Superisys RF-H Series HF Reader Demo User manual

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1. Software introduction

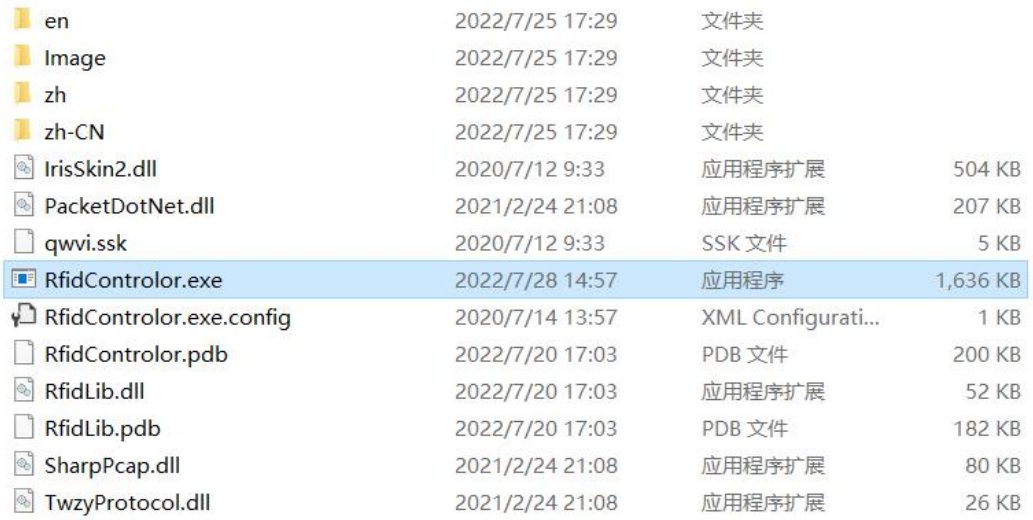
RFID ControlorIs a PC test Demo software for RF-H/U series integrated industrial RFID read and write head, including the following Functions:

- ✓ Communication connection and communication parameter Setting of read and write head
- ✓ Read and write head Read and write function tests and read and Write data monitoring
- ✓ Diagnostic function test of read/write head
- ✓ Read and write head automatic cache function test and data Monitoring

The read and write headers described in this document refer to the user Area of the carrier. (The UID area of the high-frequency carrier can only Be read but not written.)

2. Software use

Decompress the RFID Controlor Demo software, open the corresponding Folder, and go to the root directory as shown in the following Figure:



Double-click the "RfidControlor.exe" application to open the RFID Controlor Demo software interface.

2.1 Read/write head communication connection

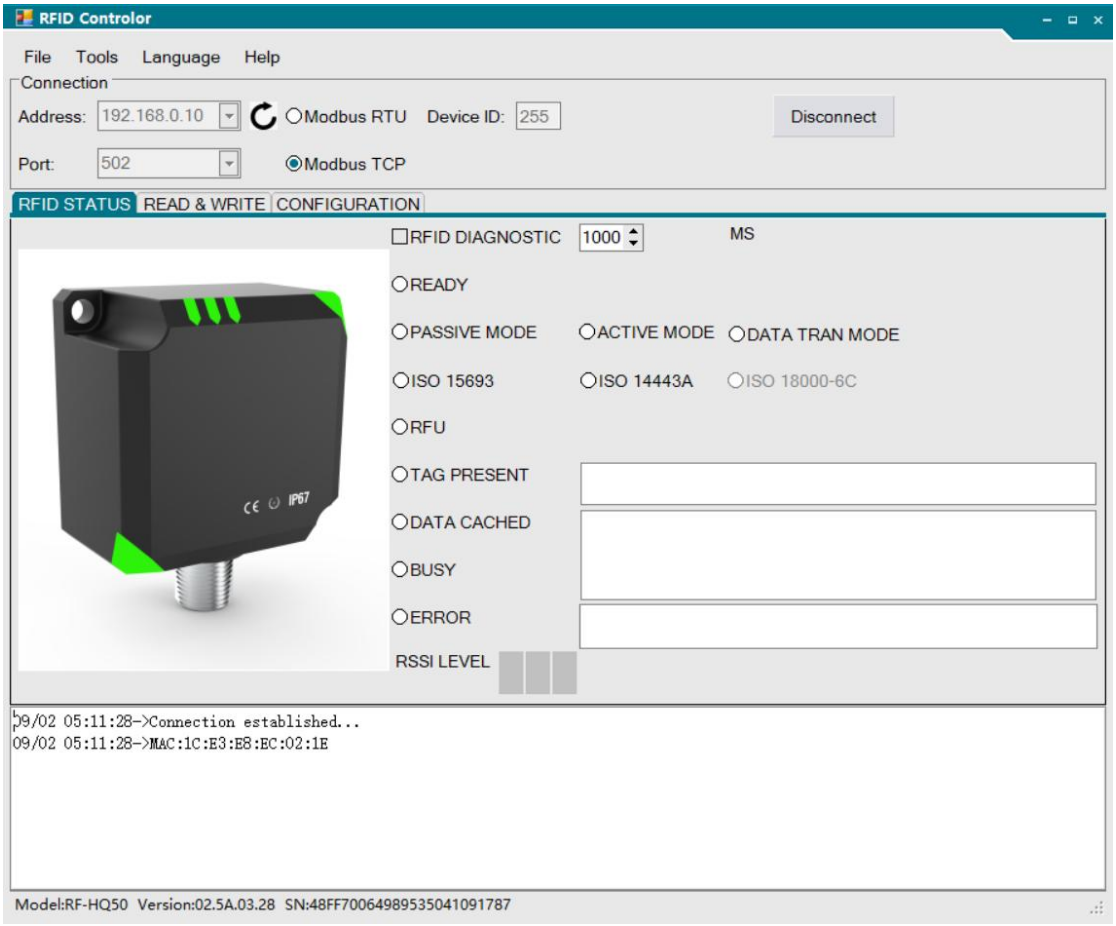
The RF-H series read/write head supports Modbus RTU over serial port and Modbus TCP over Ethernet. The default communication parameters are as follows:

Communication Type	communication protocol	Interface default parameter		
Serial port	Modbus RTU	COM 口: COMxx	Baud Rate: 115200	ID：1
Ethernet	Modbus TCP	IP site: 192.168.0.10	port Number: 502	ID: Broadcast By Default255

This document uses the Modbus TCP communication as an example. The default IP address and port number of the Modbus TCP

Communication are 192.168.0.10 and 502 respectively.

Click the "Connect" connection button on the upper right, and the Read-write head establishes a communication connection, as shown in The picture below:



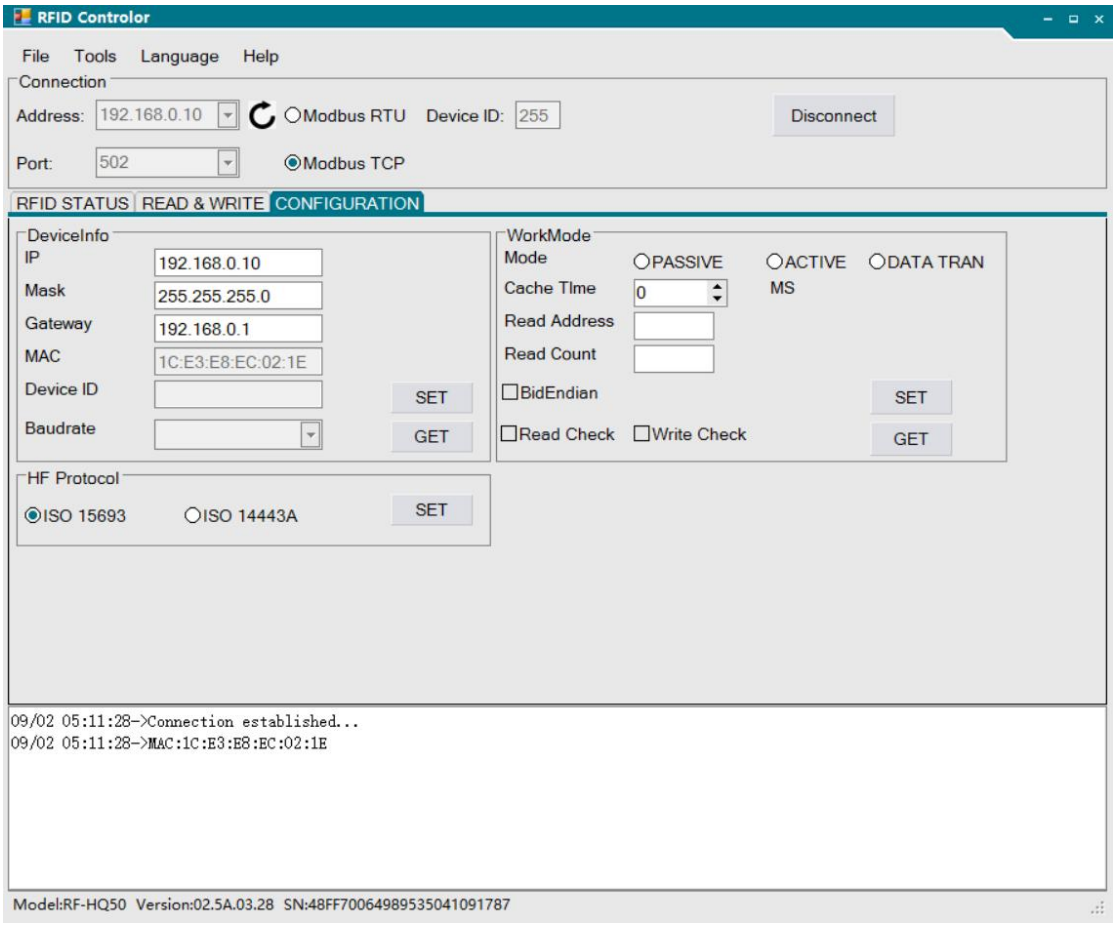
After the read-write header communication connection is successfully Established, the following information data monitoring bar is Automatically displayed:

- The MAC address of the read/write header -- MAC:
- The specific Model of the read and write head -- Model: XXXX;
- Software Version number -- Version: XXXX;
- Serial number of the read/write head -- SN: XXXX.

2.2 Set read/write header parameters

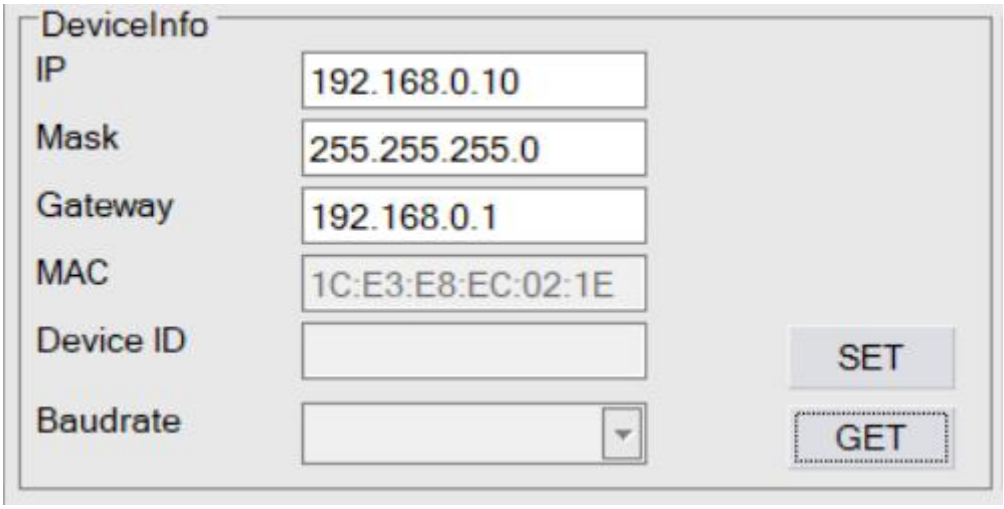
After the read/write header is successfully connected, click the "CONFIGURATION" parameter configuration bar interface, as shown in

The following picture:



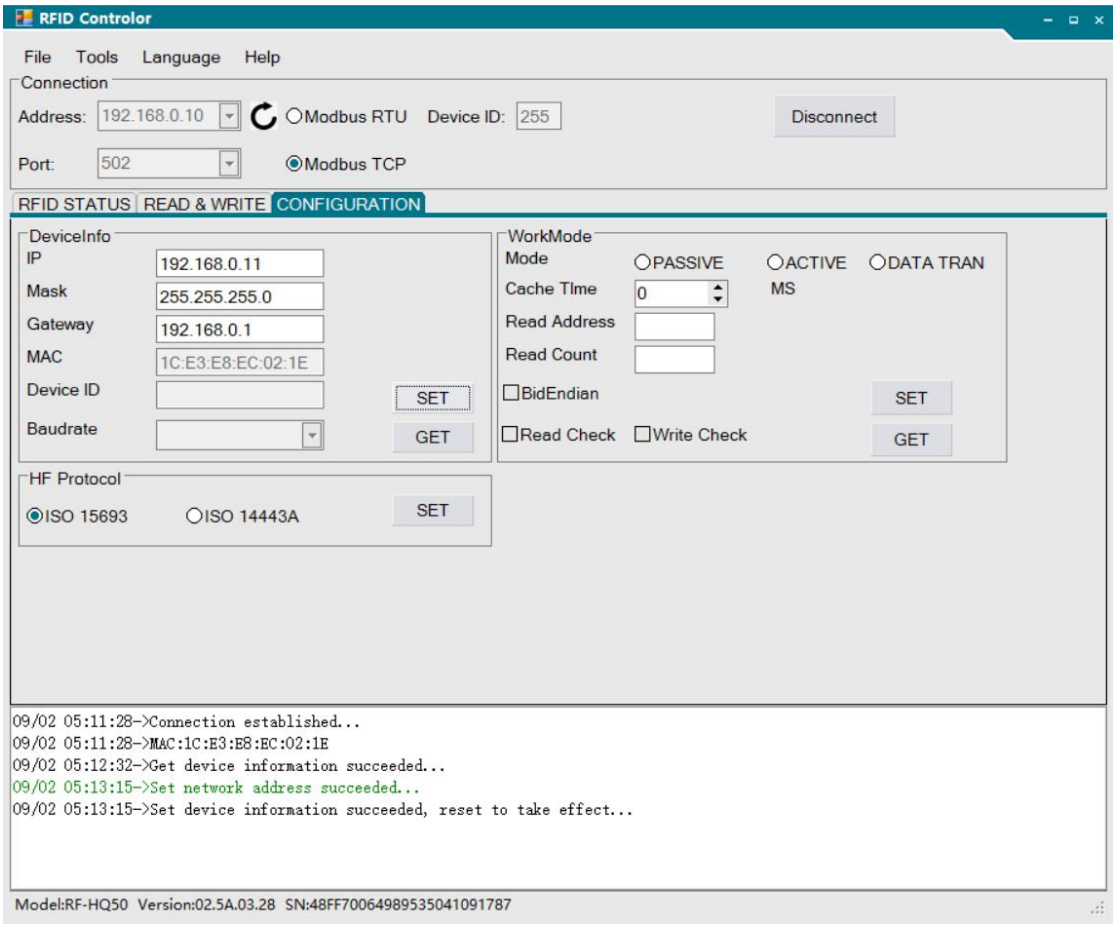
2.2.1 Communication parameter configuration

Click "GET" in the lower right corner of the communication Parameter configuration bar to obtain the communication parameters of The read/write head. The following figure shows the default Communication parameters of the read/write head:



Change the IP address of the read/write head to 192.168.0.11, click

"SET" to set the IP address of the read/write head, as shown in the Following picture:



After the setting is successful, the Set network address succeeded Dialog box is displayed.

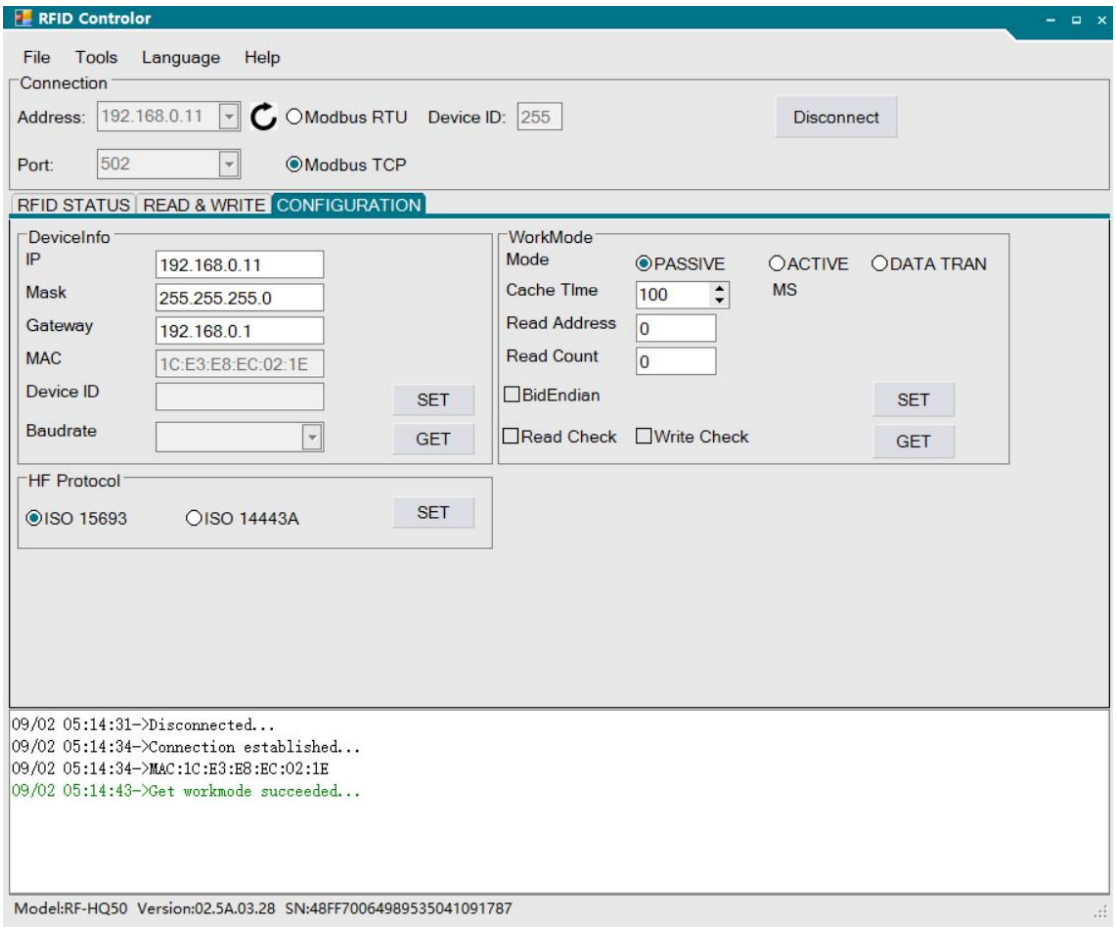
Note: After the IP address of the read/write header is changed, it Takes effect only after the power is powered off and the machine is Restarted.

2.2.2 Working mode configuration

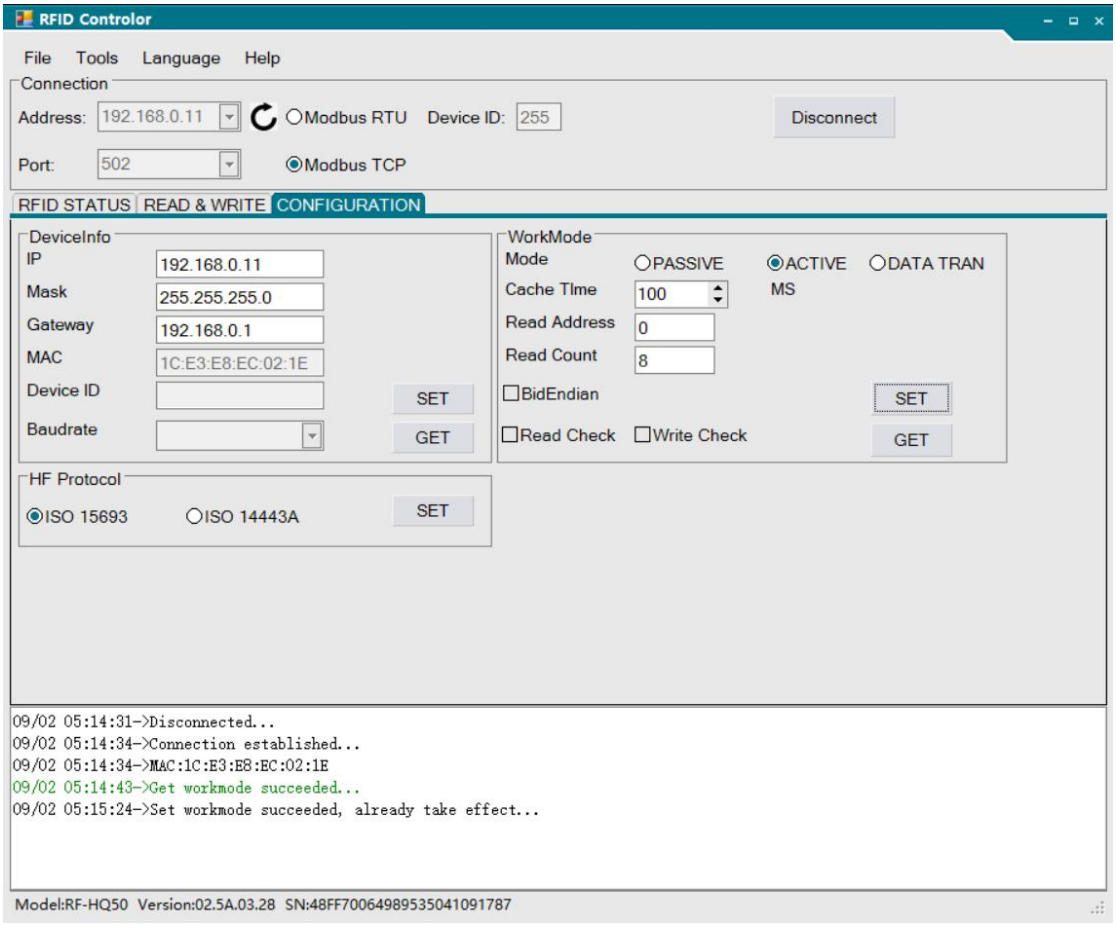
RF-H series read and write heads provide data caching function Mode. By configuring parameters such as read cache area and cache Time of read and write heads, users can realize the function of reading Data on the carrier body within the set cache time (even if the carrier Body leaves the read and write head readable area within the period).

Click GET under WorkMode to obtain the current working mode of

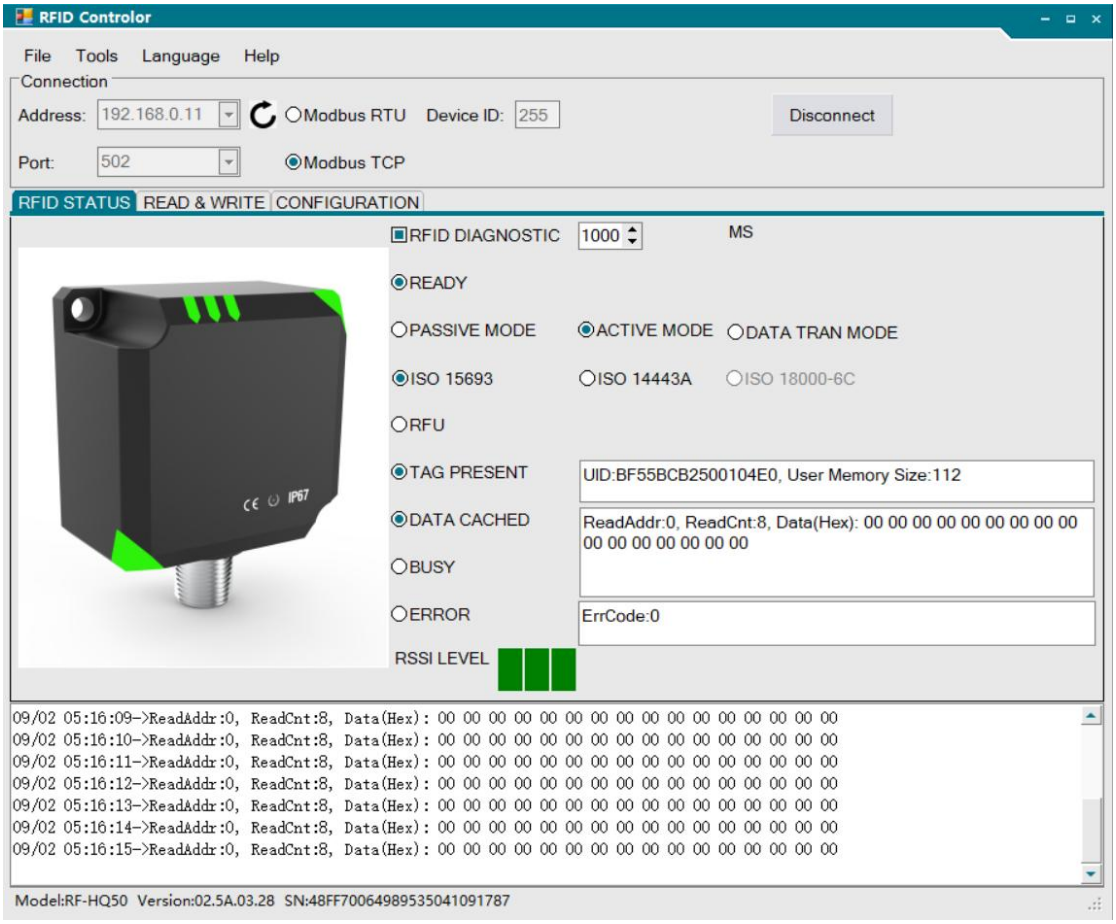
The read/write head. After obtaining the current working mode, the Monitoring information bar shows Get workmode succeeded, as shown In the following figure:



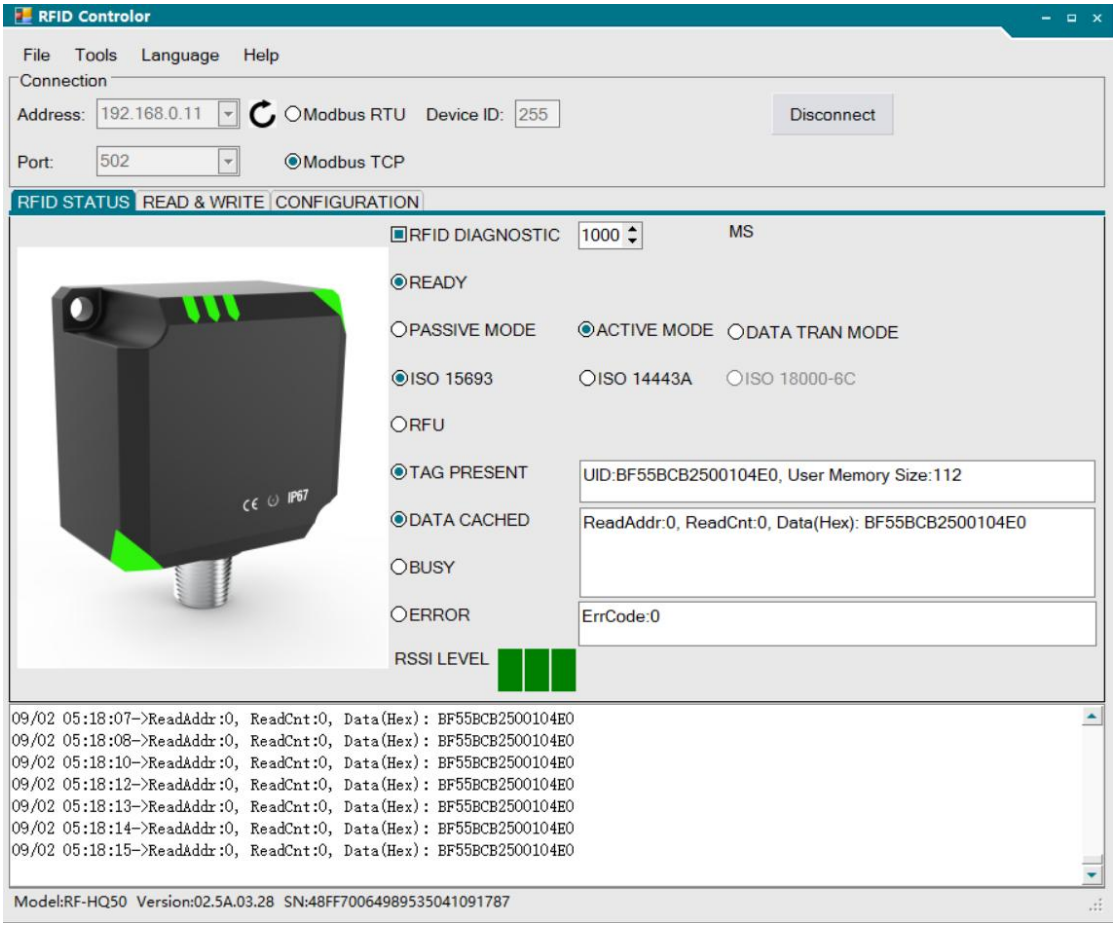
SET "Mode" to "ACTIVE", "Cache Time" to 100ms, the start address of Cache to "0", and the number of words to "8". Click "Set" to set the cache Area and cache time for the read and write head to read the carrier data. The monitoring information bar displays Set workmode succeeded, as Shown in the following figure:



After the setting is successful, go to the "RFID diagnosis" function Interface, turn on the "diagnosis" function, and then put the code body Close to the read and write head, the information data monitoring bar Below will automatically display the automatic cache code body data Configured last time, as shown in the following figure, the automatic Cache code body user area starting address from "0", read "8" data data Records:

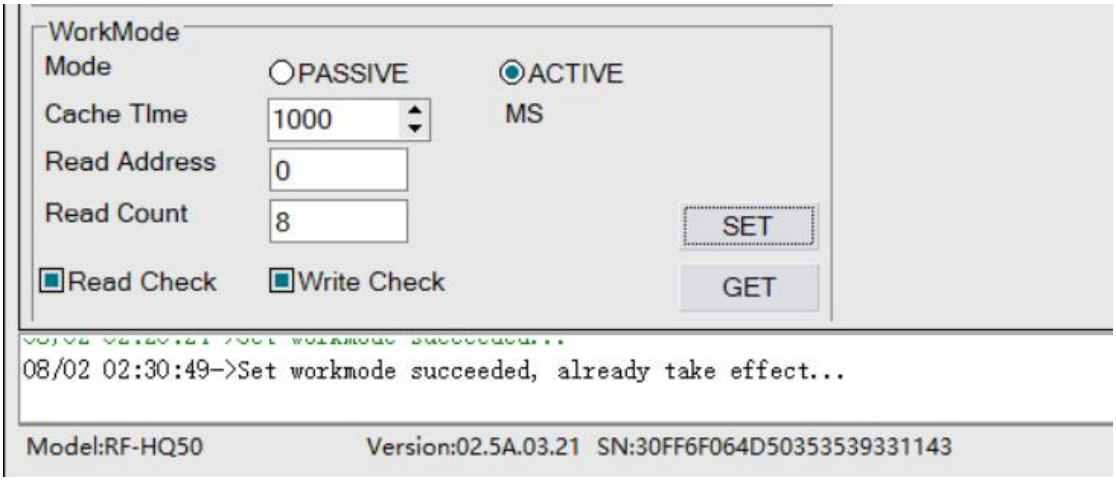


When the number of cached words is set to "0", the read/write Header automatically caches the UID data of the code body by default, as Shown in the following figure:



2.2.3 Read and write check configuration

- Read Check——Read check function: Repeated read for comparison Check
- Write Check——Write verification: After data is written, the system Reads the written data for verification



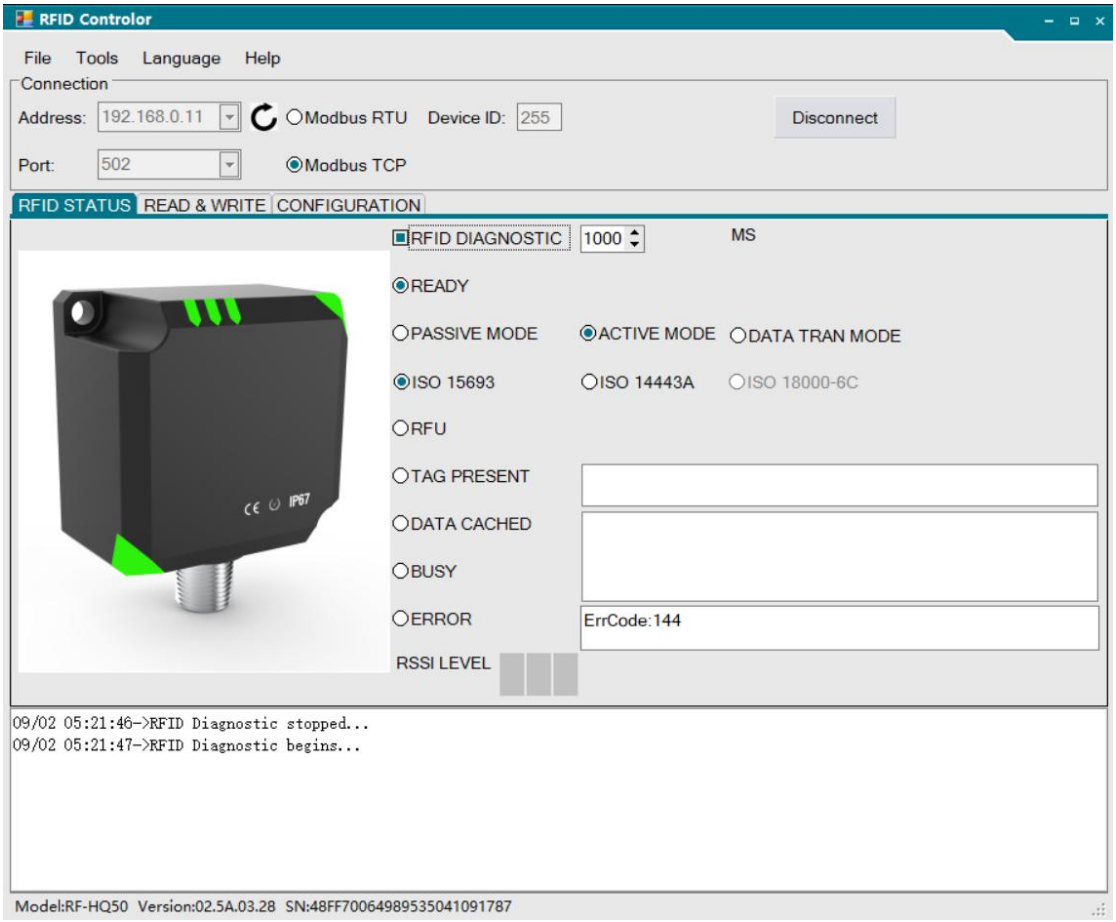
Note: The read and write check function increases the overall read and Write time. Read/write header Each frame of data has its own data

Verification. This function does not need to be configured in actual Applications.

2.3 Read/write head diagnosis function

The diagnostic function of the read/write head is used to diagnose Whether the read/write head has read/write faults, and to verify the Read/write head function and the signal strength of the carrier (in ACTIVE mode).

Check the "RFID DIAGNOSTIC" function under the "RFID STATUS" Item, as shown in the following figure, the information "RFID Diagnostic Begins" is displayed under the data monitoring bar below, indicating that The read and write head begins to perform automatic diagnosis:

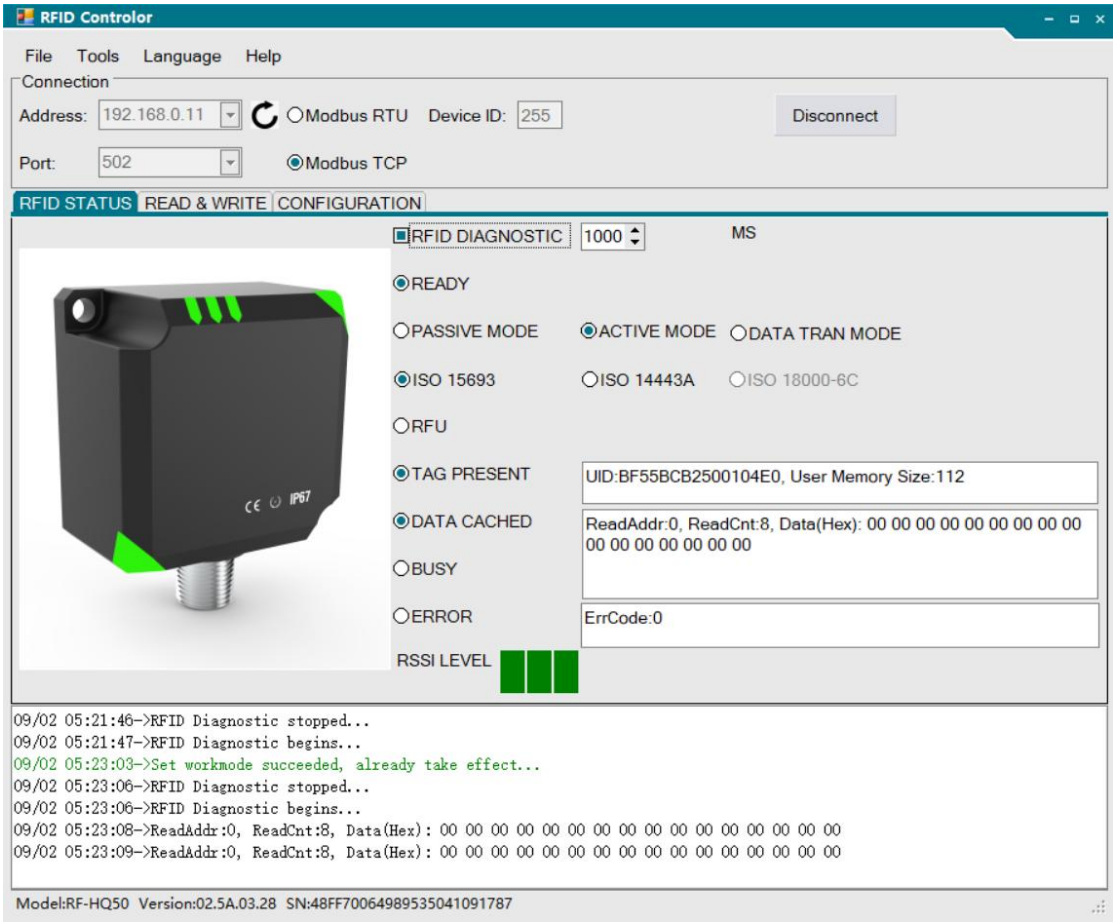


Read/write head diagnosis structure In normal cases, the READY bar Is selected for display. The diagnosis information also includes

WorkMode configured in 2.2.2.

When the read/write head does not detect the carrier, the ERROR Code is 144 (16#90), indicating that the carrier is not detected.

When the read/write head detects the carrier body, the diagnostic Interface will display the "UID" data of the carrier body and the user area Data automatically cached in item 2.2.2, and obtain the signal strength of The carrier body, as shown in the following figure:



- TAG PRESENT——Sensing the carrier

  UID data: XXXX, memory size of user area: XXXX;

- DATA CACHED——Automatic cache data

  Start address: 0, cache bytes: 8, cache read data: XXXX

- RSSI LEVEL——Carrier signal strength: Level 3 (good).

2.4 Read and write head Read and write

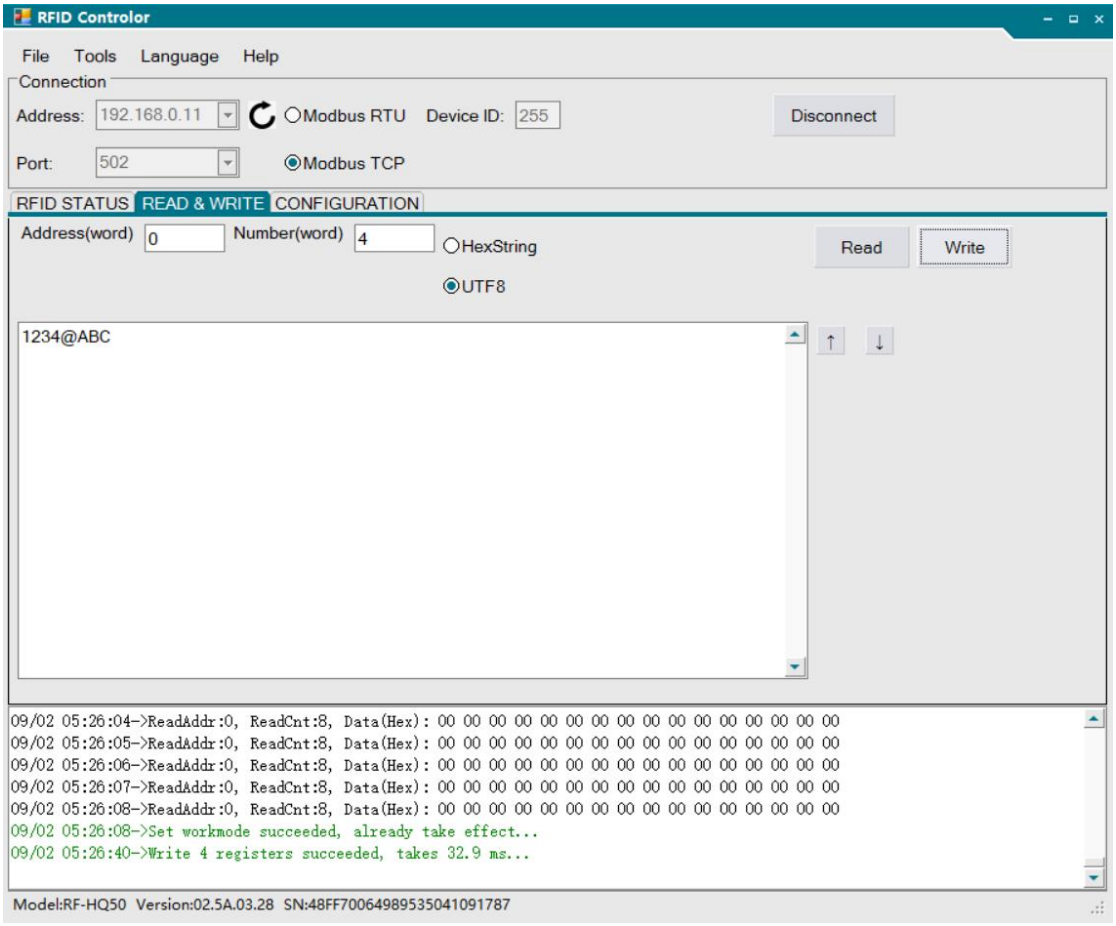
The read and write function of the read and write head is used to Read and write data in the memory of the user area of the carrier.

Click and select "READ&WRITE" item, manually enter the "start Address" and "word length" of the user area memory to be read and Written, and select the format of read and write data (default HexString Hexadecimal data format, can also choose "UTF8" character data format), As shown in the following figure:

Note: The "UTF8" data format is used for reading and writing tests for 2.4 Functions in this manual.

2.4.1 Write function

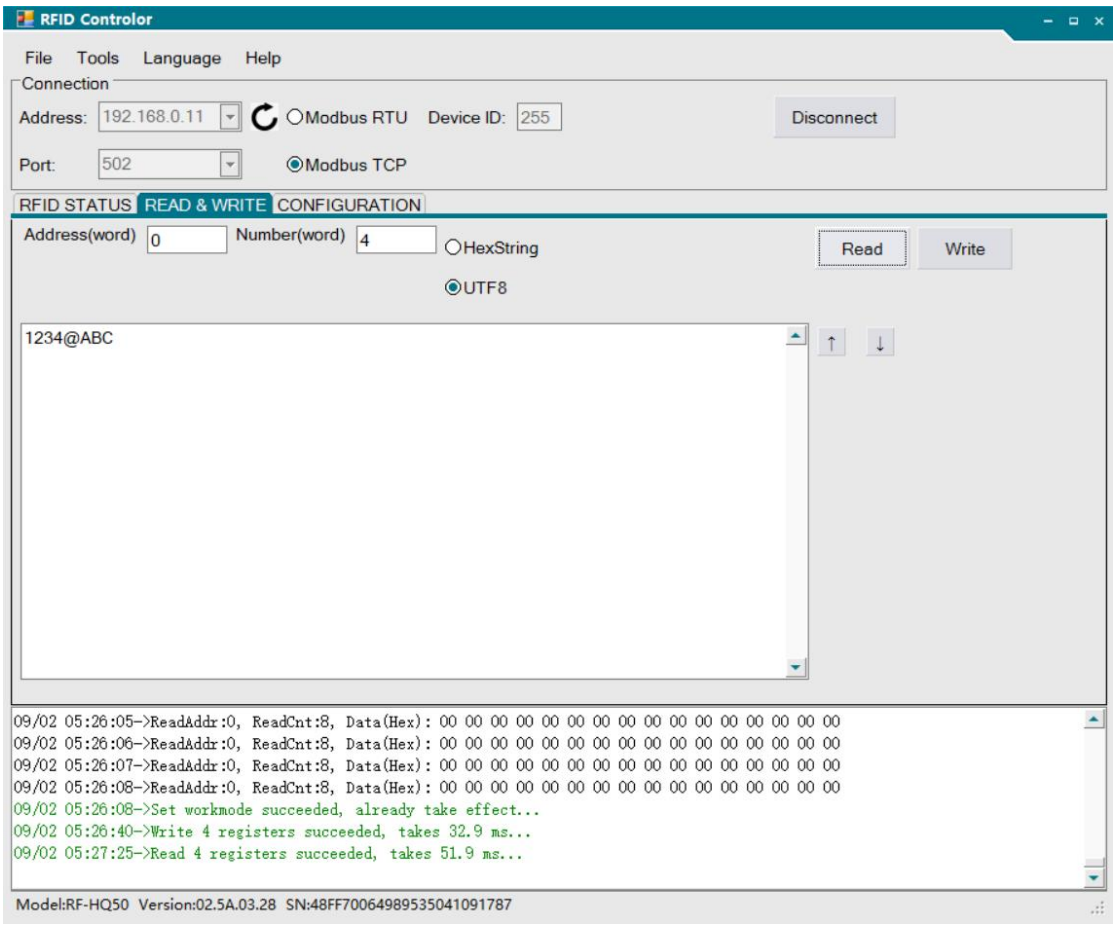
After setting the starting address and word length, select "UTF8" Data format, fill the character data content to be written in the text box Below, and click "Write" button to write, as shown in the following Picture:



If Write user memory succeeded is displayed in the lower Information bar, the write duration is 32.9ms.

2.4.2 Read function

After setting the starting address and word length, select "UTF8" Data format and click "Read" button to read, as shown in the following picture:



After the data write succeeds, the information bar displays Read user Memory succeeded and the write duration is 51.9ms.

The read data text box displays the read data as 1234@ABC. Compared with the written data in 2.4.1, you can see that the read and Write functions of the read and write header are normal.

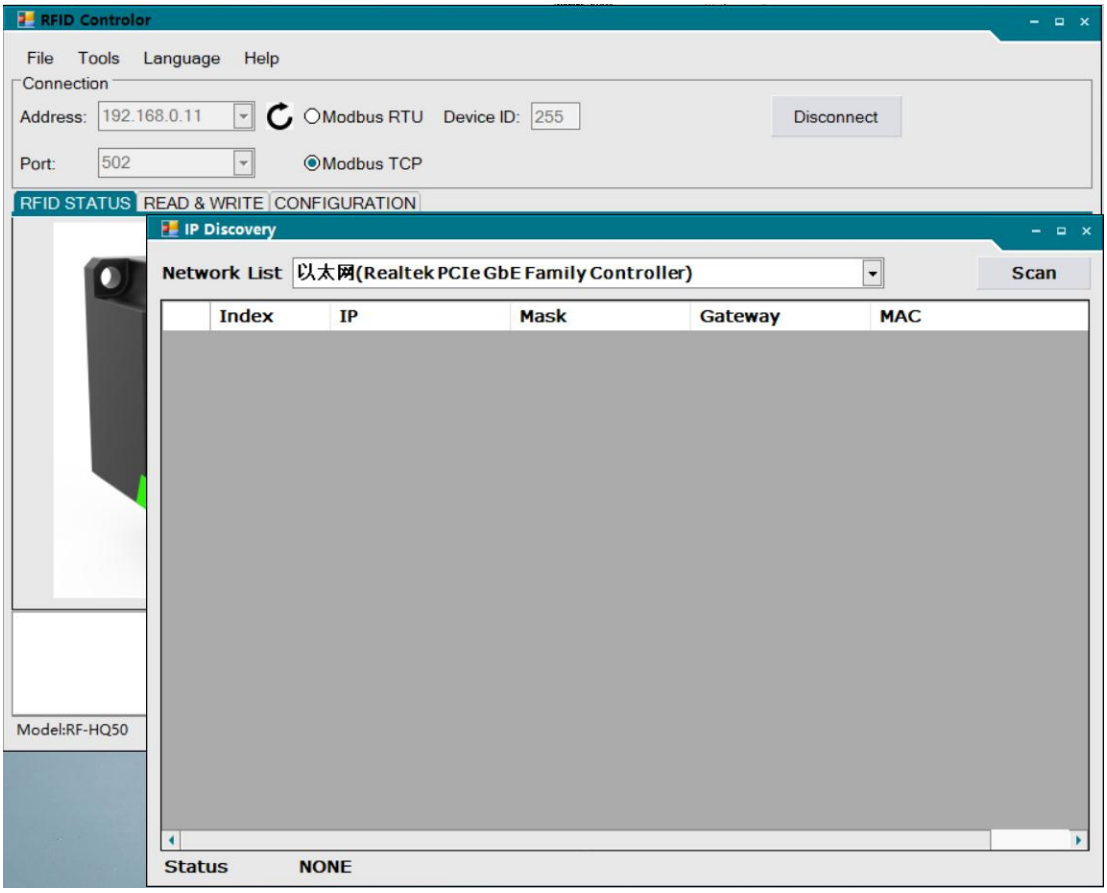
Note: Under the RF-H series read/write head Modbus Communication protocol, the maximum number of one-time Read/write registers is 120.

3. Software expansion function

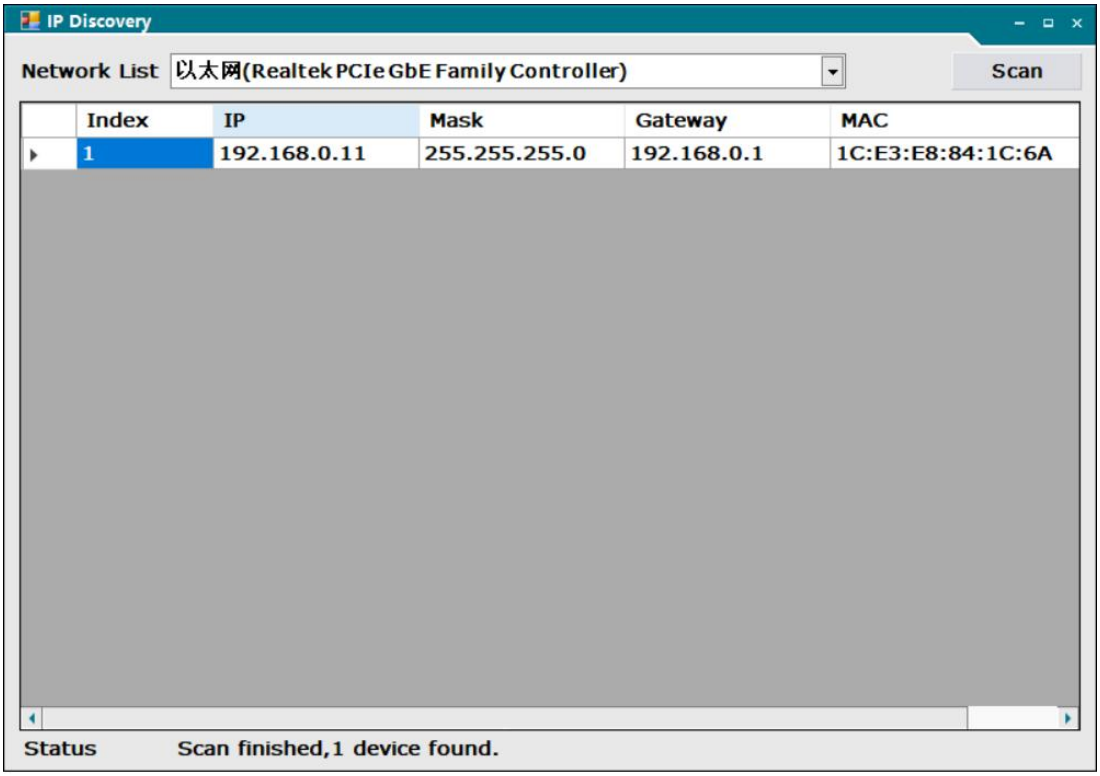
In addition to the basic test function, RFID Controlor Demo software Also includes extended debugging functions.

3.1Read/write header search function

Click the "Tools" toolbar, select the "RFID Search" tool, select the Corresponding Ethernet card in the pop-up "IP Discovery" dialog box, And click search to search the read/write head IP, as shown in the Following figure:

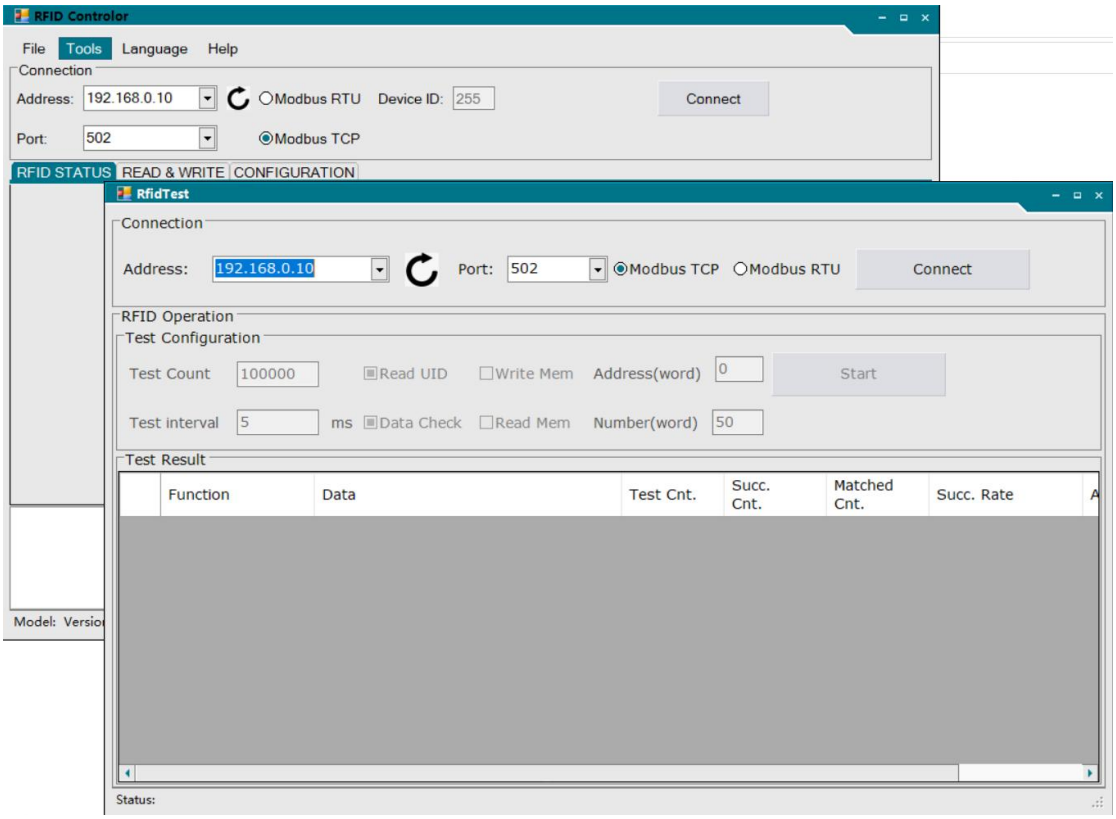


After the search is complete, the number of read and write heads And the corresponding IP address information are displayed as follows:


IP Discovery
Network List
以太网(Realtek PCIe GbE Family Controller)
Scan
Index
IP
Mask
Gateway
MAC
1
192.168.0.11
255.255.255.0
192.168.0.1
1C:E3:E8:84:1C:6A
Status
Scan finished,1 device found.

3.2Read/write head test function

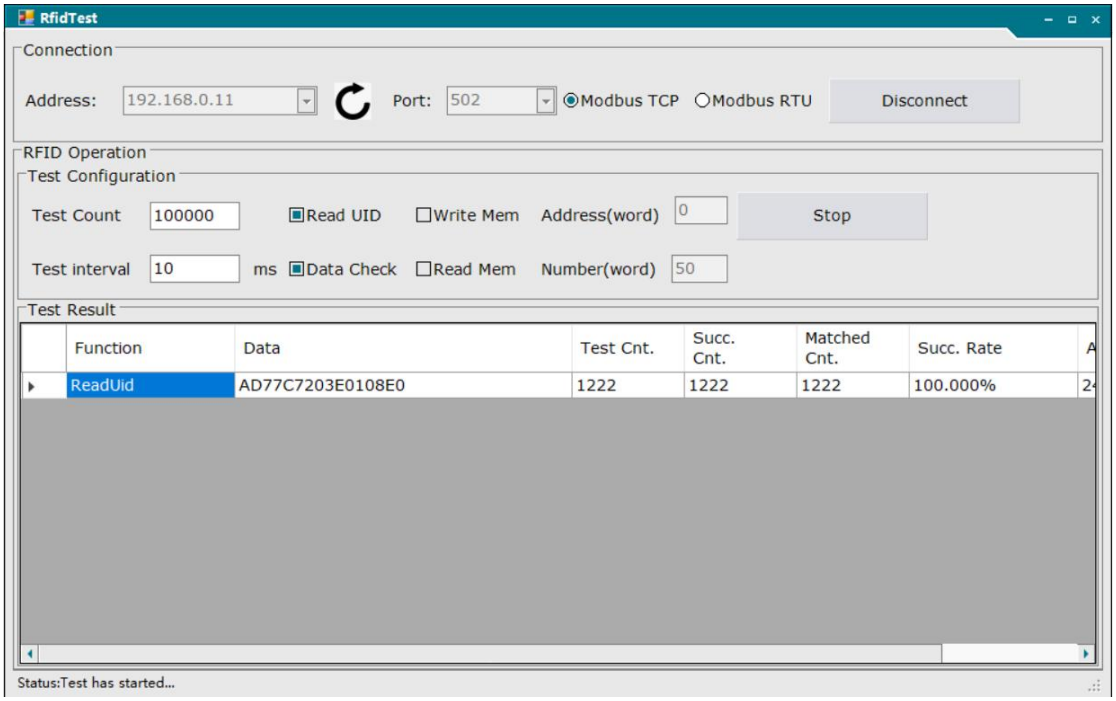
Click the "Tools" toolbar and select the "RFID Tester" tool. In the pop-up "RfidTest" dialog box, enter the IP address of the read and write head and The port number one by one, and click "Connect" to connect. After the Connection is successful, under the "RFID Operation" column, click "Connect". Set the corresponding total test times, test interval, Start Address of test read and write data, and word length parameters of test Read and write data. Click "Start" button to start the test, as shown in the Following figure:



3.2.1 Read UID functional tests

Under the "Test Configuration" bar, Check the "Read UID" and "Data Check" options (the user can select the Data Check option according to The actual situation), and click the "Start" button to start the automatic Test, as shown in the following

Picture:

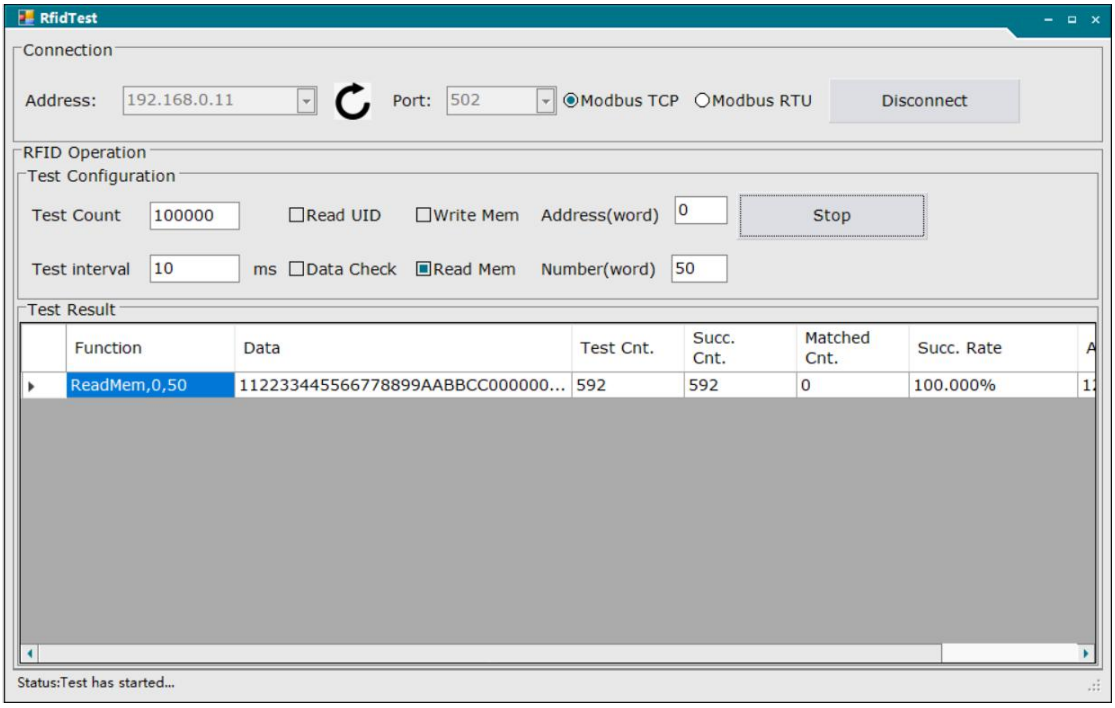


The following information is displayed in the Test Result column:

- Function——Function: Read UID;
- Data——UID data: XXXX;
- Test Cnt——Tested times: 1222;
- Succ Cnt——Number of successful tests: 1222;
- Matched Cnt——Data Check matching times: 1222 (this counter is valid only after "data check" is checked);
- Succ Rate——The test success rate is 100%;

3.2.2 Read the user area functional test

Under the "Test Configuration" bar, Check the "Read Mem" and "Data Check" options (the user can select the "Data Check" option According to the actual situation), and click the "Start" button to start the Automatic test, as shown in the following picture:

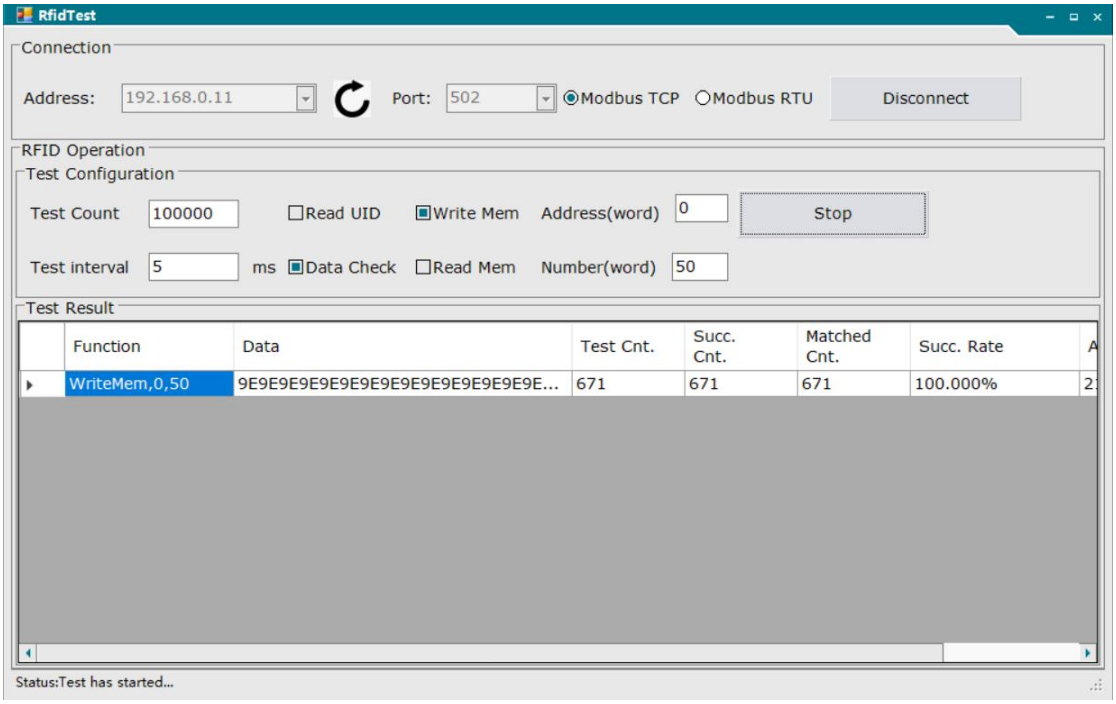


The following information is displayed in the Test Result column:

- Function——Function: Read the memory area, starting address 0, Word length 50;
- Data——Memory data: XXXX;
- Test Cnt——Tested times: 592;
- Succ Cnt——Number of successful tests: 592;
- Matched Cnt——Data verification and matching times: 0 (this Counter is invalid if "Data Check" is not checked in this test);
- Succ Rate——test success rate 100%;

3.2.3 Write the user area functional test

Under the "Test Configuration" bar, select the "Write Mem" and "Data Check" options (the user can select the "Data Check" option According to the actual situation), and click the "Start" button to start the Automatic test, as shown in the following picture:



The following information is displayed in the Test Result column:

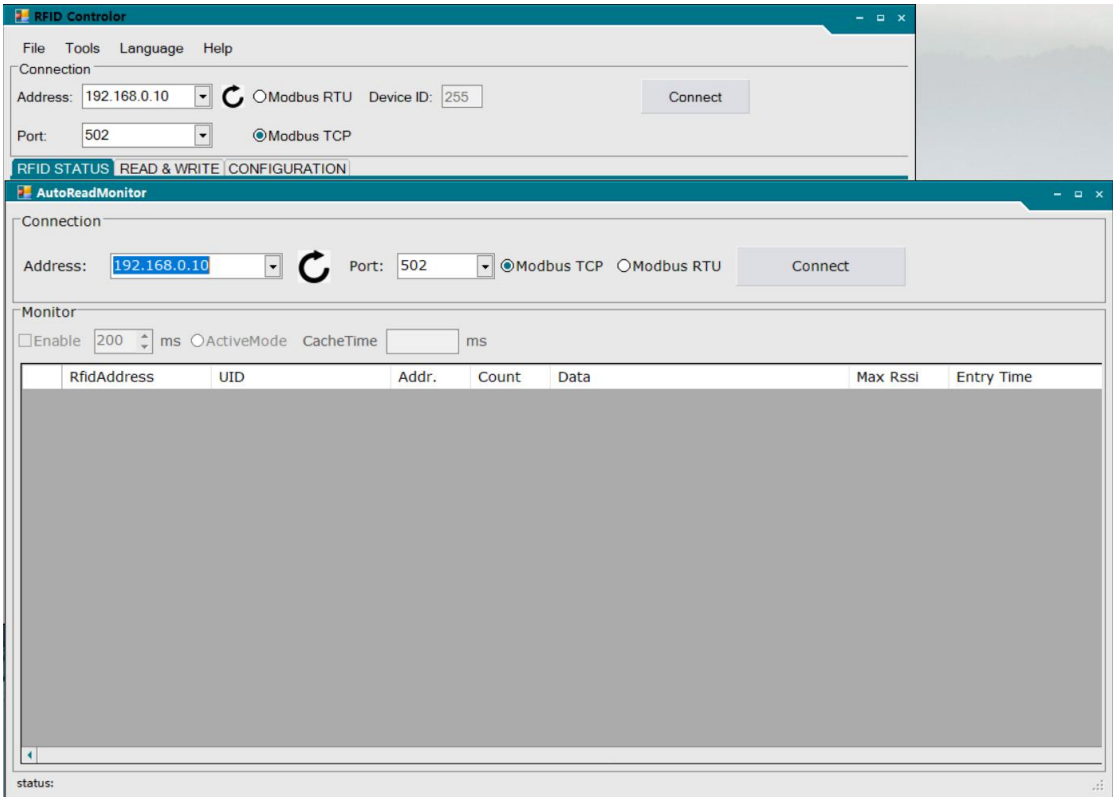
- Function——Function: Write to memory area, start address 0, word length 50;
- Data——Memory data: xxxxxxxx..... . (The data written each time Increases in turn);
- Test Cnt——Tested times: 671;
- Succ Cnt——Number of successful tests: 671;
- Matched Cnt—— Data Check matching times: 671 (this counter is valid only after "data check" is checked);
- Succ Rate——The test success rate is 100%;

Note: When users use 3.2 Read and Write test functions, the "Read UID", "Read Mem", and "Write Mem" functions can be selected at the same Time.

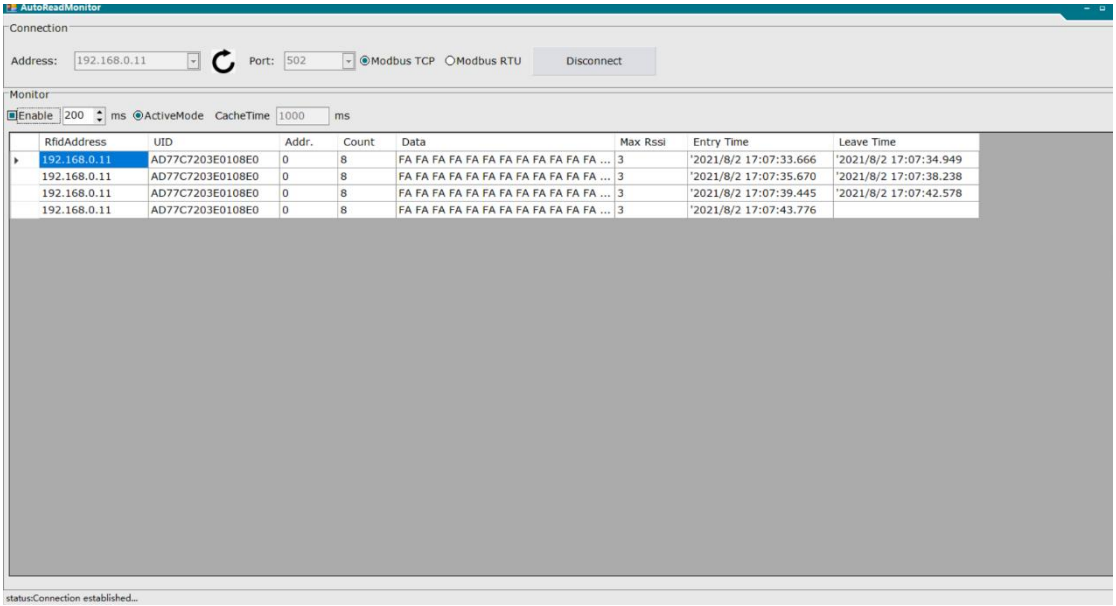
3.3Automatic card reading monitoring function

Click the Tools toolbar and choose AutoRead Monitor. In the AutoRead Monitor dialog box that is displayed, enter the IP address of

The read/write header and the port number, and click Connect. After the Connection is successful, in the Monitor column below, click Connect. Set The corresponding automatic card reading time and check the "Enable" Option to start the monitoring test, as shown in the following figure:



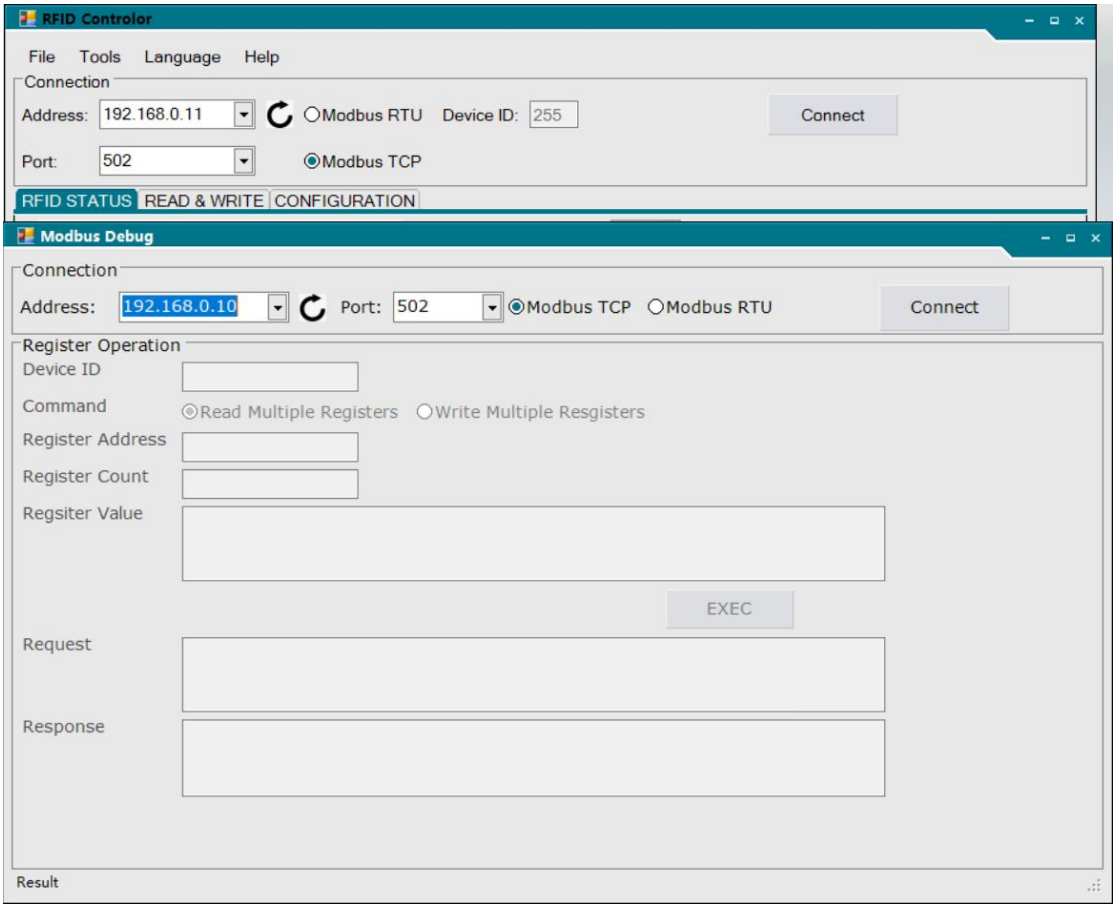
Manually move the load body to the read-write head unreadable Area, and then move it back to the read-write head readable area. Repeat This repeatedly. The data monitoring area in the Monitor column is Displayed as follows:



- RFIDAddress——Read/write header IP address: 192.168.0.11;
- UID——UID data: XXXX;
- Addr——Auto-read start address: 0;
- Count——Number of auto-read card words: 8;
- Data——Auto read card data content: XXXX
- Max Rssi——Carrier signal strength: 3;
- Entry Time——Code body entry time: XXXX;
- Leave Time——Carrier exit time:XXXX;

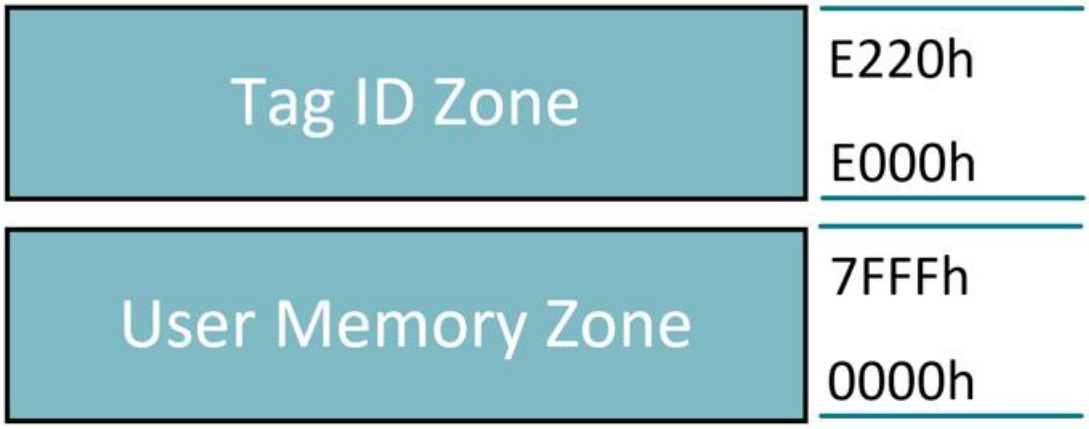
3.4 MODBUS test function

Click the Tools toolbar and choose ModbusDebug. In the ModbusDebug dialog box, enter the IP address of the read/write header And the port number, and click Connect. After the connection is Successful, set the automatic card read time in the Monitor bar. Check The "Enable" option to start the monitoring test, as shown in the Following figure:



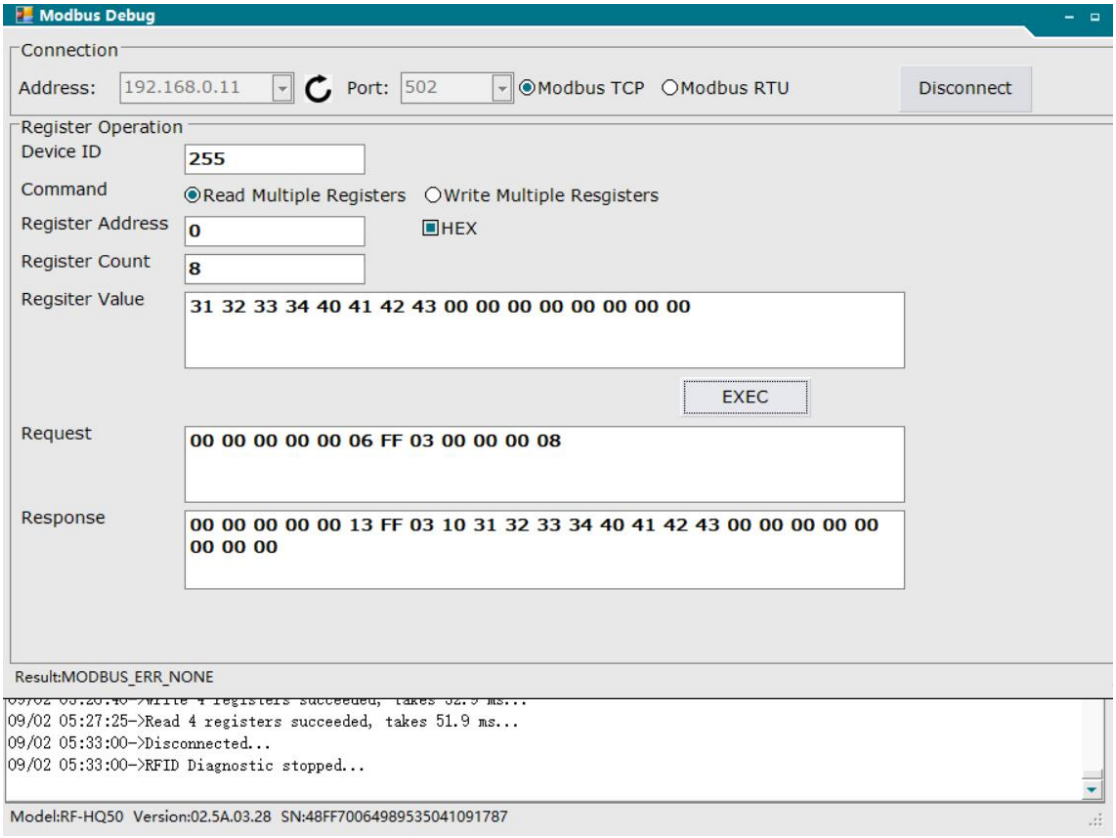
3.4.1 Modbus Read register function

The memory area address of the high-frequency label is defined as Follows:



- USER DATA area read register function

In the "Register Operation" column, set read/write head ID "Device ID", Register start Address "Register Address" and register number "Register Count" respectively, and click "EXEC" to execute the register Read test. As shown in the picture below:



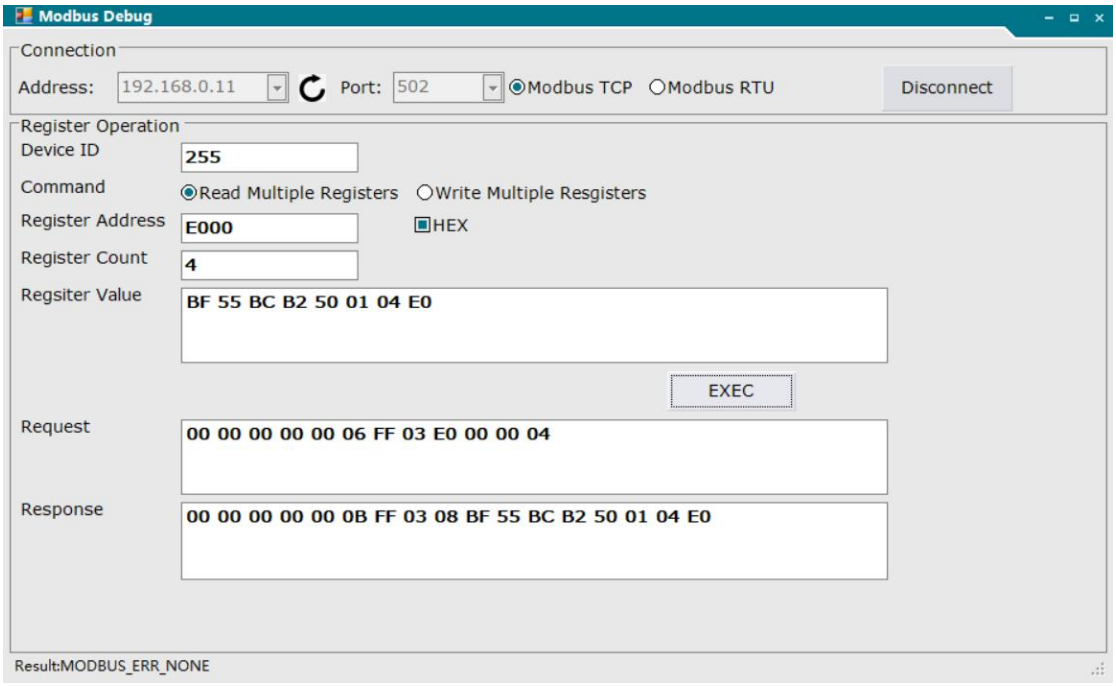
- Device ID——Read/write head ID: 255. (Under Modbus TCP, this ID is Optional and the default value is 255. Under Modbus RTU, it is the Secondary station ID of the read/write head, and the default value is 1.)
- Register Address——Register start address: 0;
- Register Count——Number of registers: 8;
- Register Value——Read the register value: XXXX;
- Request——Request data frame:XXXX;
- Response——Response data frame:XXXX;

➢ UIDarea read register function

The tag ID field is a mapping of the tag UID. This field is read-only. The specific mapping relationship is as follows:

Start address	End address	Register number	Operation type	Description
E000 H	E003 H	4	R ①	ISO 15693 protocol tag ID, fixed length of 8 bytes
E004 H	E004 H	1	R	ISO 15693 protocol data carrier USER size, number of bytes
E 100 H	E 100 H	1	R	ISO 14443A Protocol data carrier SAK
E 101 H	E101H _	1	R	ISO 14443A protocol data carrier UID length②
E 102 H	E 106 H	5	R	ISO 14443A protocol data carrier UID

In the "Register Operation" column, set read/write head ID "Device ID", Register start Address "Register Address" and register number "Register Count" respectively, and click "EXEC" to execute the register Read test. As shown in the picture below:



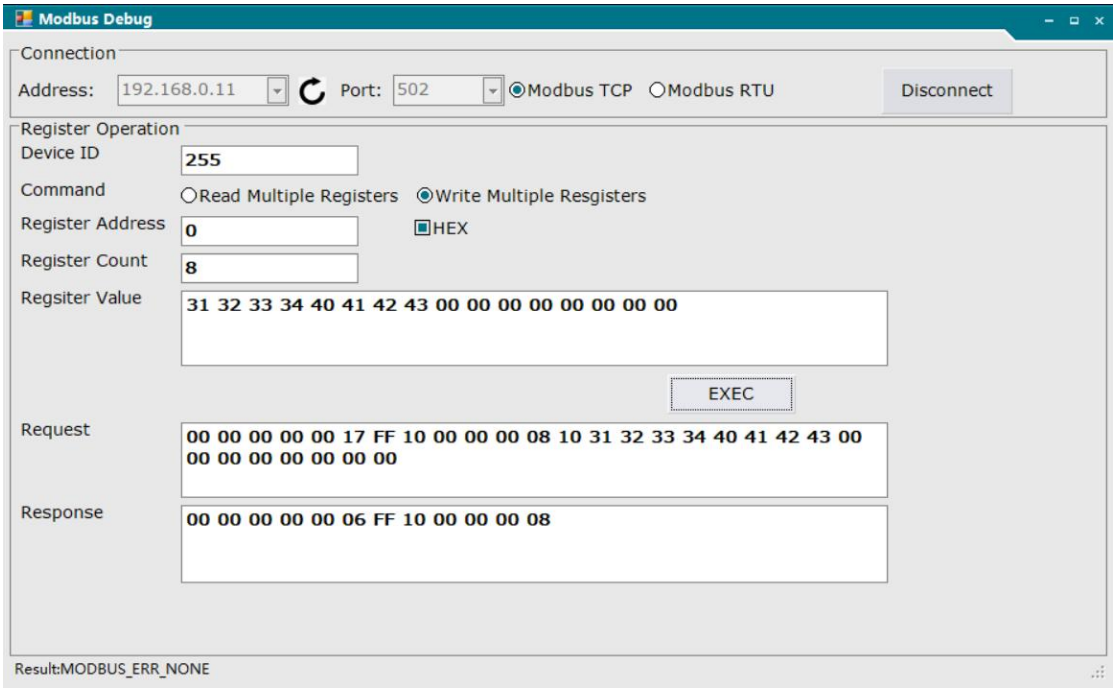
- Device ID——Read/write head ID: 255. (Under Modbus TCP, this ID is Optional and the default value is 255. Under Modbus RTU, it is the Secondary station ID of the read/write head, and the default value is 1.)
- Register Address——Register starting address: E000 (hexadecimal);
- Register Count——Number of registers :4;

- Register Value——Read the register value: XXXX;
- Request——Request data frame: XXXX;
- Response——Response data frame：XXXX;

3.4.2 ModbusWrite register function

➢ USER DATA write test

In Register Operation, set read/write header ID Device ID, start Register Address Register Address, and Register Count. Then fill in the "Register Value" field to write the register value, click the "EXEC" Execution button, you can carry out the register write test, as shown in The picture below:



- Device ID——Read/write head ID: 0 (this ID is not required under Modbus TCP. Under Modbus RTU, it is the secondary station ID of the Read/write head, and the default value is 1).
- Register Address——Register origin address：0;
- Register Count——Number of registers：8;
- Register Value——Write register value：XXXX;

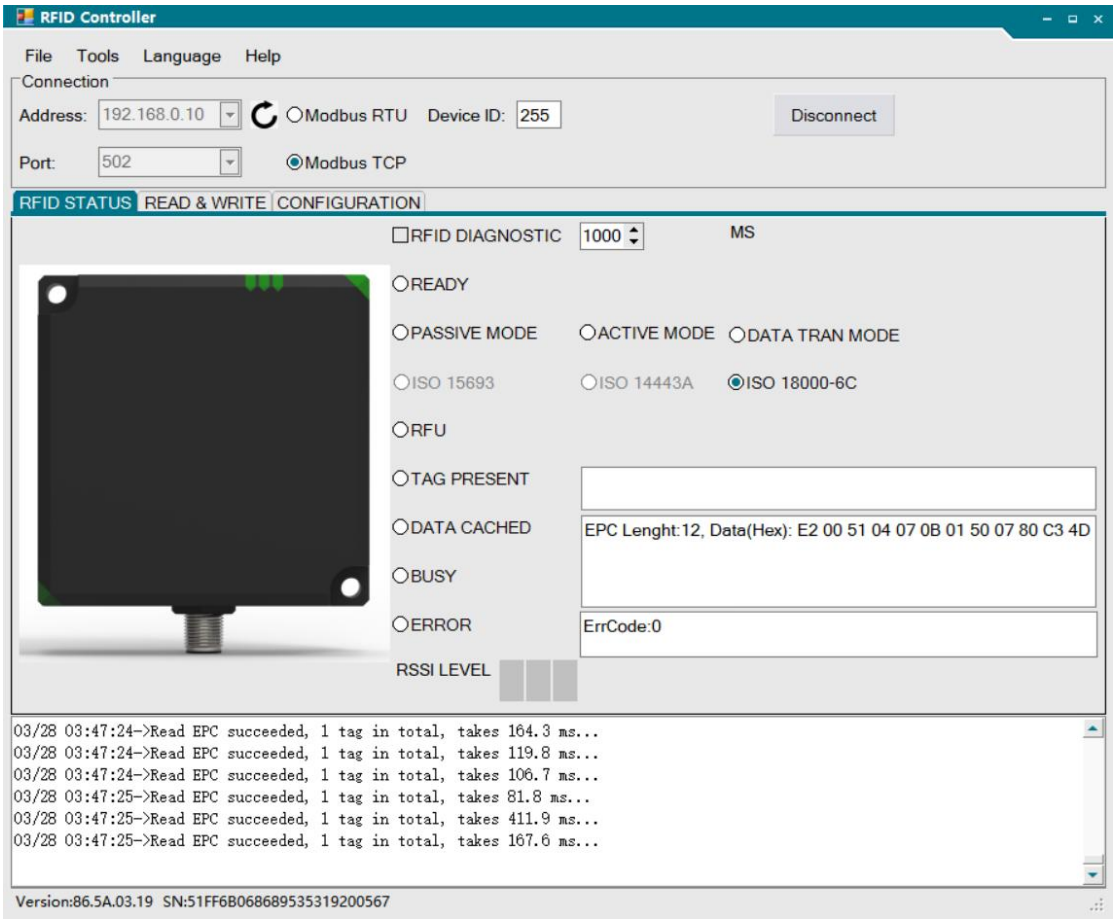
- Request——Request data frame：XXXX；
- Response——Response data frame：XXXX；

3.5Read/write header upgrade function

This feature is a developer option and is not available to customers.

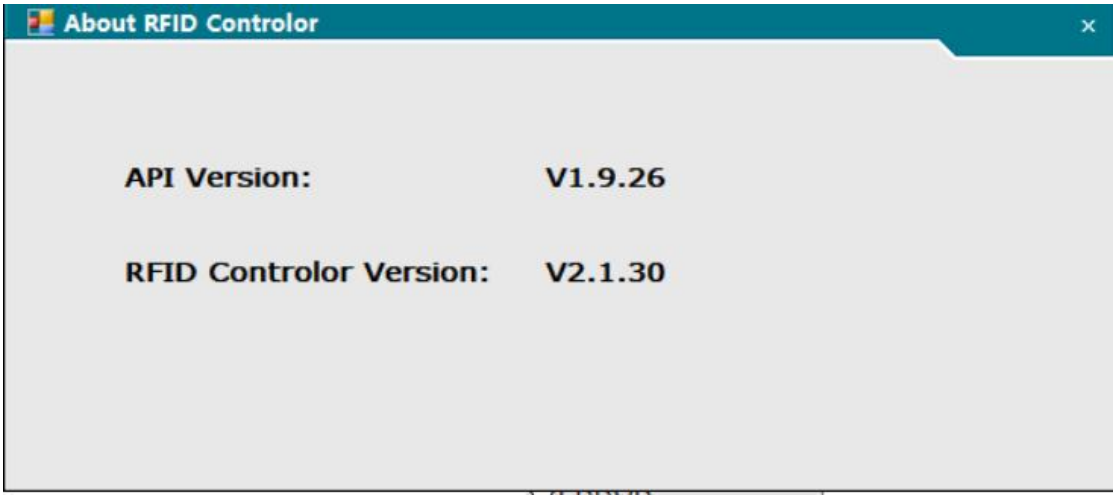
3.6Language switching function

Click the "Language" bar and select "Chinese" under its option bar to Switch the RFID Controlor Demo software into Chinese mode, as shown In the following picture:



3.7 help

Click the "Help" bar and select "About" under its option bar to view The API and software version details of the RFID Controlor Demo Software, as shown in the following picture:


About RFID Controlor
API Version:
V1.9.26
RFID Controlor Version:
V2.1.30