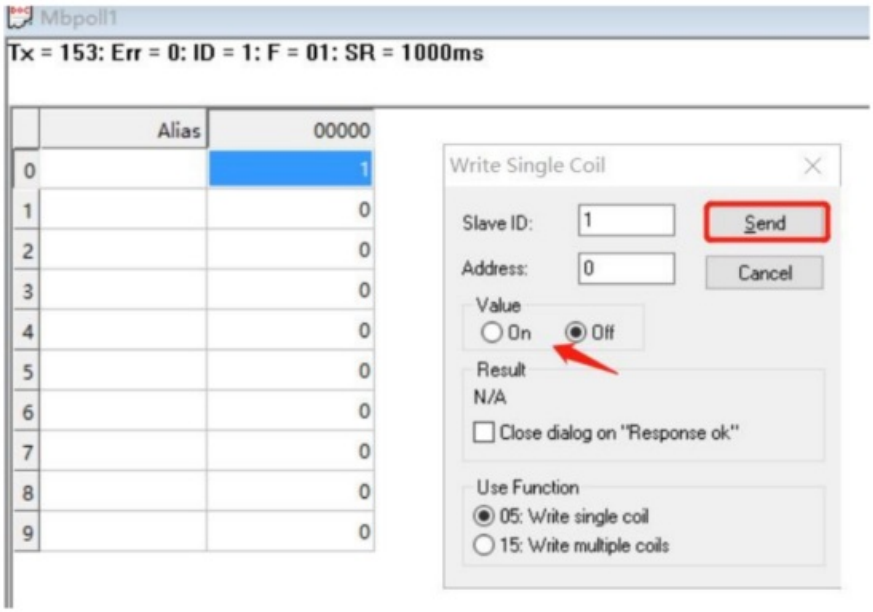
c. Set the function code of the data to 01 Read Coil (0x), otherwise there will be an error report of the wrong data address.



d. View the current DO port status according to the output address bit set on the router (DI port needs to be read with function code 02).

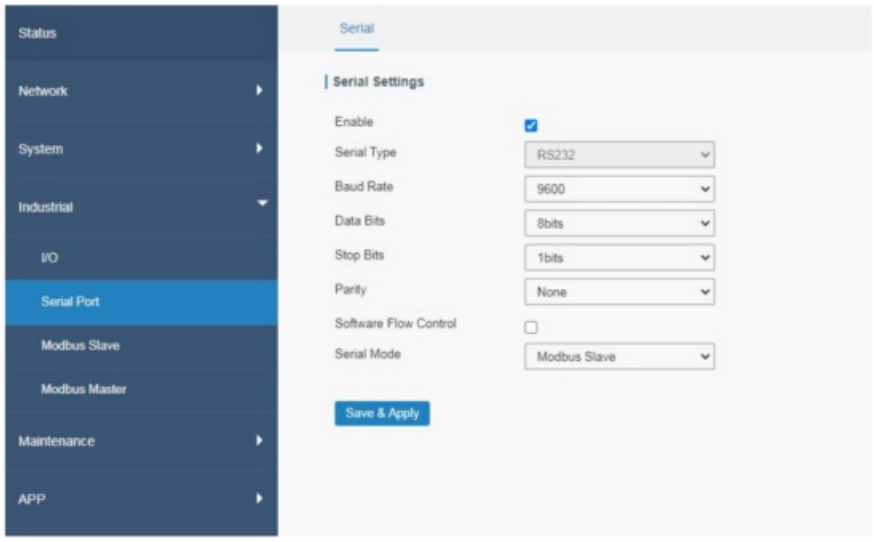


e. To control the DO status, double-click the corresponding register bit, and click Send after setting.
0 means low level mode, the light is on at this time
1 stands for high level mode, the light is off at this time

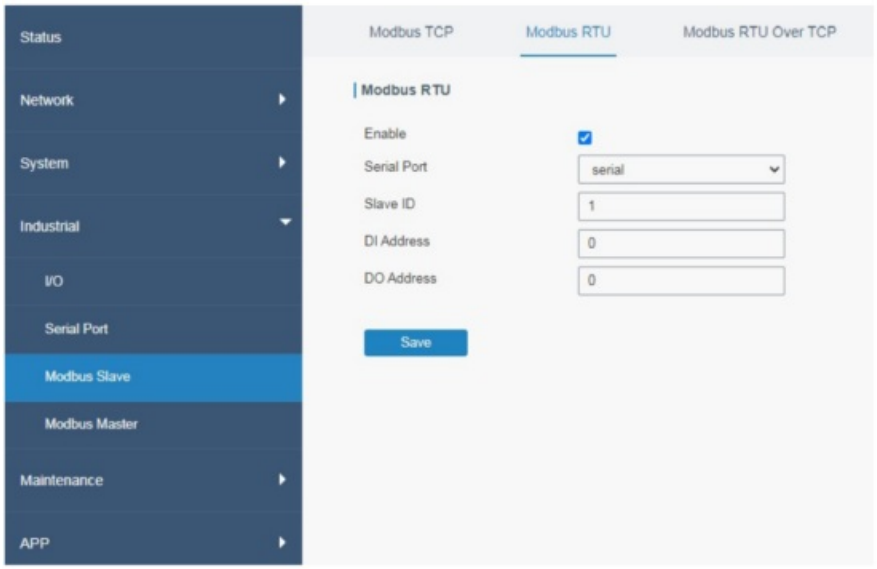


Control DO via Modbus RTU

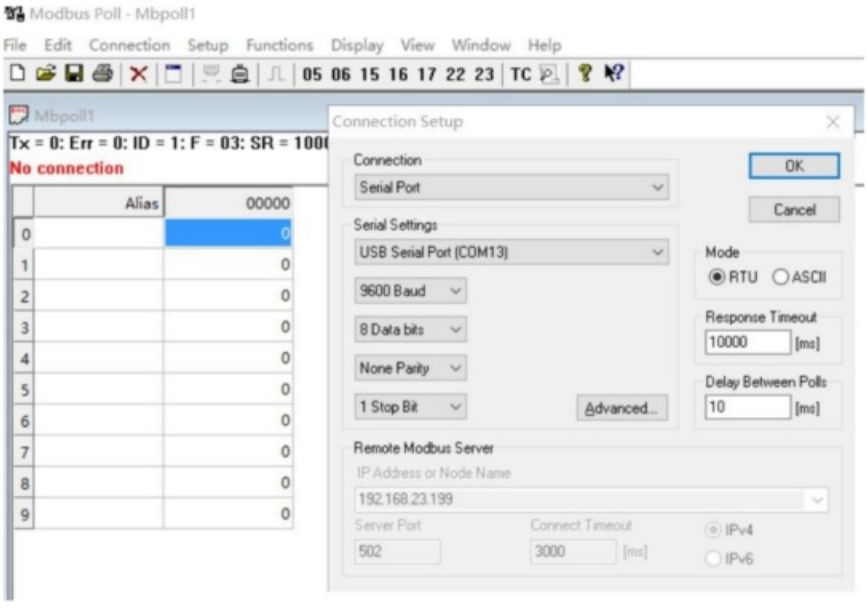
a. Connect the RS485/RS232 interface of the router to the computer via a USB converter.
b. Enable the serial port to be used on the serial port interface and set the serial port mode to Modbus Slave.



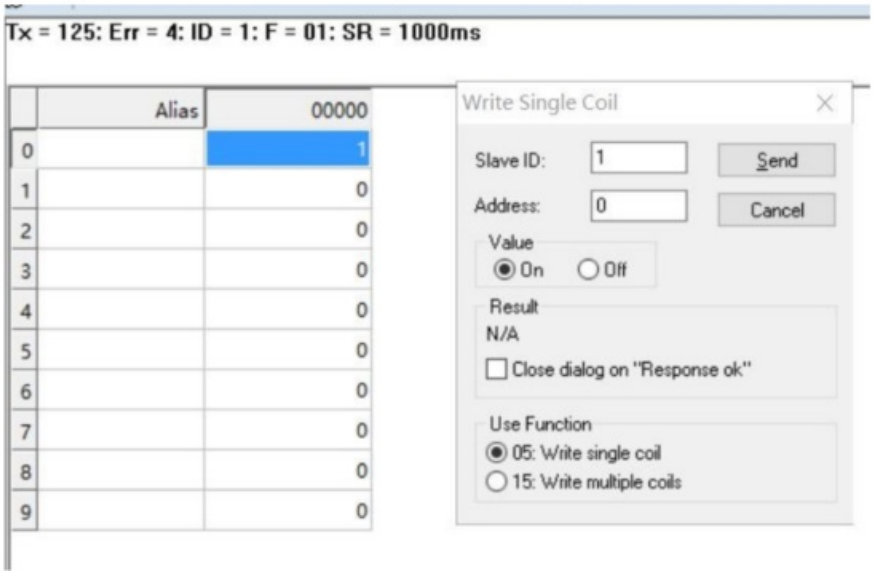
c. Enable Modbus RTU function and select the corresponding serial port.



d. Start the Modbus Poll tool, set to serial port mode, select the corresponding serial port and connect.

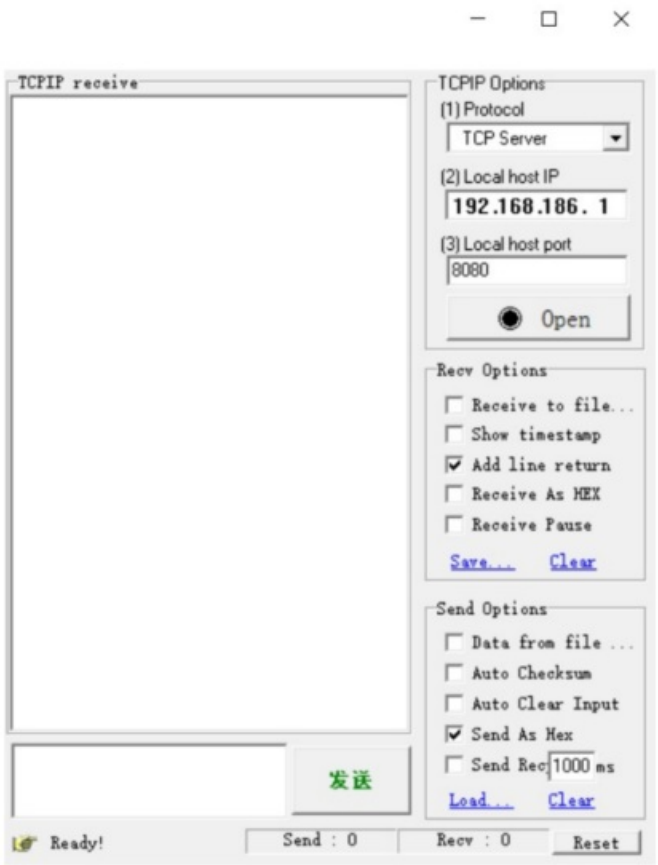


e. The value can be viewed on the register and the DO port can be modified.

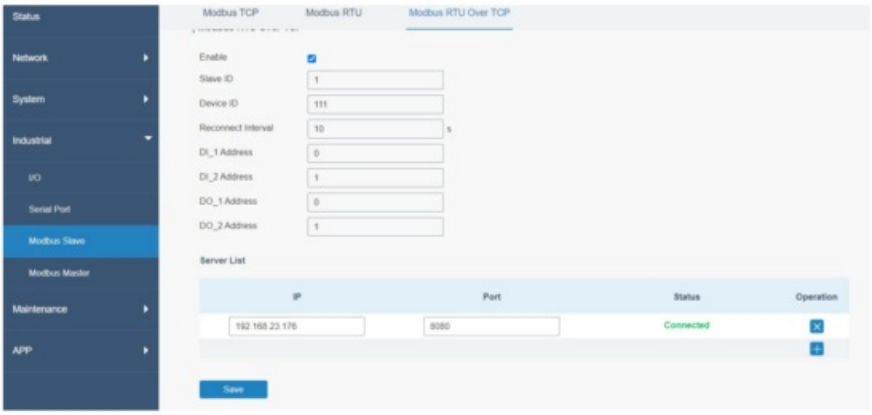


Control DO via Modbus RTU over TCP

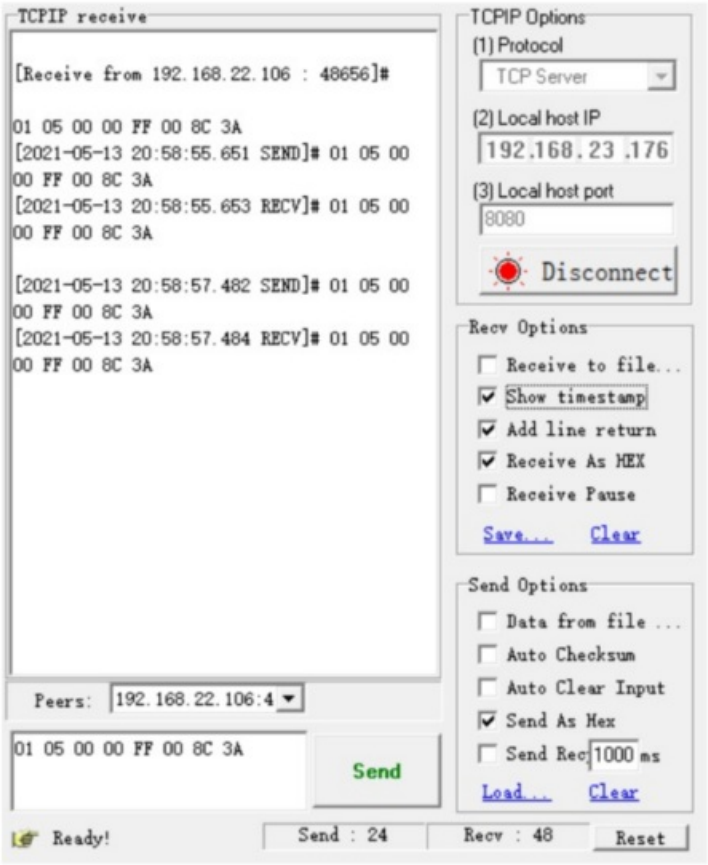
a. After creating the TCP server through Netassist, open it, and note that you need to set the display and sending to hexadecimal.



b. Enable Modbus RTU Over TCP and set the server list. When the connection is successful, it will appear as shown in the figure.



c. The DO status can be modified by issuing a command on the server side, and the router will reply the same command when the sending is successful.



Command interaction example

The issued command will change according to the slave ID and read address. The slave ID is 1, and the read register is 0 as an example.
DO changed to 1
01 05 00 00 FF 00 8C 3A
DO changed to 0
01 05 00 00 00 00 CD CA

Documents / Resources

	**LINOVISION IOT-R32W Rugged and Versatile Cellular Router** [pdf] Instructions IOT-R32W Rugged and Versatile Cellular Router, IOT-R32W, Rugged and Versatile Cellular Router, Versatile Cellular Router, Cellular Router, Router

References

- **User Manual**