Hopeland

Focus on RFID core technology

Hopeland RFID reader PC

Demo user manual

C#

Editor: Tang yue

Shenzhen Hopeland Technologies co. Ltd.

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1. Summary ..... - 3 -
1.1 Summary of content ..... - 3 -
1.2 Open demo software ..... - 3 -
1.3 Software language ..... - 4 -
1.3.1 Simplified Chinese ..... - 4 -
1.3.2 English ..... - 4 -
2. Connect reader ..... - 5 -
2.1 Serial communication connection ..... - 5 -
2.2 Network communication connection ..... - 6 -
2.3 RS485 communication connection ..... - 8 -
2.4 USB communication connection ..... - 9 -
2.5 TCP Server connection mode ..... - 10 -
2.6 Search Device ..... - 11 -
2.7 Disconnect reader ..... - 19 -
3. Quick-start guide ..... - 20 -
3.1 Read and write function ..... - 20 -
3.2 Read tag ..... - 23 -
3.2.1 Read EPC ..... - 23 -
3.2.2 Read TID ..... - 23 -
3.2.3 Stop reading ..... - 24 -
3.3 Write tag ..... - 25 -
3.3.1 Write EPC ..... - 25 -
3.3.2 Write Userdata ..... - 26 -
3.4 Information display ..... - 27 -
3.5 Restart reader ..... - 28 -
3.6 Reader information ..... - 28 -
3.7 Baseband information ..... - 29 -
4. Configuration ..... - 29 -
4.1 Common configuration ..... - 29 -
4.1.1 Antenna power configuration ..... - 29 -
4.1.2 Antenna enable ..... - 30 -
4.1.3 Serial port configuration ..... - 31 -
4.1.4 Network configuration ..... - 31 -
4.1.5 485 configuration ..... - 32 -
4.1.6 GPI configuration ..... - 33 -
4.1.7 GPI status query ..... - 34 -
4.1.8 GPO configuration ..... - 35 -
4.2 Advanced configuration ..... - 35 -
4.2.1 TCP server/client mode ..... - 35 -
4.2.2 Frequency hopping configuration ..... - 36 -
4.2.3 Tag filter ..... - 38 -
4.2.4 Auto free ..... - 38 -
4.2.5 Wiegand configuration ..... - 39 -
4.2.7 Factory data reset ..... - 40 -

4.2.8 Get cache data.....-40-
4.2.9 Clear the cache data.....-40-
4.2.10 EPC baseband configuration.....-40-
4.2.11 DHCP configuration.....-41-
4.2.12 Network self-checking.....-42-
4.2.13 Breakpoint resume.....-43-
4.2.14 Antenna hub configuration.....-43-
5. Advanced operation.....-44-
5.1 Custom read.....-44-
5.2 Advanced write.....-45-
5.3 Debug switch.....-47-
5.4 Sound.....-48-
5.5 Data export.....-48-
5.6 Software upgrade.....-50-
5.6.1 Application software upgrade.....-50-
5.6.2 Baseband software upgrade.....-51-
5.7 Relay.....-53-
5.8 Hub.....-53-
5.9 WIFI.....-54-
5.9.1 Set the IP address of WiFi module.....-55-
5.9.2 Turn on WiFi module.....-56-
5.9.3 Connect WIFI hotspot.....-57-

1. Summary

1.1 Summary of content

This document is prepared for users to understand the normalized operation of the reader and the basic use of Demo software. The operating environment of the Demo software is .Net Framework2.0 of Windows platform.

1.2 Open demo software

open the demo software folder, double-click the ClouReaderDemo.exe application program,as shown in image 1-1

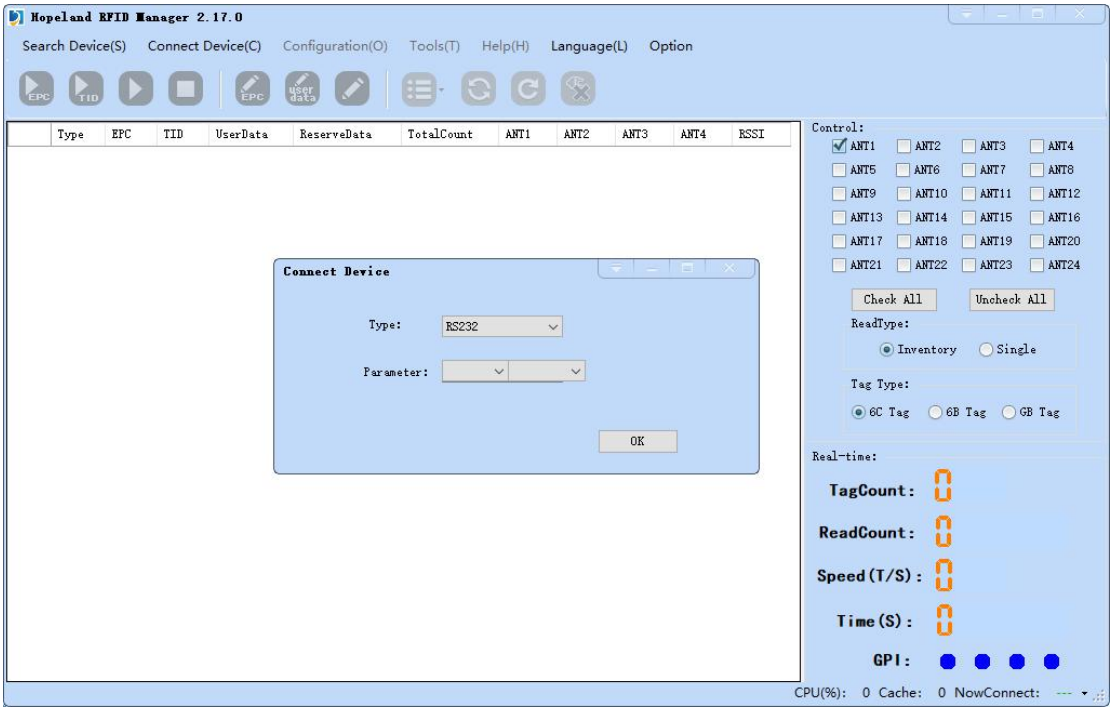

Image1-1

1.3 Software language

1.3.1 Simplified Chinese

Click tool bar Language(L)- Simplified Chinese,the Demo software language can be changed to Chinese, the software will automatically restart and the reader needs to be reconnected, as shown in image 1-2

Image 1-2

1.3.2 English

Click tool bar Language(L)- English,the Demo software language can be changed to English, the software will automatically restart and the reader needs to be reconnected,as shown in image 1-3

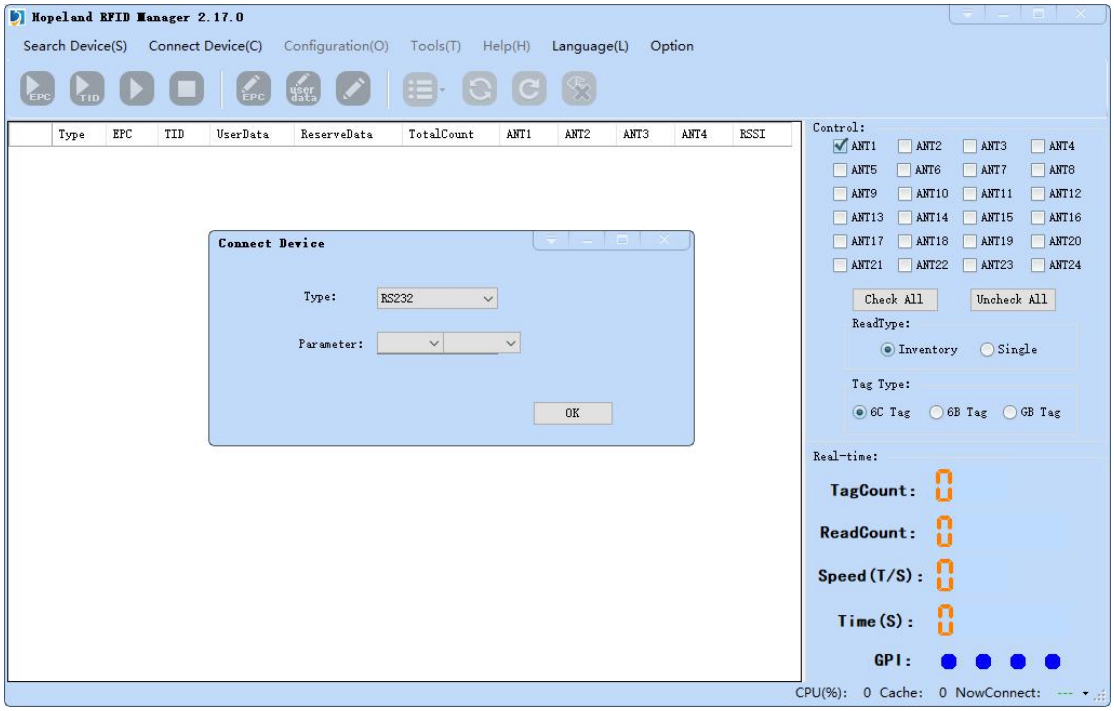

Image1-3

2. Connect reader

2.1 Serial communication connection

Click Connect Device(C)-RS232(S) to open the Serial communication connection interface, as shown in image2-1

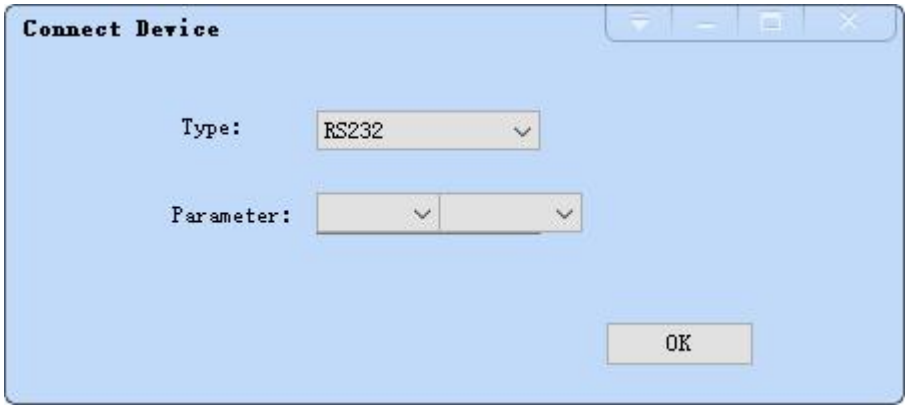

Image 2-1

Software will list all the current COM ports of the PC in the drop-down box, the default baud rate of the reader is 115200 bps, after choosing the correct serial port and baud rate, click "OK" to connect the reader.as shown in image2-2

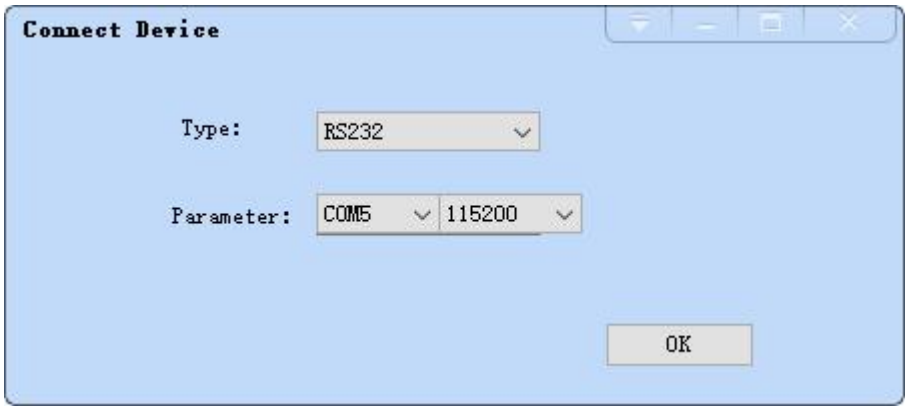

Image 2-2

If the connection is successful, all the icons in the toolbar are illuminated, as shown in image 2-3, means the serial communication connection is successful.

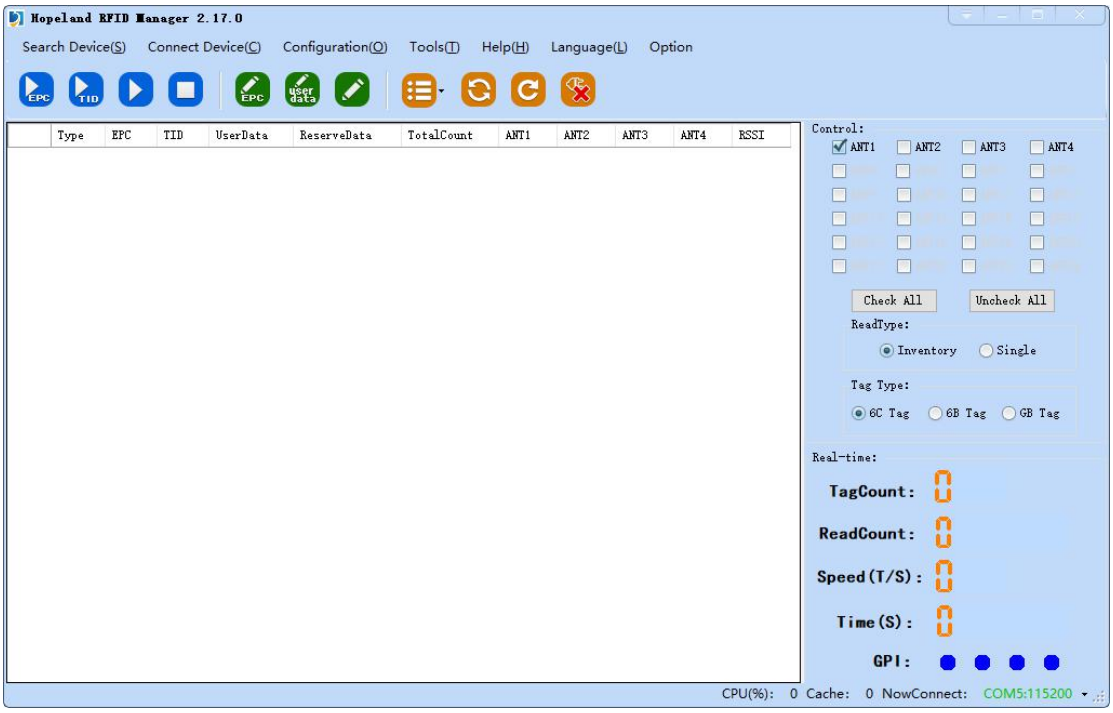

Image 2-3

If not, check the physical connection of the serial line.

2.2 Network communication connection

Click Connect Device(C)-TCP(T) to open the Network communication connection interface,as shown in image 2-4

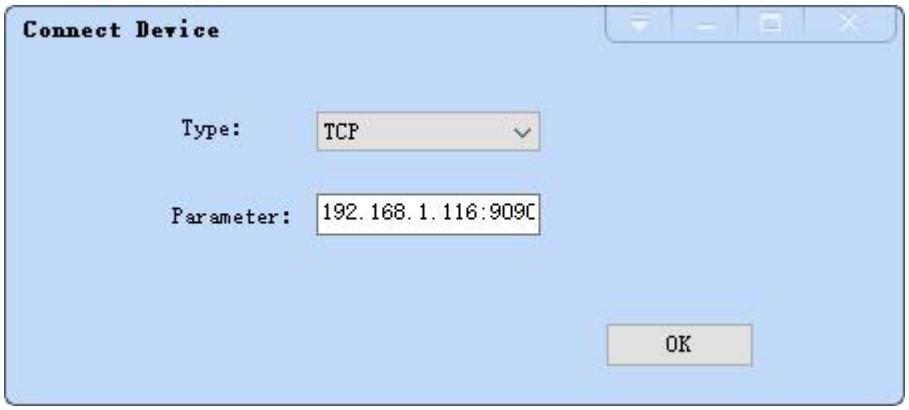

Image 2-4

Network connection used for long distance communication(within 80 m), connect to the Local Area Network through network cable and switch/router, or connected with the PC network directly. The default connection parameter is “IP address:port”,like “192.168.1.116:9090”, If the IP address and port of the reader has been changed, the connection parameter need to be filled in manually. Click OK to connect the reader,as shown in image 2-5

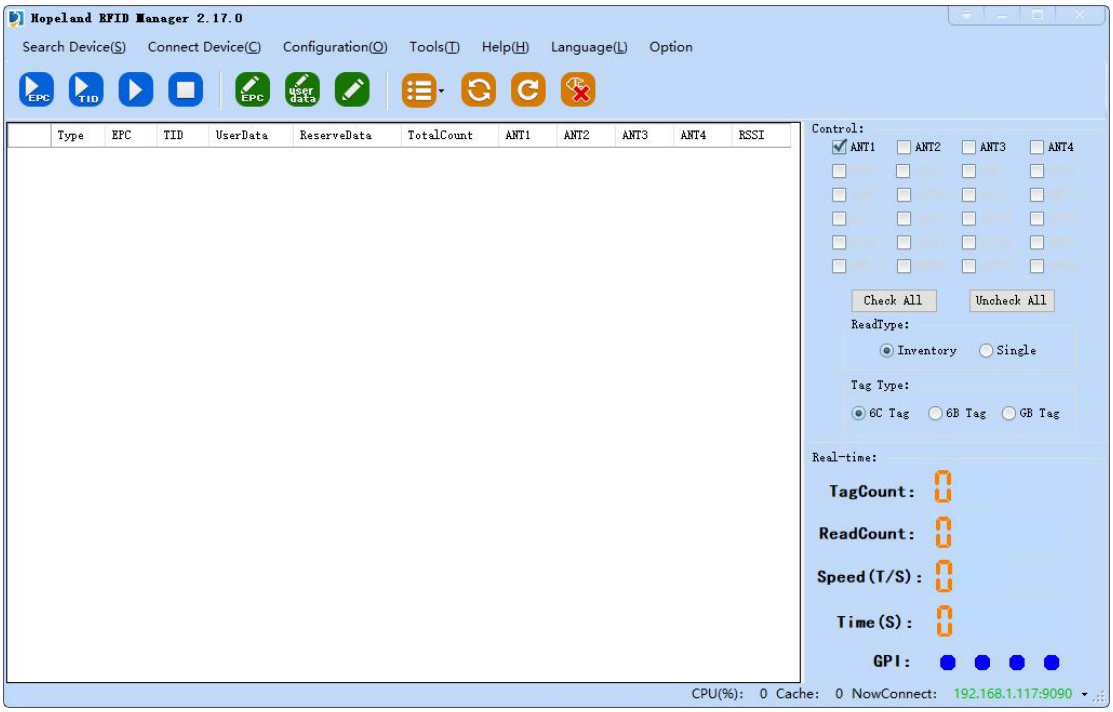

Image 2-5

If not success, please check the physical connection cable, or through the Ping command to test whether the reader IP in the host IP network segment, it is important to ensure the port number is correct, you can use Search Device function to connect reader if you don’t know the reader’s IP port.

2.3 RS485 communication connection

Click Connect Device(C)-RS485(R) to open the RS485 communication connection interface,as shown in image 2-4

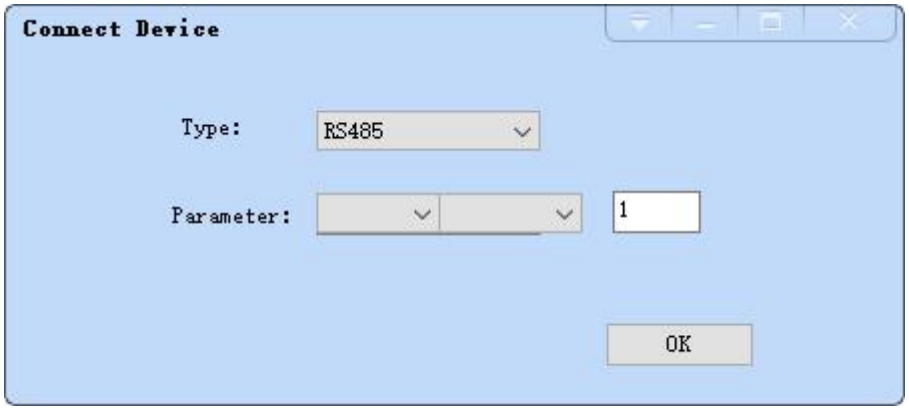

Image 2-6

Software will list all the current COM ports of the PC in the drop-down box, the default baud rate of the reader is 115200 bps, after choosing the correct serial port and baud rate,input 485 address, the default 485 address is 1, click "OK" to connect the reader.as shown in image2-7

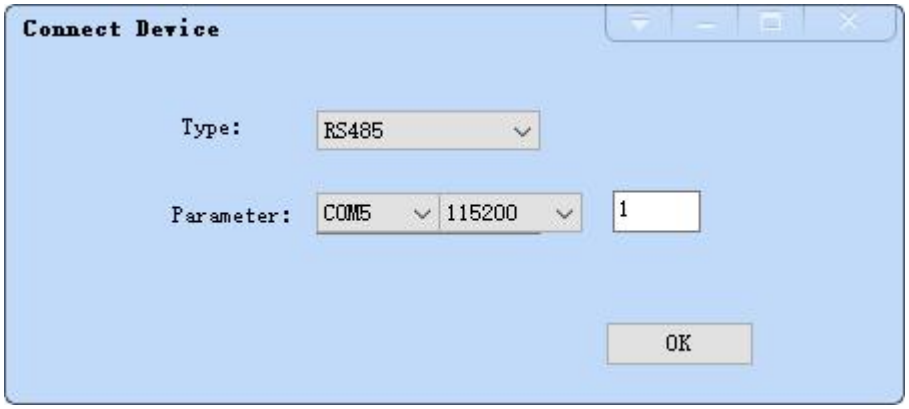

Image 2-7

After connecting successfully, as shown in image 2-8

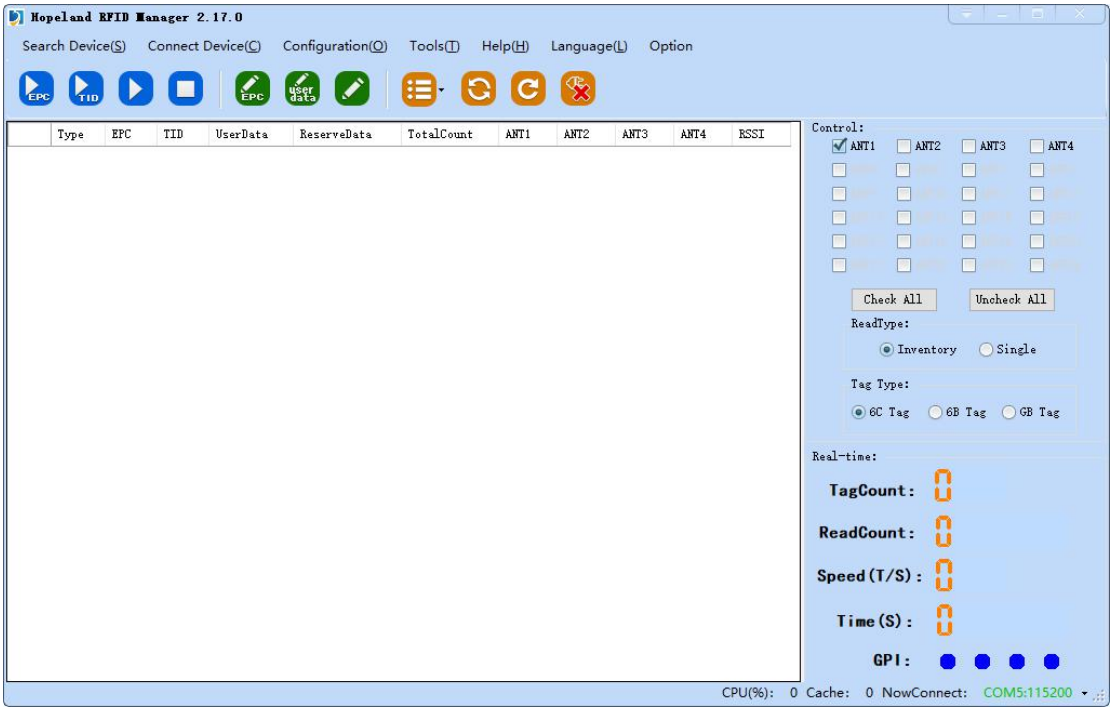

Image 2-8

If not, please check the physical connection of 485 cable.

2.4 USB communication connection

Click "Connect Device(C)" - "USB(U)" to open the USB connection interface, as shown in image 2-9.

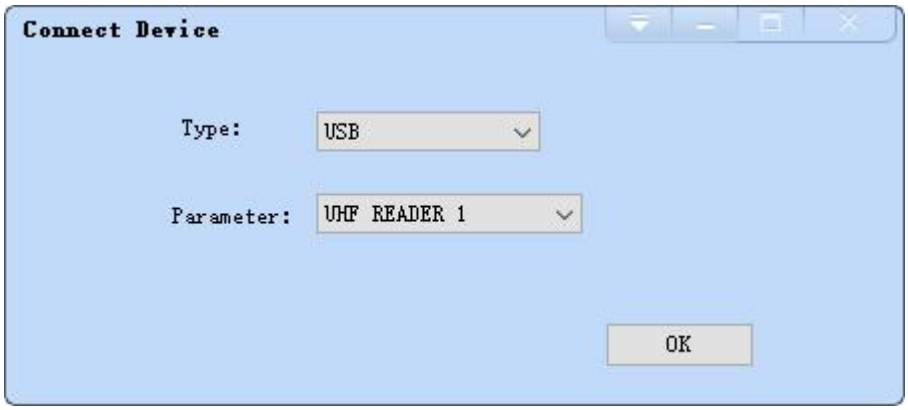

Image2-9

After successful connection, the interface is shown in image 2-10

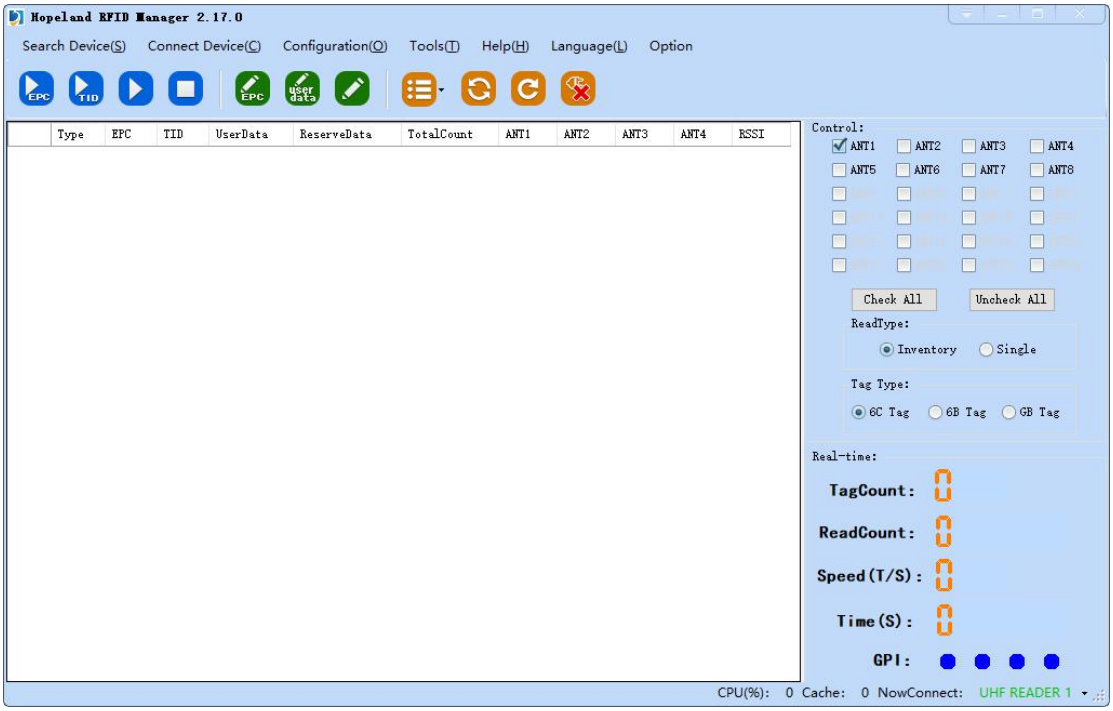

Image 2-10

If not, please check the USB physical connection.

2.5 TCP Server connection mode

Click "Connect Device(C)" - "TCP server F5" to open the "TCP server" setting interface, as shown in image 2-11.

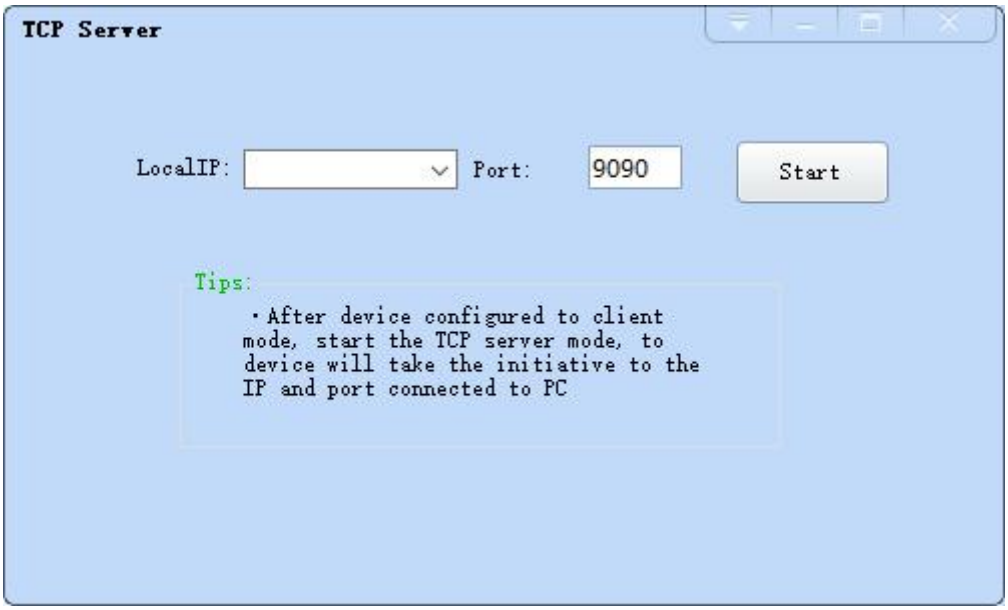

Image2-11

Select the local IP from the drop-down box of the local IP list and click "start" to listen

the incoming connection of the reader, as shown in image 2-12.

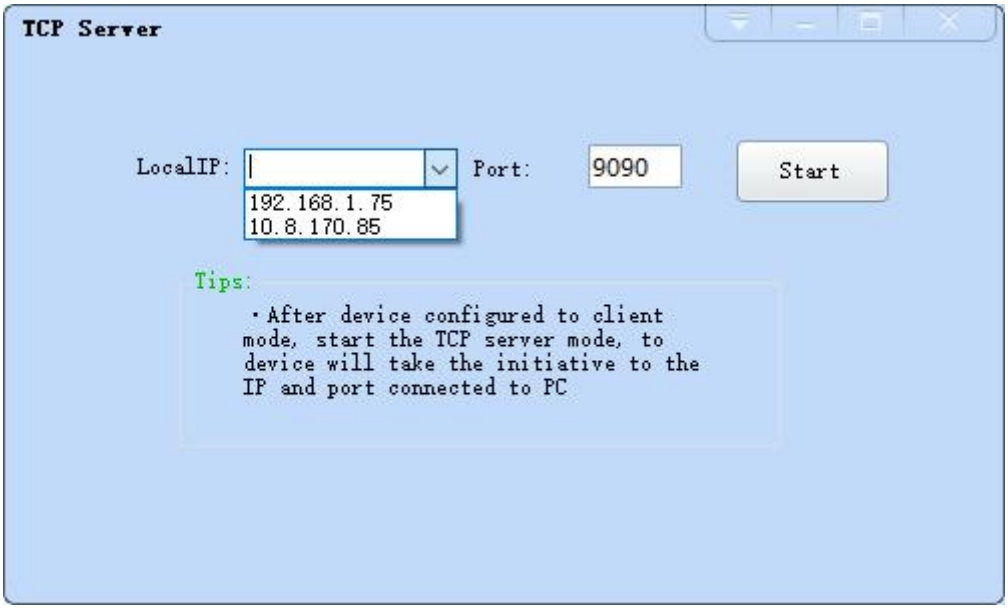

Image2-12

2.6 Search Device

After opening the software, click the "search device" on the toolbar to open the search device interface, as shown in image 2-13.

Image2-13

If the network connection between reader and PC is fine,, the reader is normally searched a few seconds later and displayed in the list below, as shown in image 2-14.

Image2-14

Double-click the row in the list to connect directly to the selected reader. After successful connection, the main interface of the software will be opened directly.

It is important to note that the search Setting is only used for network connections, the reader's default IP address is 192.168.1.116, and the default port is 9090.The host IP modification can be referred to image 2-15.

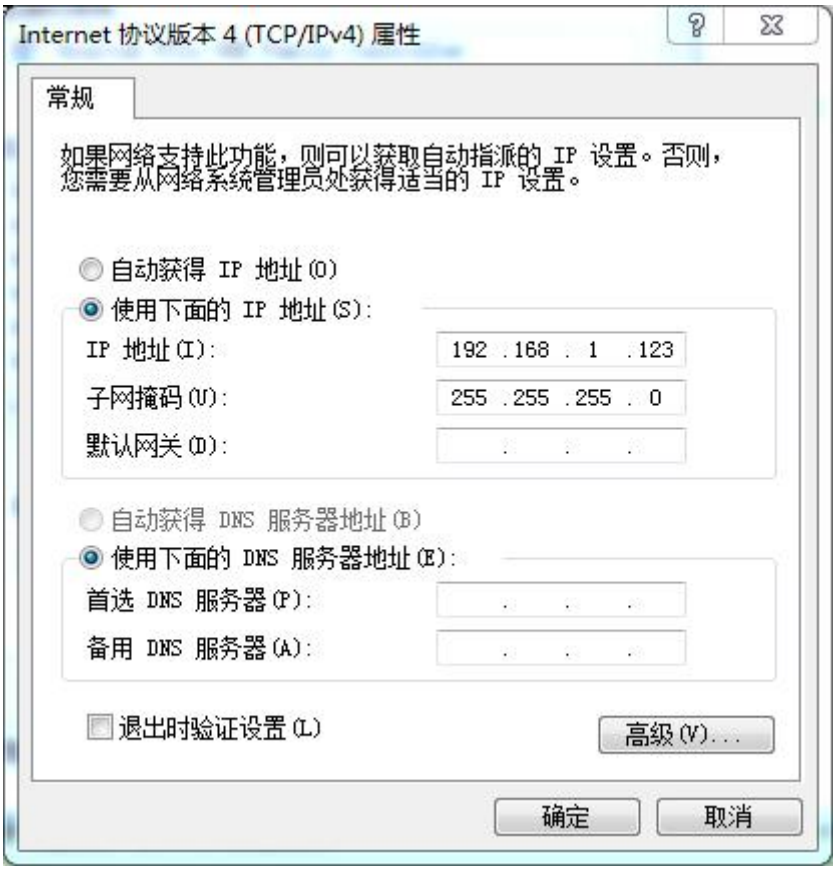

Image2-15

Check whether the reader IP and host IP are in the same network segment using the Ping command. "start" - "run" - enter "CMD" - enter, and the command prompt interface pops up, as shown in image 2-16.

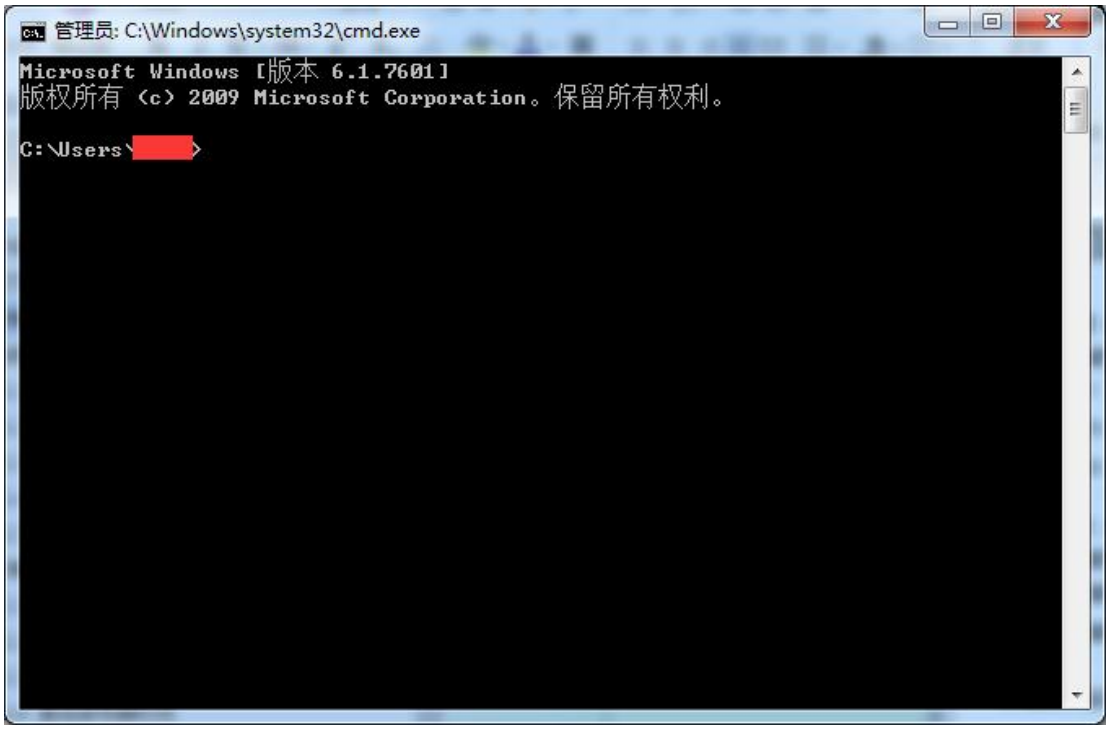

Image2-16

Enter the ping command, as shown in image 2-17.

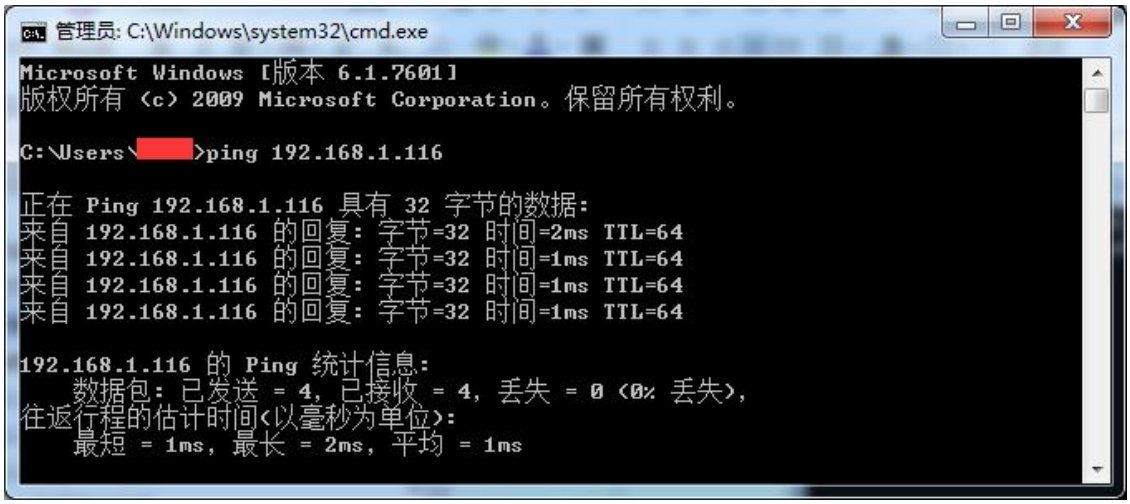

Image 2-17

Click the 

button to delete the devices that are searched in the list. This operation just clears the list. If the reader is in the same IP network segment as the PC, it will be searched again and displayed on the list.

Right-click the device you find in the list and the "setting reader parameter" option pops up, as shown in image 2-18.

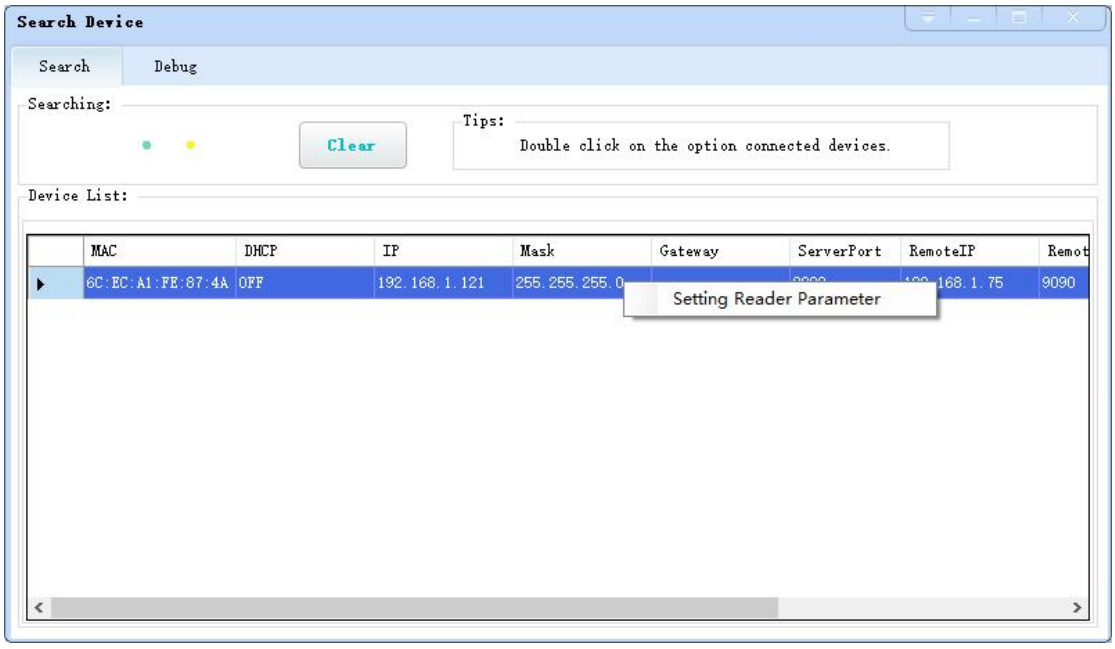

Image2-18

Click the "setting reader parameter" option to enter the password input interface, as shown in image 2-19.

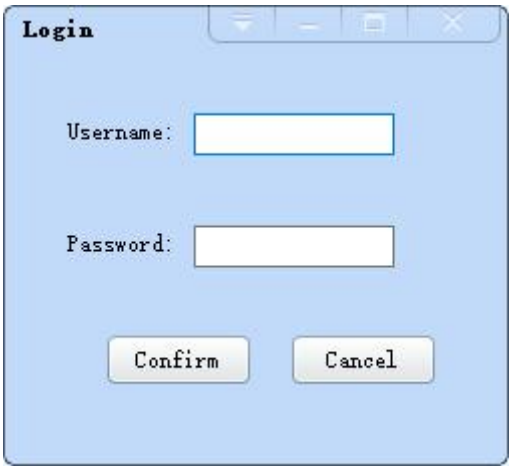

Image2-19

You need to enter the correct account password. If you need the account password, please consult our after-sales department.If the account password is wrong, an error will be prompted, as shown in image 2-20.

Image2-20

If the account and password is correct, it will enter the "UDP reader setting" interface, as shown in image 2-21.

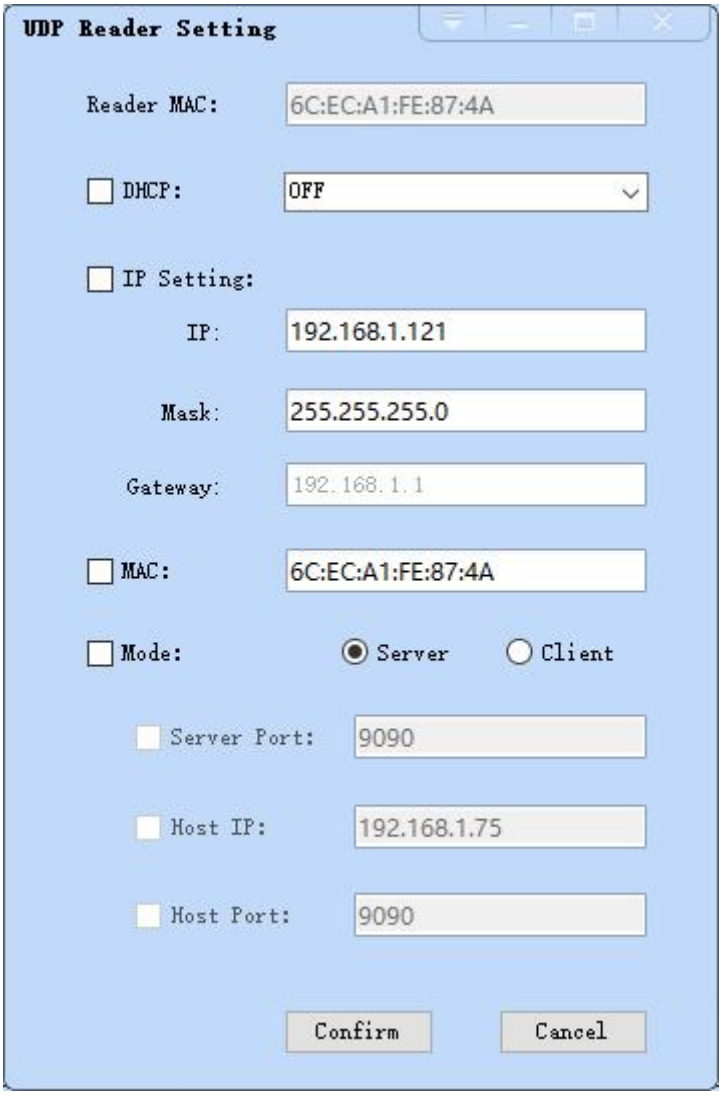

Image2-21

The parameters of the reader can be set in this interface. It is important to note that the Settings must be checked by the check box in front of the parameters before setting them. Otherwise, no Settings will be set by default.As shown in image 2-22.

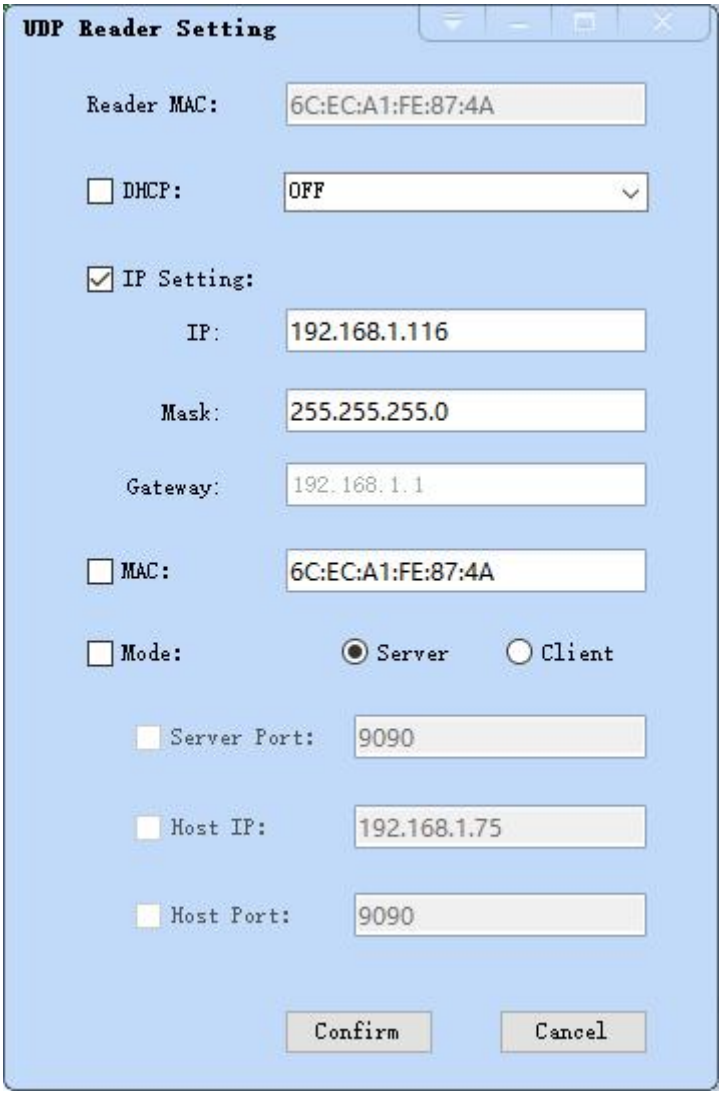

Image2-22

Click the "Confirm" button to submit and wait for the result prompt. If fail, set it a few more times, as shown in image 2-23.

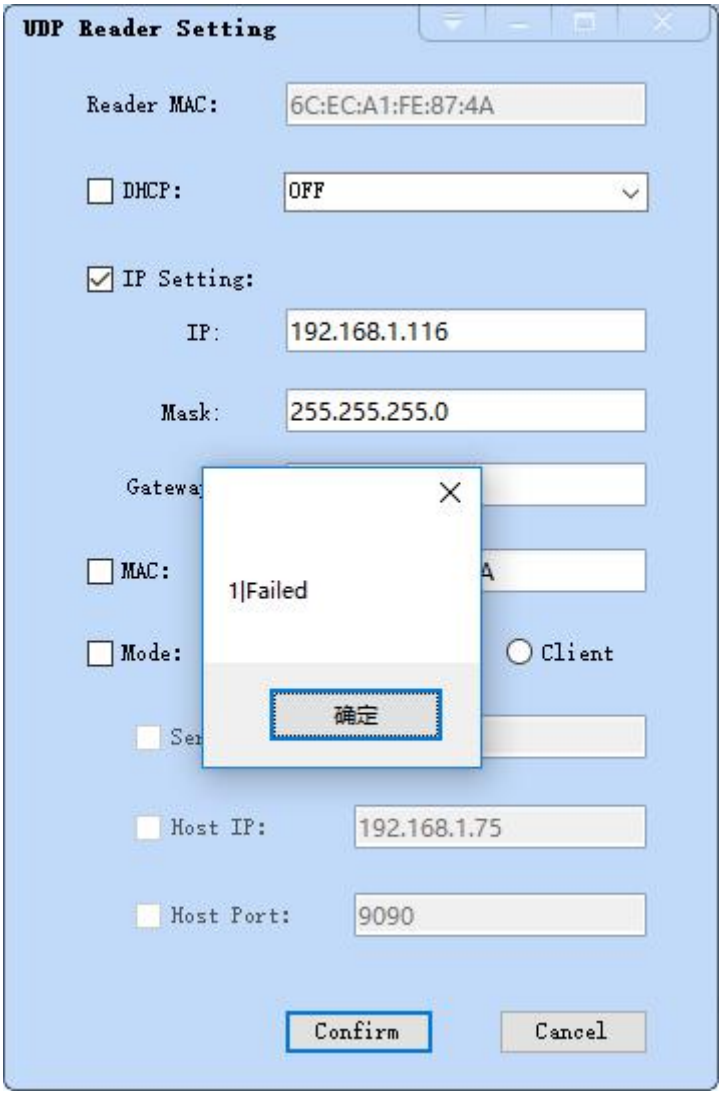

Image2-23

Set successful, return successful prompt, as shown in image 2-24.

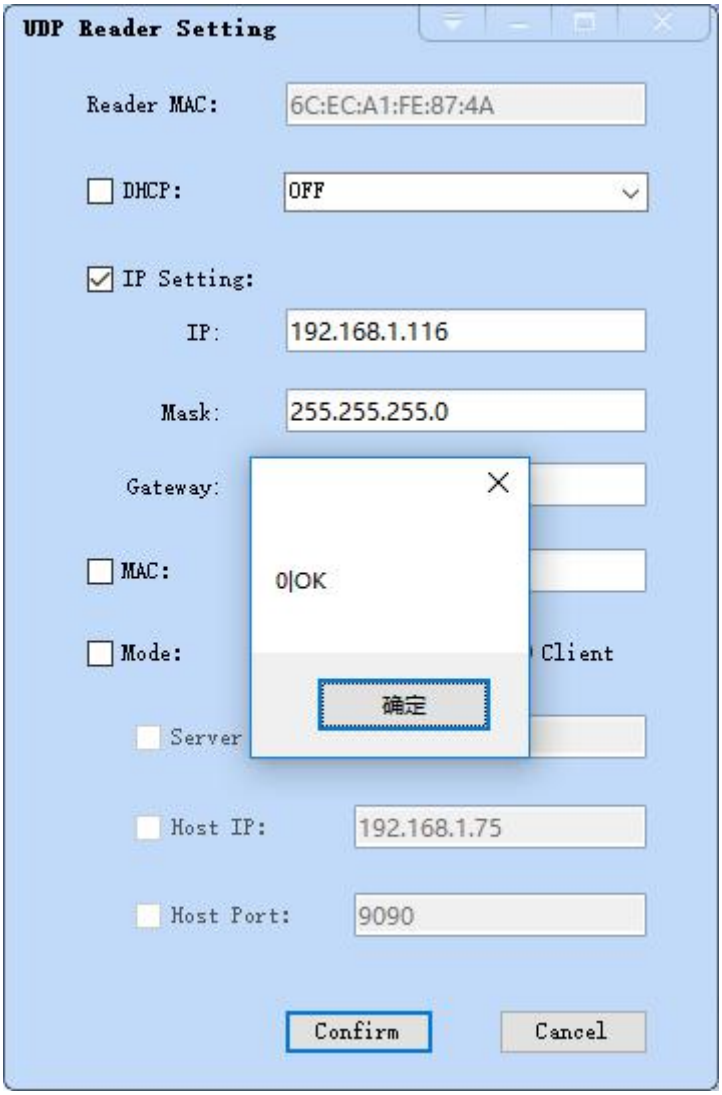

Image2-24

Wait 2 to 6 seconds and the result will be returned regardless of success or failure

2.7 Disconnect reader

Click the  button to disconnect the current connection, and all the buttons will not available after it is disconnected. You need to reconnect the reader, as shown in image 2-25.

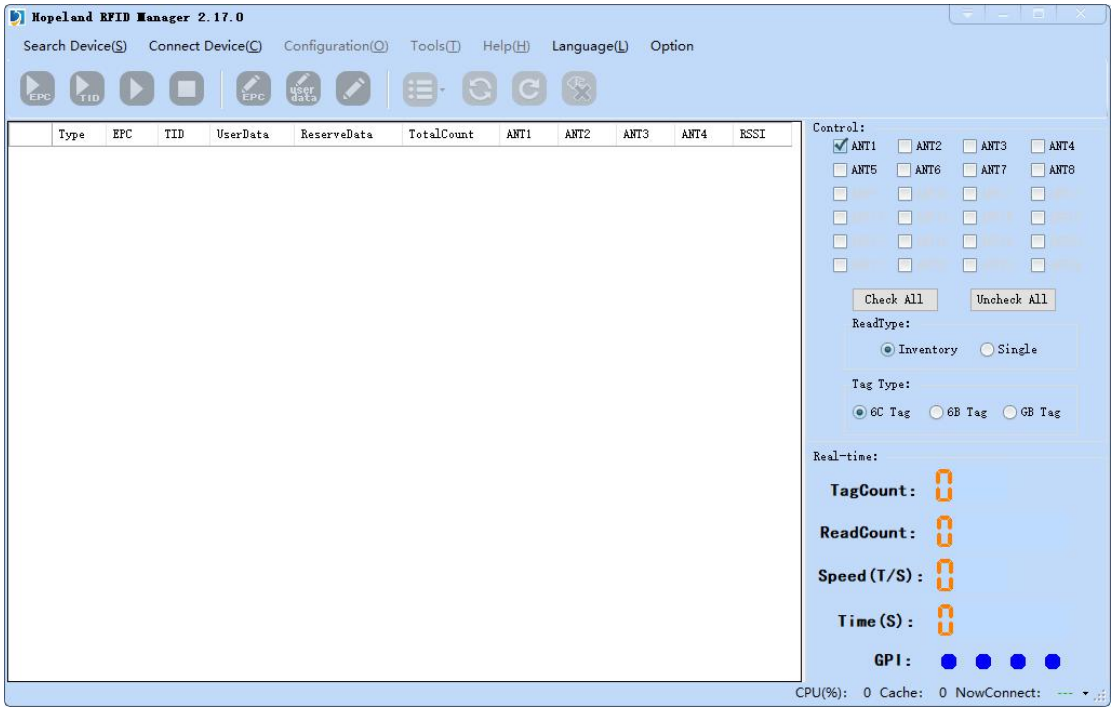

Image2-25

3.Quick-start guide

3.1 Read and write function

The read-write control function is at the top right of the software main interface, as shown in image 3-1.

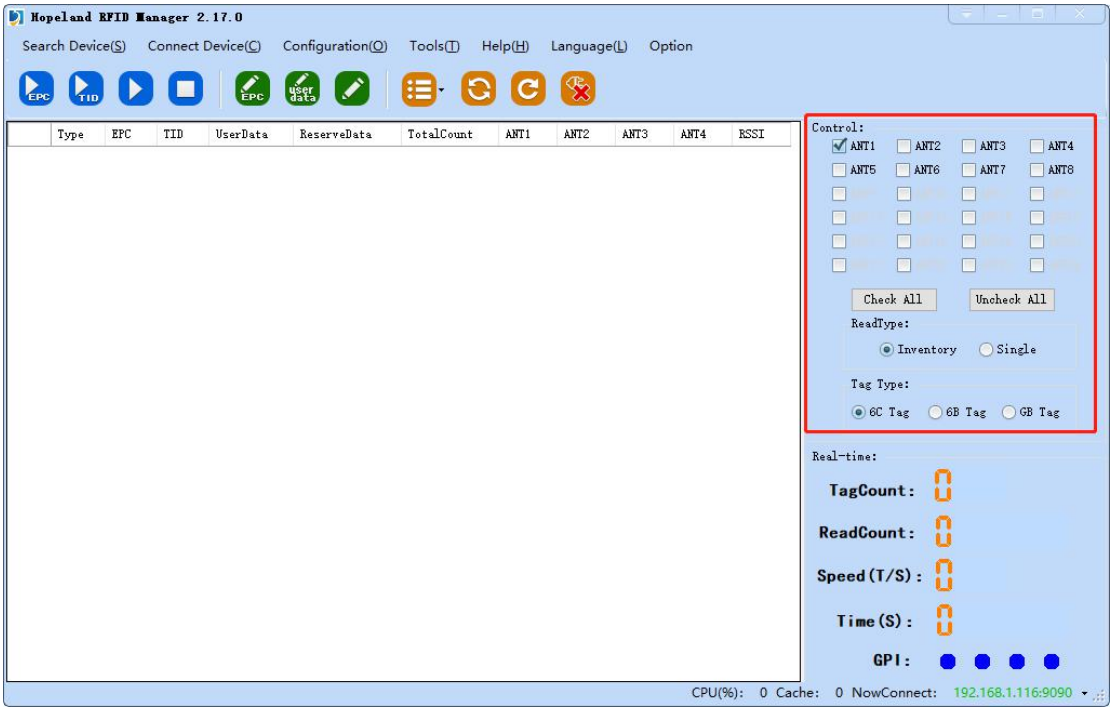

Image3-1

Checking the check box before the antenna number indicates that the reader will use the checked antenna for reading. You can select more than one antenna depending on the actual situation, if we use the antenna port which checked but not connected with antenna, it may cause the antenna port to be damaged.

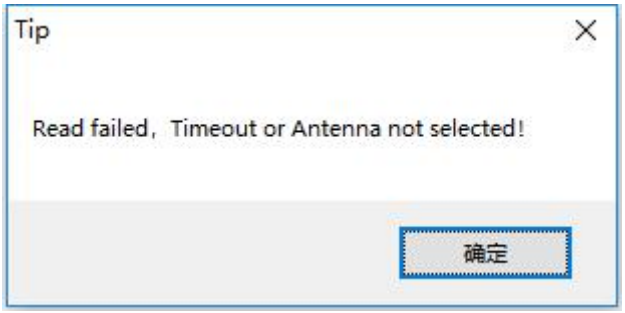

Image3-2

In the read mode operation, the Inventory indicates that the reader will always read the label until the STOP instruction is received, and the real-time information in the lower right will be updated according to the read label data before the stop reading is received. Listed data will be updated. as shown in image 3-3.

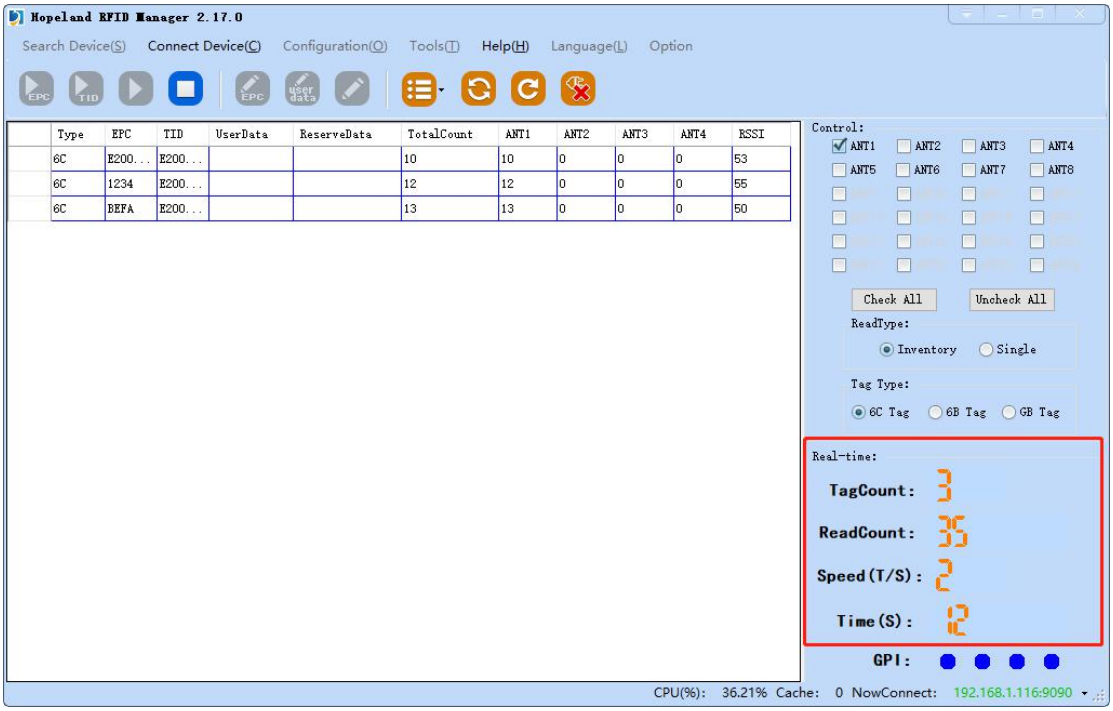

Image3-3

A single read that the reader read all the labels only read once, after reading once, the information is no longer updated, as shown in image 3-4.

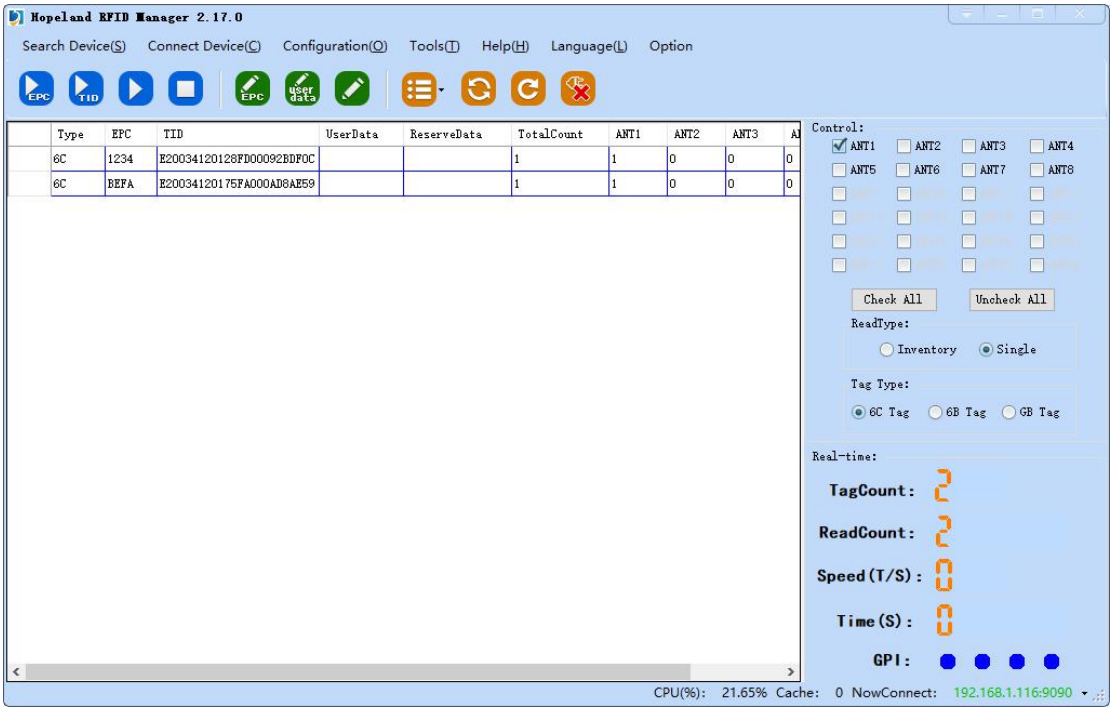

Image3-4

The tag type represents the tag type that is set to read by the reader. Currently, Demo software supports 6C tag, 6B tag and Chinese national label tag, can not be multi-select.

3.2 Read tag

Once the read/write control is set up, the read/write operation can be carried out.

3.2.1 Read EPC

Click the 

button to read EPC. Tag data will be displayed in the middle list. Real-time information will also be updated in the lower right corner, as shown in image 3-5.

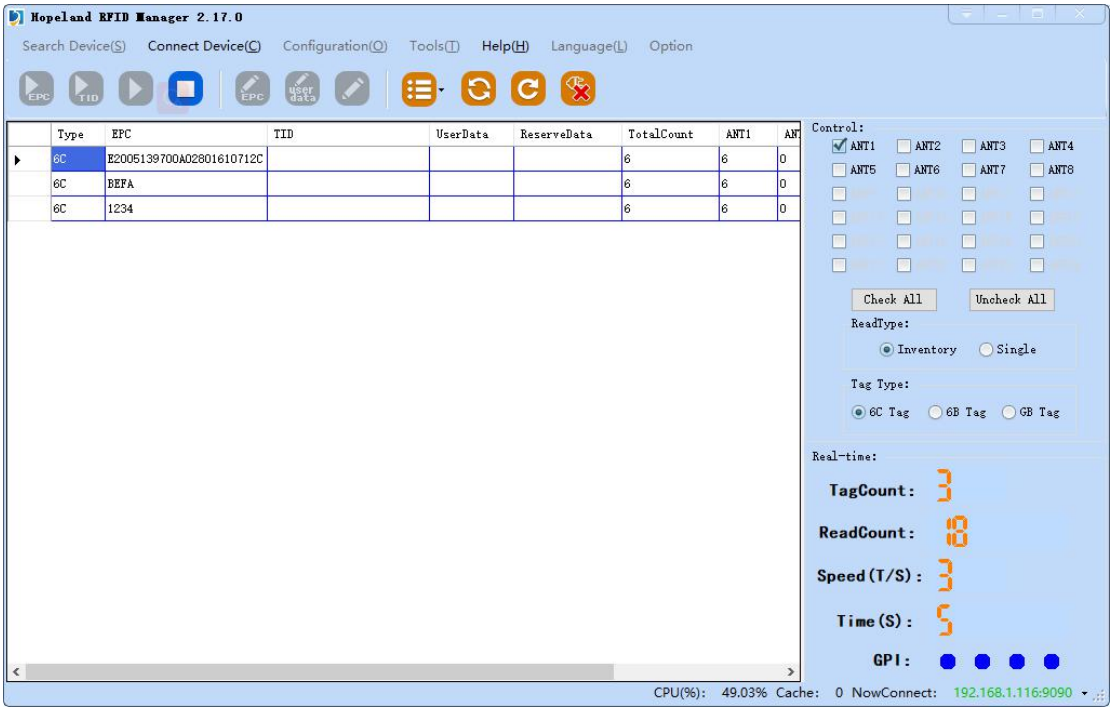

Image3-5

3.2.2 Read TID

Click the 

button to read the TID. The information of TID and EPC will be displayed in the list, as shown in image 3-6.

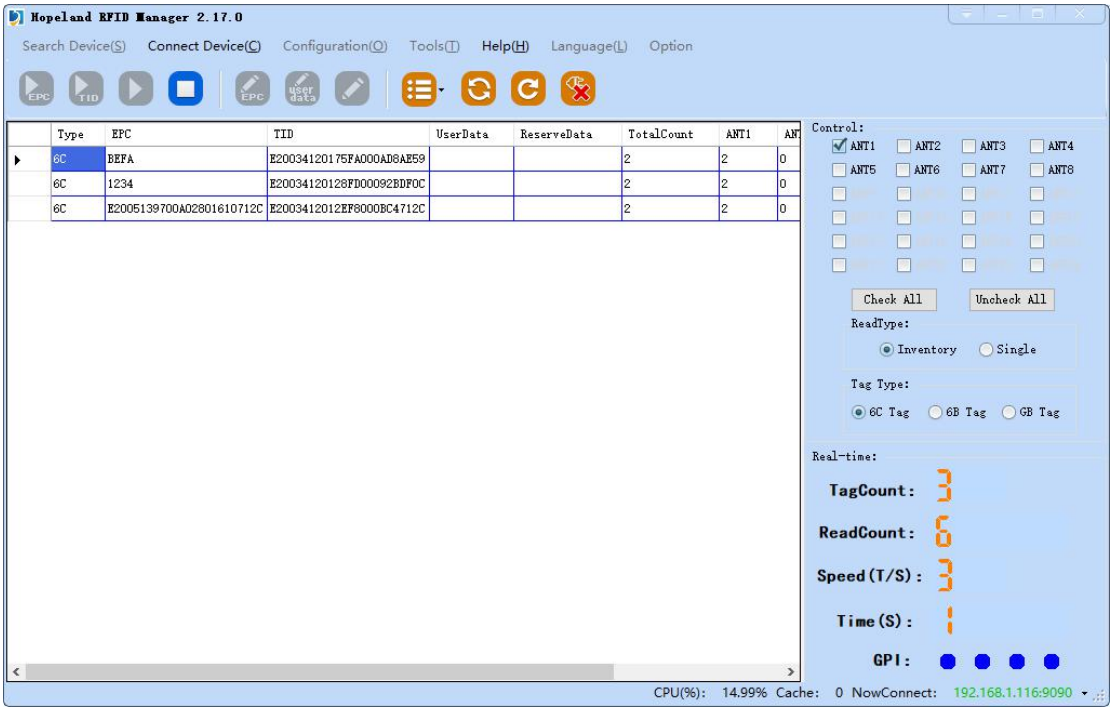

Image3-6

3.2.3 Stop reading

When reader is reading tags,you can click stop button to stop the reader reading,and the information list and real time information will all stop updating,as shown in image 3-7.

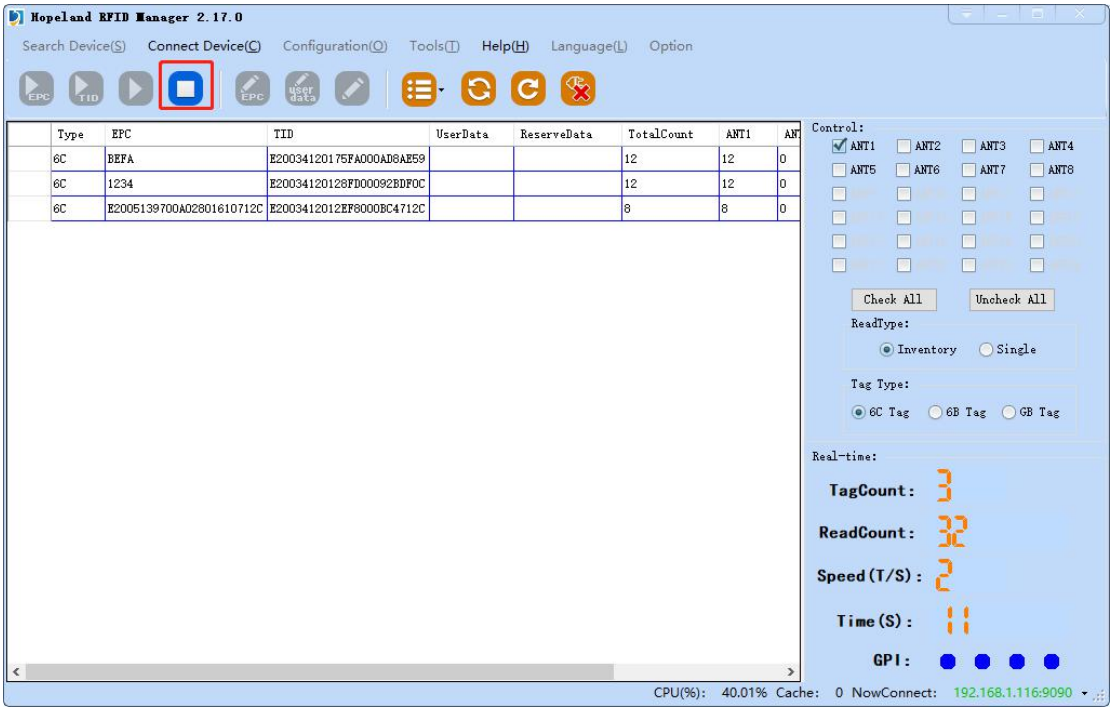

Image3-7

3.3 Write tag

At the same power, there are differences in the applicable distance between reading and writing the tags. It is recommended to write the tag as close as possible to the antenna. Before you write the tag, you should read the tag by reading TID.

3.3.1 Write EPC

After stop reading, select a tag that need to be modified in the list,click 

to open the Write EPC Interface, as shown in image 3-8.

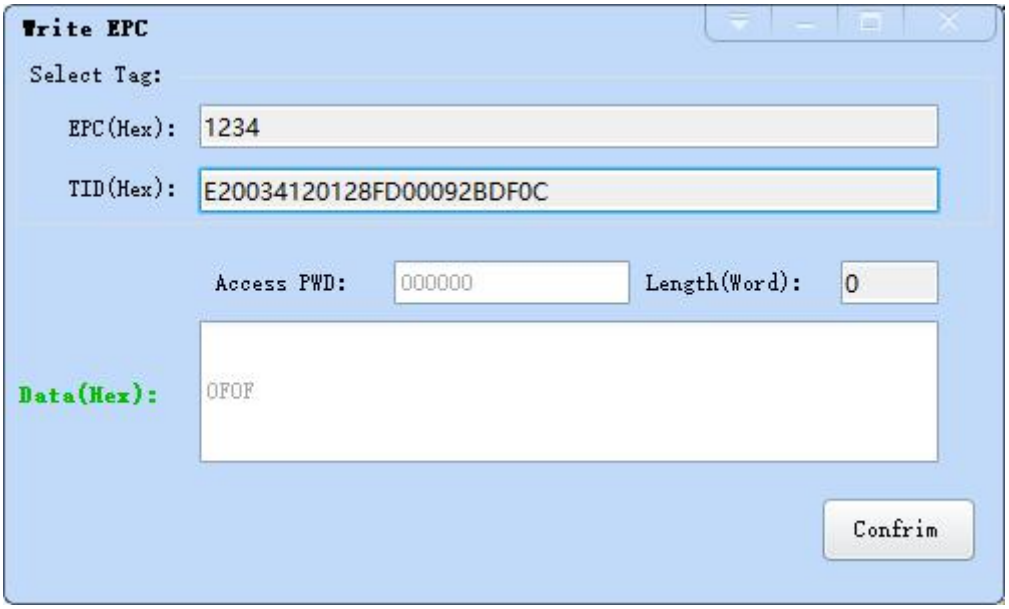

Image3-8

When you input the EPC data(Hex) to below Data(Hex) input box, pay attention to ensure the digits are hexadecimal numbers, if the tag is set with password, you also need to write access password in Access PWD input box , then click Confirm, it will return the result of writing EPC, as shown in image 3-9.

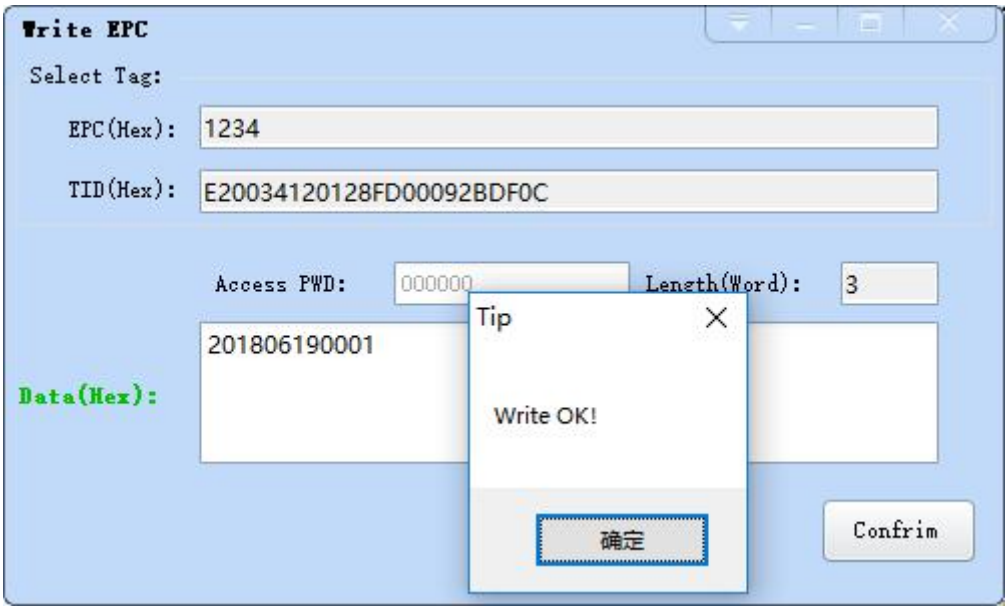

Image3-9

If the prompt shows failure, determine the next step based on the failure prompt.

3.3.2 Write Userdata

After stop reading, select a tag that need to be modified in the list, click 

to open the Write Userdata Interface,as shown in image 3-10.

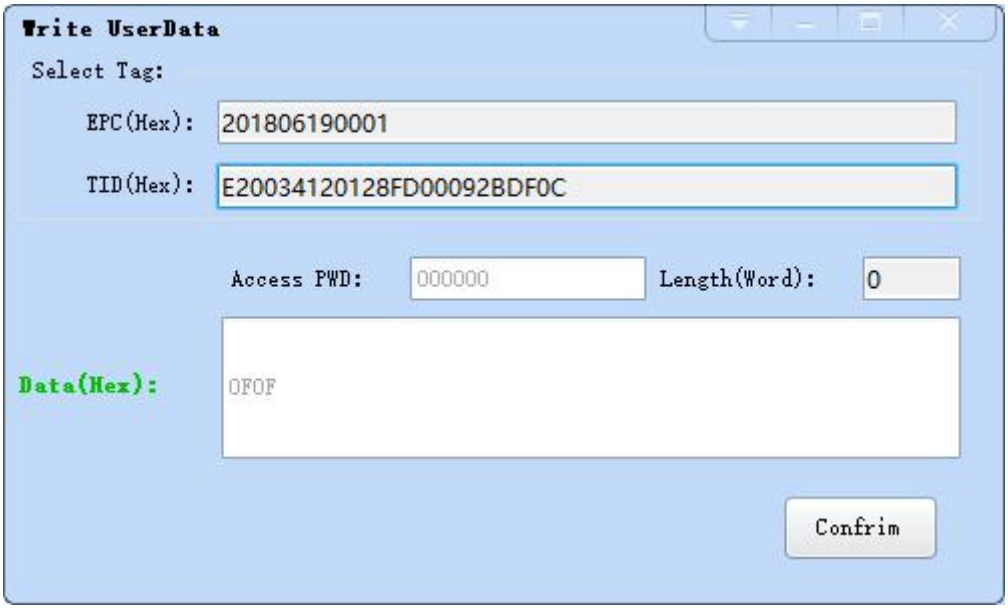

Image3-10

When you input the User data(Hex) to below Data(Hex) input box, pay attention to ensure the digits are hexadecimal numbers, if the tag is set with password, you also need to write access password in Access PWD input box , then click Confirm, it will return the result of writing User data, as shown in image 3 -11.

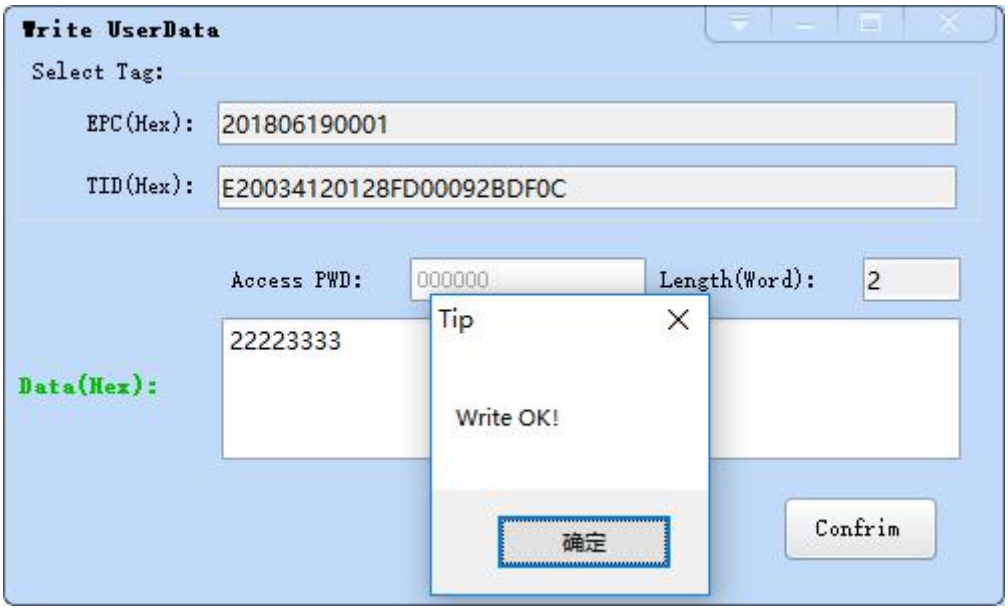

Image3-11

If the prompt shows failure, determine the next step based on the failure prompt.

3.4 Information display

Click  ,and you can select and display options in the list, as shown in image 3-12.

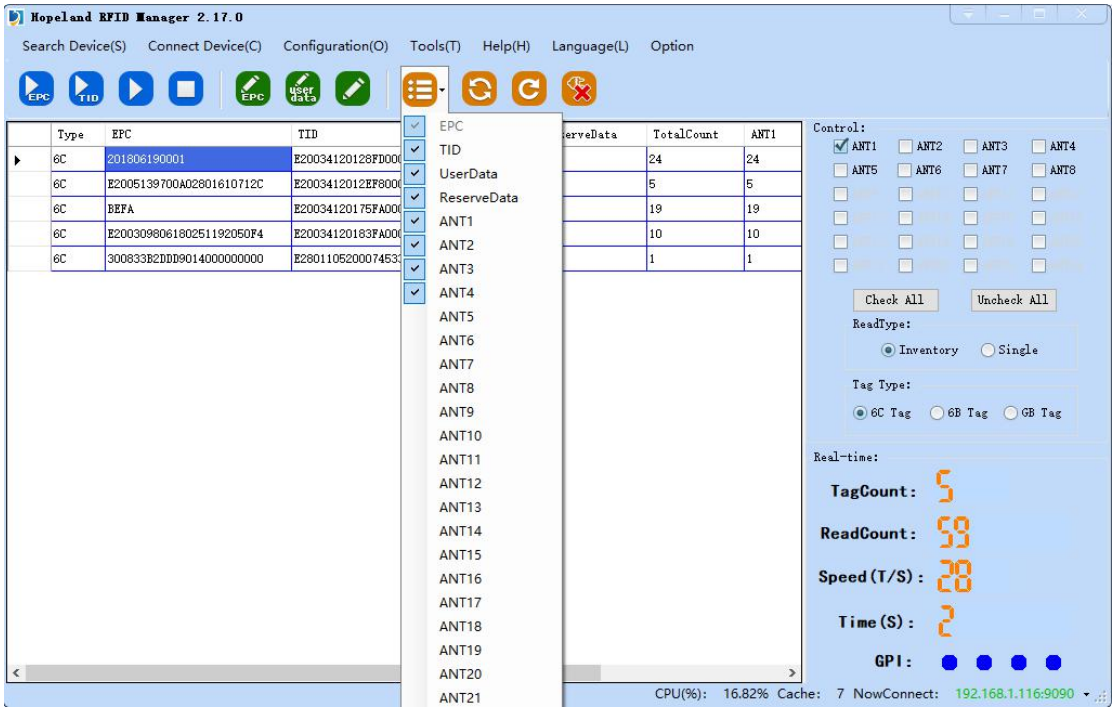

Image3-12

You select an option, or cancel the option to change whether it will be displayed in the list.

Click  to clear tag information in the current list, as shown in image 3-13.

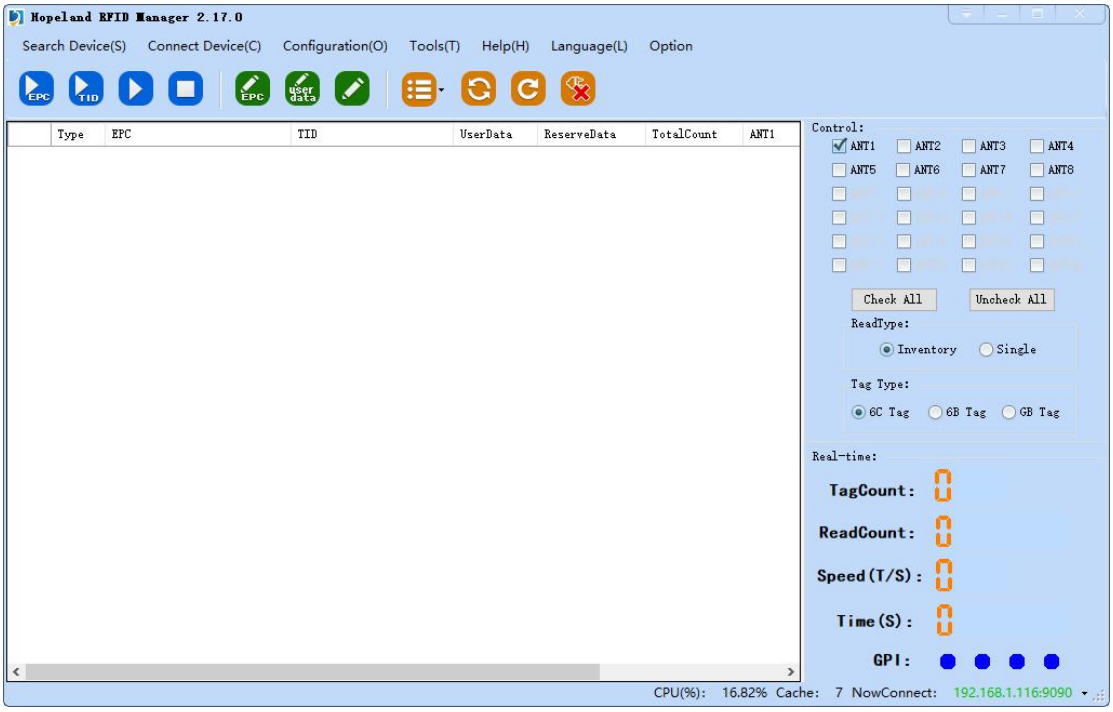

Image3-13

3.5 Restart reader

Click  to restart the reader.After click,you will hear the reader 'beep' , which indicates that the reader has restarted successfully.Then reconnect.

3.6 Reader information

Click on the Toolbar "help" - "Reader Info" to query information from the connected reader. The information includes reader application version, reader name, and the time that the reader has been running after powering on, as shown in image 3-14.

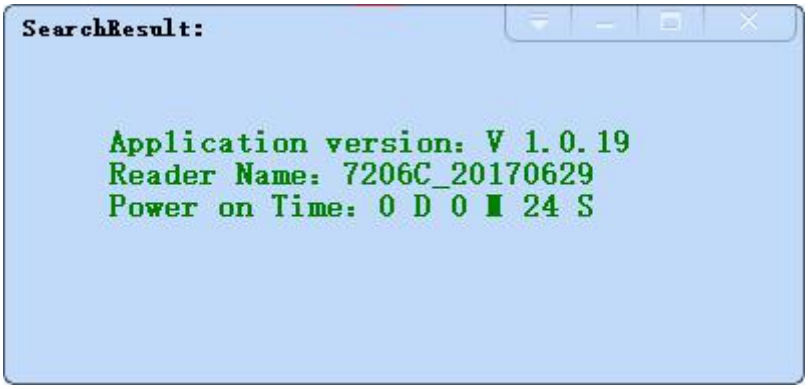

Image3-14

3.7 Baseband information

Click on the Toolbar "Help" - "Baseband Version" to query the baseband information of the connected reader, as shown in image 3-15.

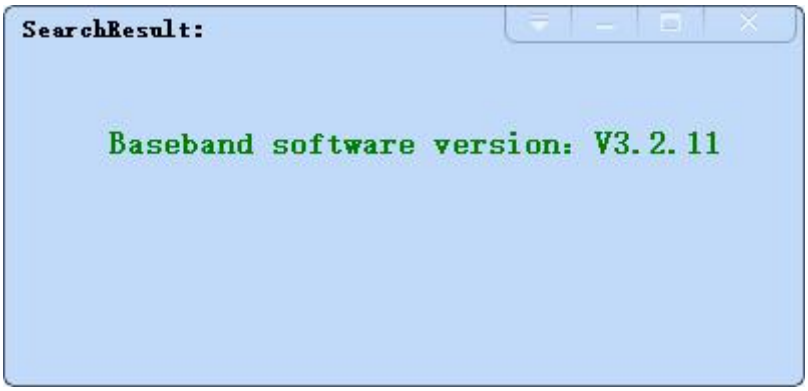

Image3-15

4.Configuration

4.1 Common configuration

4.1.1 Antenna power configuration

The position of Antenna power configuration is shown in image 4-1.

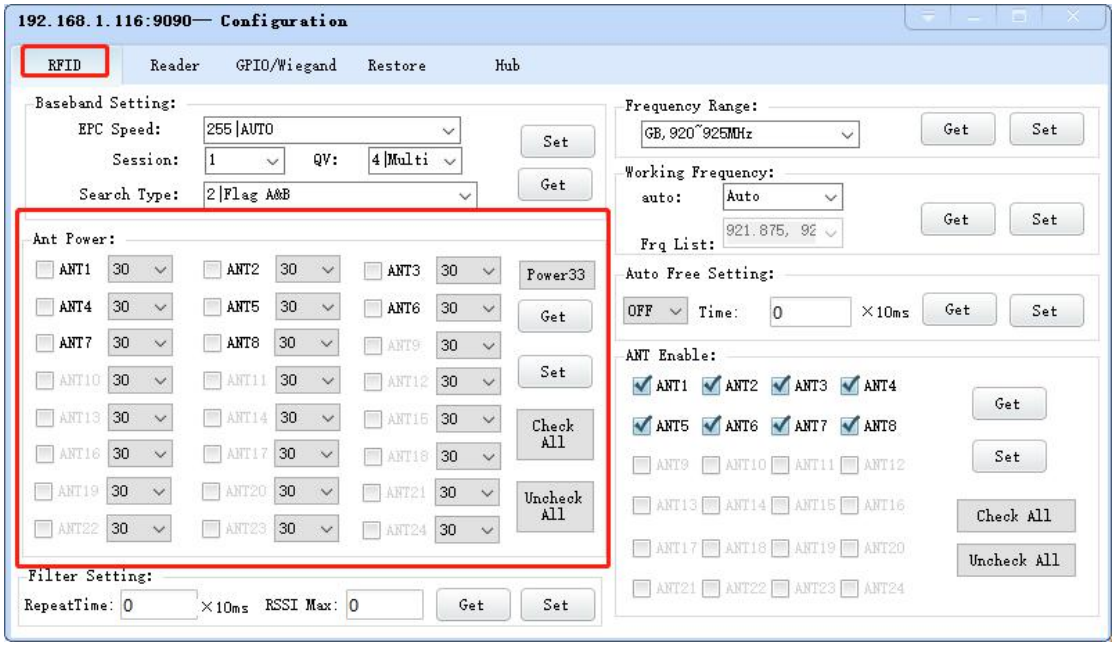

Image4-1

Note that the power can be changed by the drop-down box, then you must select the ANT No. before click the Set button ,or the power set on the antenna is not successful. Multiple choice is available

4.1.2 Antenna enable

The Position of Antenna Enable is shown in image 4-2.

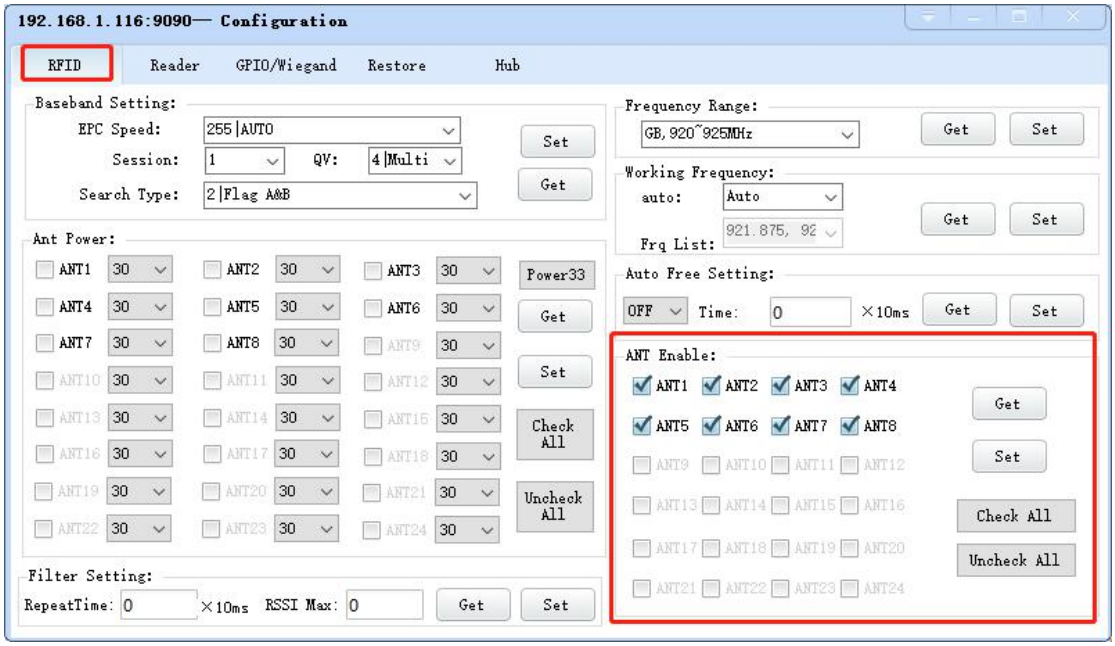

Image4-2

Enable the antenna by checking the check box beside the antenna number, click the "Get" button to query which antenna has been checked. Please note the difference of “Antenna enable” and “Antenna power”, the “Antenna enable” indicates whether the

antenna is available while the “Antenna power”indicates the range of antenna power. If the “Antenna enable” does not turn on, it is not available even the antenna power setting is large.

4.1.3 Serial port configuration

Click the toolbar "Configuration" - "Reader" - "RS232" to enter the interface of serial port setting, as shown in image 4-3.

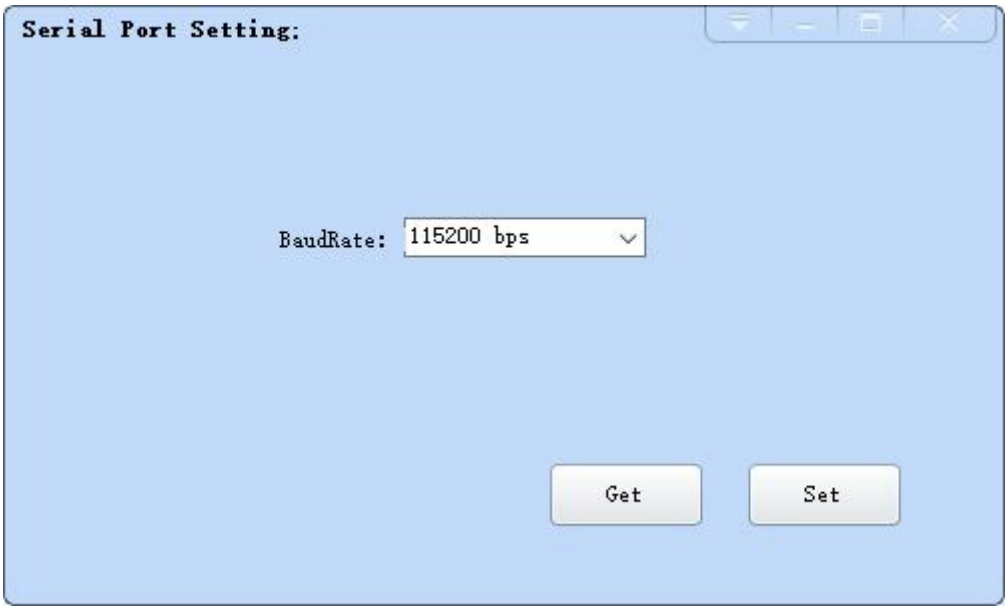

Image4-3

Click the “Get” button to get the current serial baud rate, through the drop-down box to change the baud rate and then click the “Set” button to submit, Setting up success or failure will be prompted .

Note：if the reader is connected through serial port, baud rate changed, you need to use the new baud rate to re-connect, otherwise the reader can not continue to operate.

4.1.4 Network configuration

Click the toolbar "Configuration" - "Reader" - "RJ45" to enter the interface of network adapter setting, as shown in image 4-4.

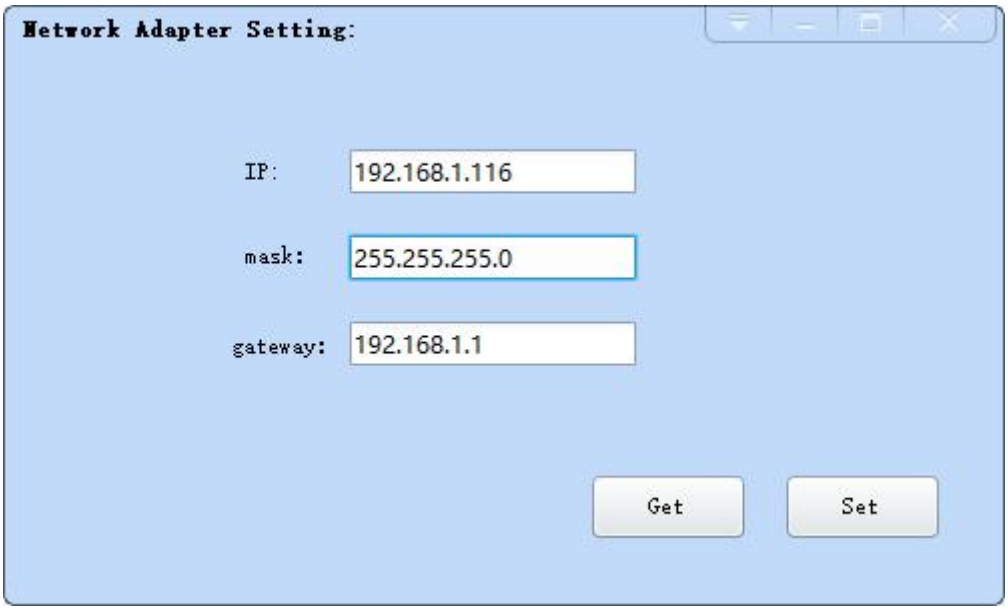

Image4-4

Click the “Get” button to get the current network setting information. You can set the parameters by manually changing the IP, Mask, Gateway, then clicking the “Set” button to submit, Setting up success and failure will be prompted .

Note：After the setup succeeded, if the reader is connected through network，you need to use the new IP to reconnect when IP address changed, otherwise the reader can not continue to operate .

4.1.5 485 configuration

Click the toolbar "Configuration" - "Reader" - "RS485" to enter the 485 setup interface, as shown in image 4-5.

Image4-5

Click the “Get” button to get the current 485 setting, you can set the 485 serial address and Baud Rate by manually change the parameters, then click the“Set” button to submit. Setting up success and failure will be prompted .

Note：After the setup succeeded, if the reader is connected through RS485，you need to use the new address and BaudRate to reconnect when 485 address and BaudRate changed ,otherwise the reader can not continue to operate . Address range of 485 is 1-254 .

4.1.6 GPI configuration

Click the toolbar "Configuration" - "GPI/O" - "GPI" to enter the GPI configuration interface, as shown in image 4-6.

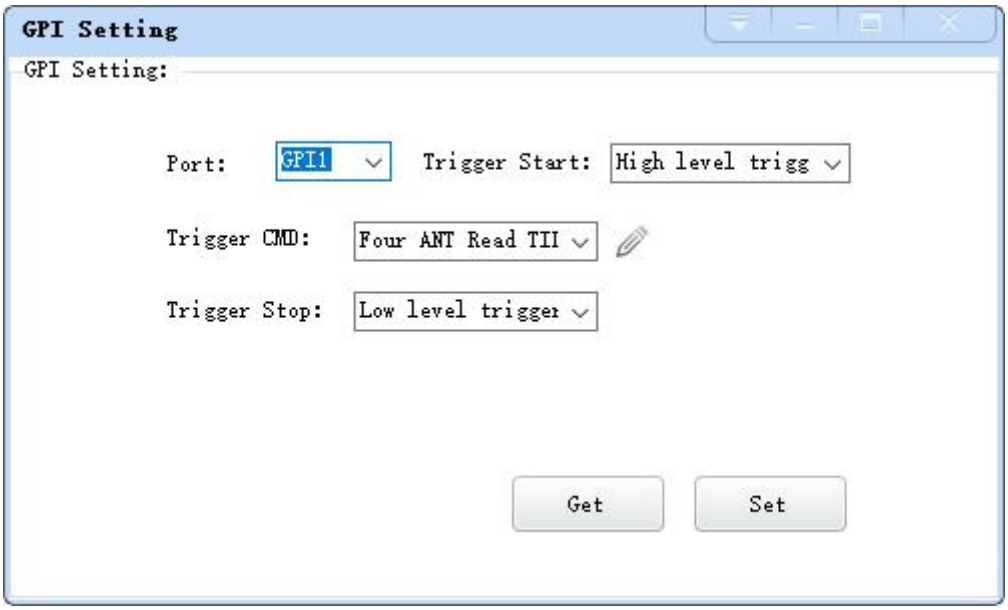

Image4-6

Click the “Get” button to get the GPI setting, you can set the GPI by manually change the parameters, then click the“Set” button to submit . Setting up success and failure will be prompted .

4.1.7 GPI status query

Click the toolbar "Configuration" - "GPI/O" - "GPI state" to enter the GPI status query interface, as shown in image 4-7.

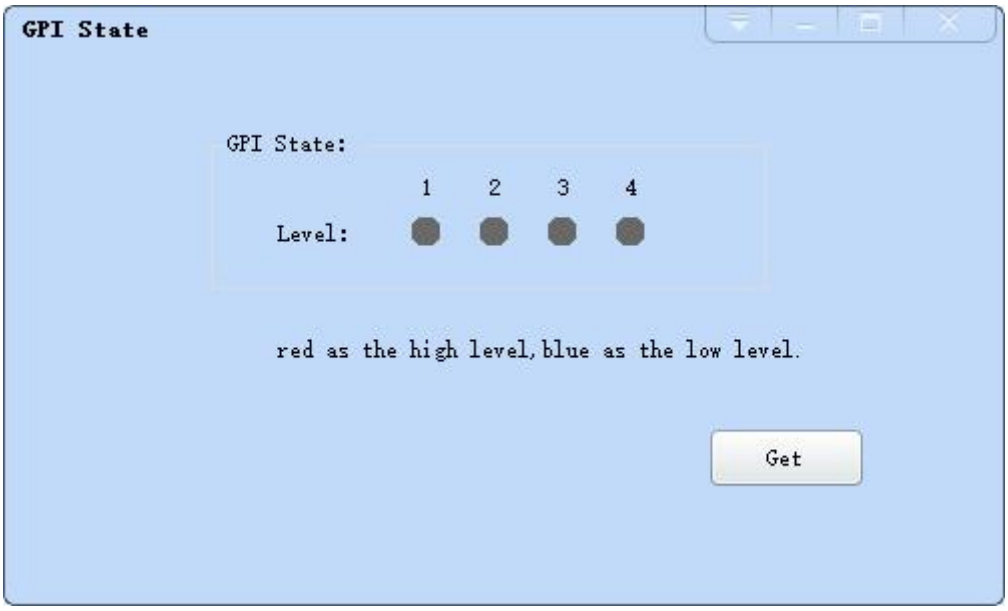

Image4-7

Click the “Get” button to get the Status of GPI，red means “High level”, gray means “Low level”.

4.1.8 GPO configuration

Click the toolbar "Configuration" - "GPI/O" - "GPO" to enter the GPO configuration interface, as shown in image 4-8.

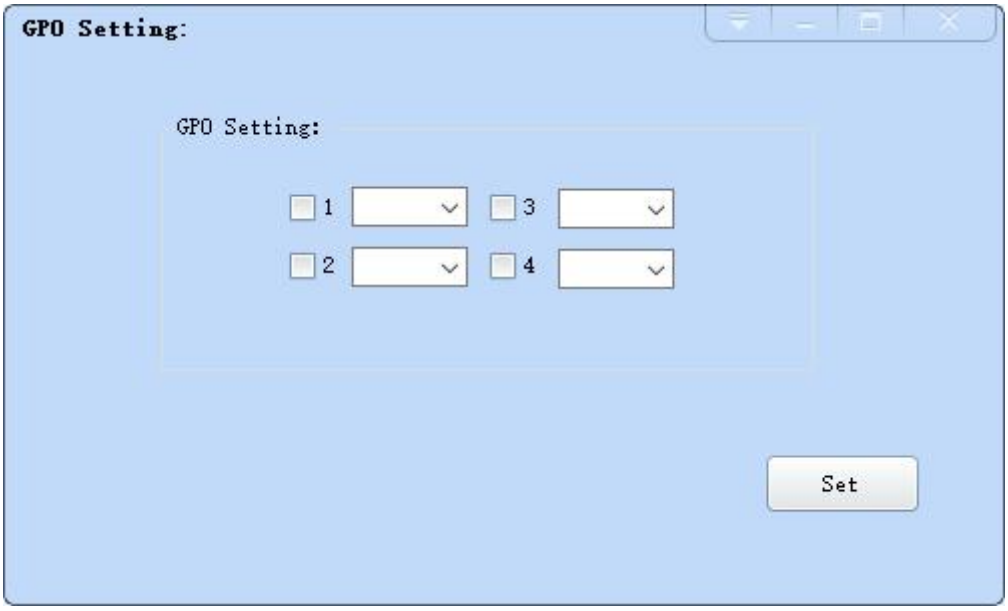

Image4-8

You can set the GPO by manually change the parameters, then click the “Set” button to submit. Setting up success and failure will be prompted .

4.2 Advanced configuration

4.2.1 TCP server/client mode

Click the toolbar "Configuration" - "Reader" - "TCP client/server" to enter the TCP server/client mode setup interface, as shown in image 4-9.

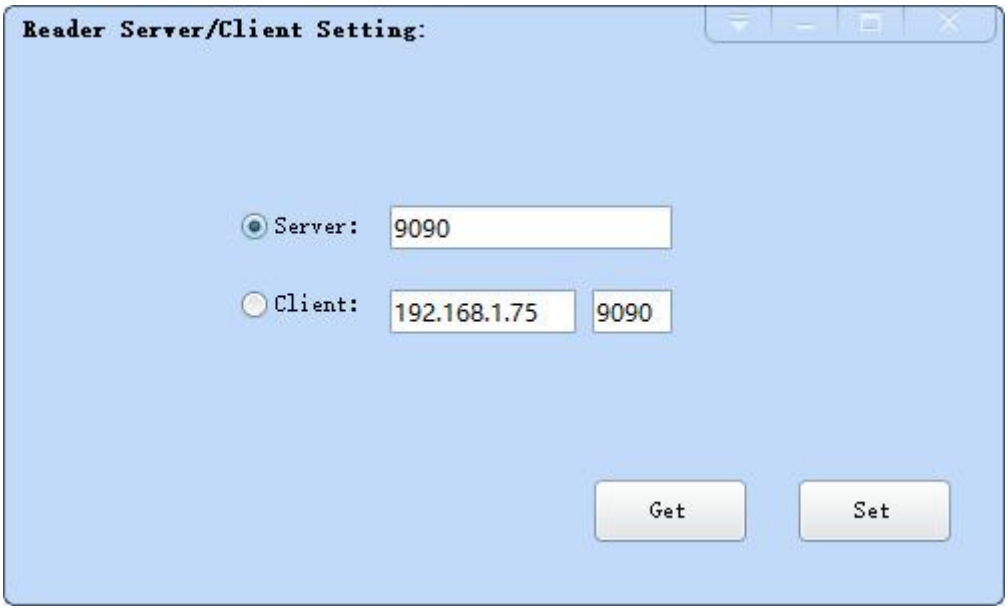

Image4-9

Click the “Get” button to get the current TCP server / client mode setting information, manually changing the reader's service mode, IP address and port, then click the “Set” button to submit, Setting up success and failure will be prompted

Server mode means host search reader for connection. Client mode means reader search host for connection.

4.2.2 Frequency hopping configuration

Click the toolbar "Configuration" - "RFID" - "Frequency Hopping" to enter the frequency hopping management setting interface, as shown in image 4-10.

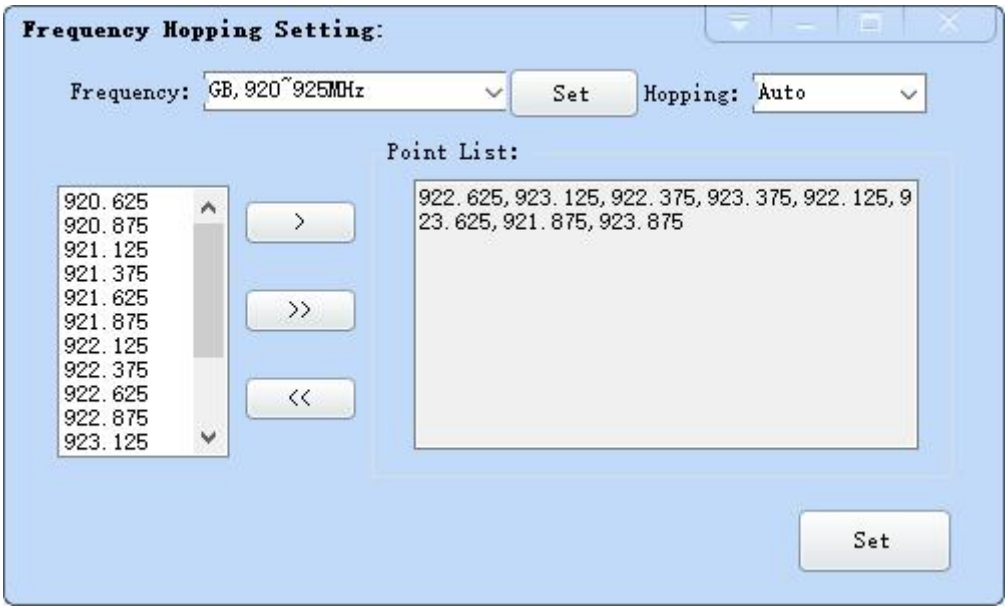

Image4-10

You can change the working frequency band of the reader in the drop-down box of Frequency and clicking "Set" to confirm, as shown in image 4-11.

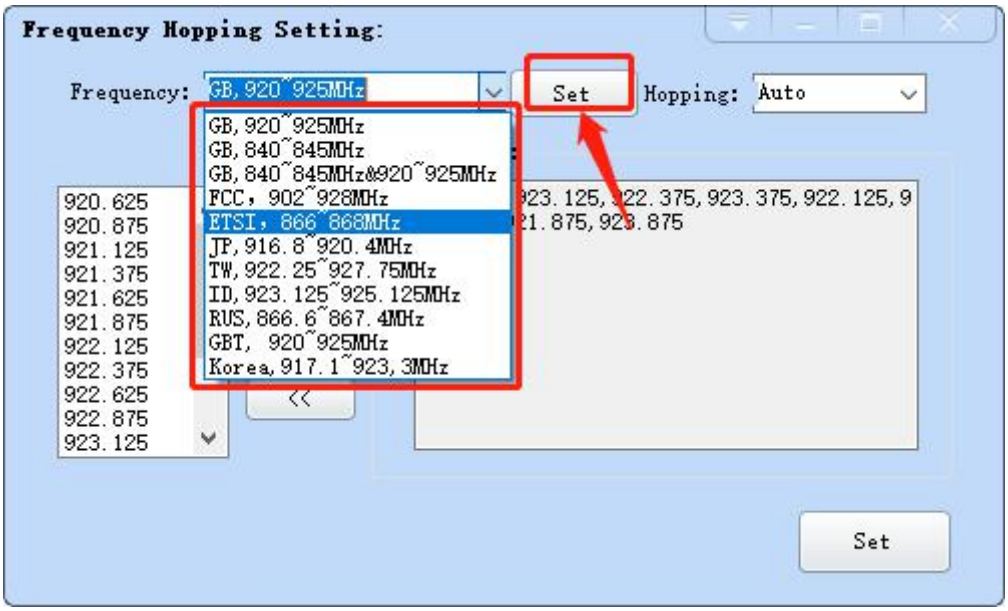

Image4-11

Modify the band by the middle three buttons to add or delete the frequency, as shown in image 4-12.

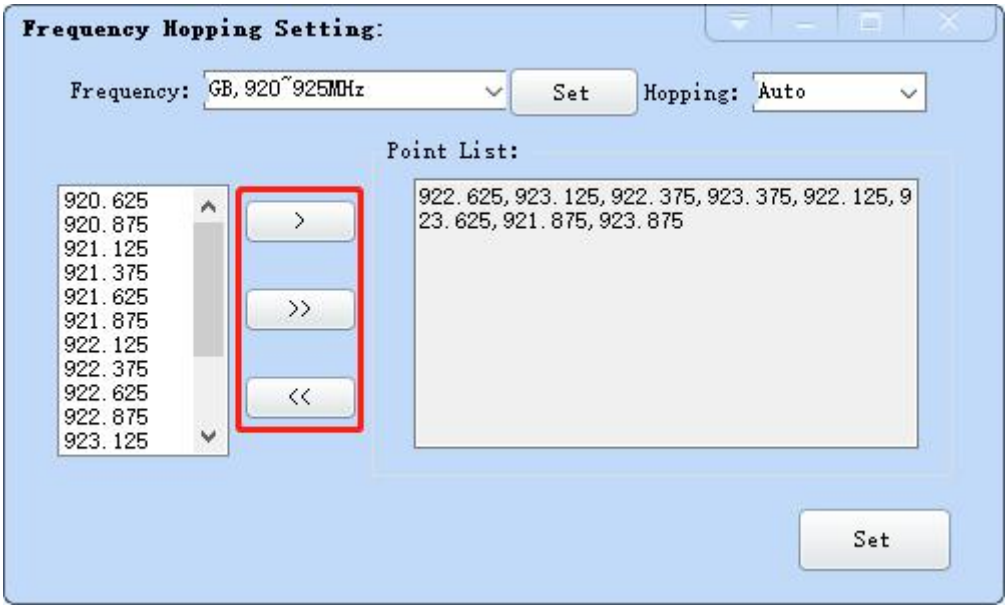

Image4-12

After the modification is complete, click on the “Set” button below to confirm the frequency band of the connected reader, Setting up success and failure will be prompted

4.2.3 Tag filter

Click the toolbar "Configuration" - "RFID" - "Tag Filter" to enter the tag filter setting interface, as shown in image 4-13.

Image4-13

Click the “Get” to get the current tag filter setting information, change the filter time and signal threshold parameters, then click “Set” to confirm, Setting up success and failure will be prompted. The filter time range is 0-65535 and the RSSI threshold is 0-255.

4.2.4 Auto free

Click the toolbar "Configuration" - "RFID" - "Auto Free" to enter the automatic inactivity setting interface, as shown in image 4-14.

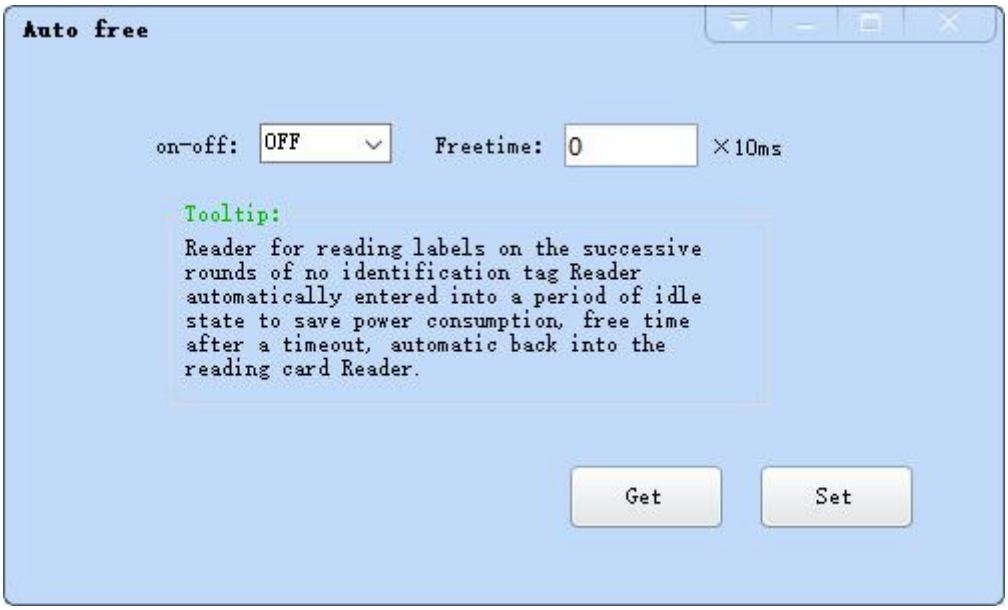

Image4-14

Click the “Get” button to get the current automatic idle setting information, manually change the automatically idle switch and idle time parameters, then click Set to confirm, Setting up success and failure will be prompted.

4.2.5 Wiegand configuration

Click the toolbar "Configuration" - "GPI/O" - "Wiegand" to enter the wiegand configuration interface, as shown in image 4-15.

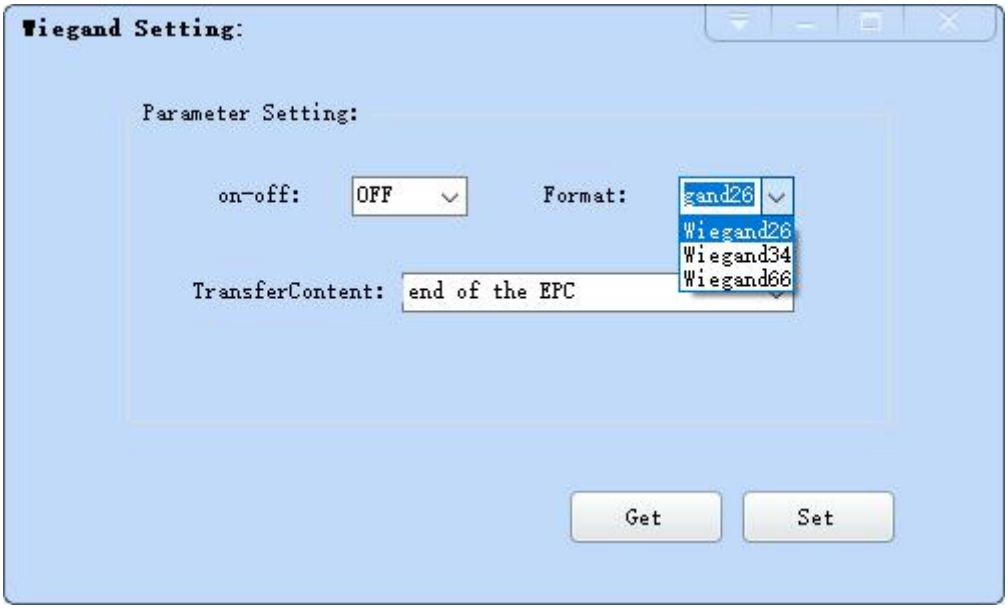

Image4-15

Click the “Get” button to get the current Wiegand configuration information, change the Wiegand configuration information, then click the “Set” button to confirm, Setting up

success and failure will be prompted

4.2.7 Factory data reset

Click the toolbar ”Configuration”- "Restore Factory" will pop up a prompt box to determine whether to restore the reader, as shown in image 4-16.

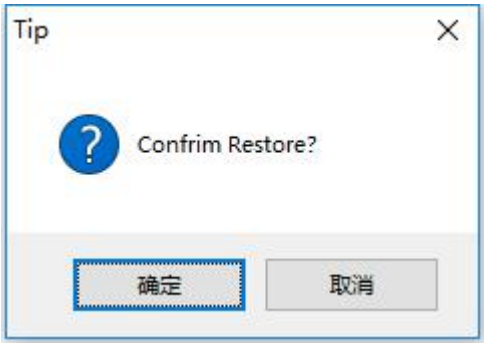

Image4-16

The restore setting means that all other configurations are changed to factory settings except that the reader's MAC remains unchanged.

4.2.8 Get cache data

When the reader is reading tags, if the connection suddenly disconnect but the antenna indicator light is still flashing , the tag data was read(after the connection is disconnected) will be stored in the reader’s memory. After reconnecting the reader, click on the toolbar "Configuration" - "Get Cache". The data read from reader when the connection is disconnected will be updated to the list.

4.2.9 Clear the cache data

Click the toolbar "Configuration" - "clear cache data" to clear the current reader cache.

4.2.10 EPC baseband configuration

Click the toolbar “Configuration””-“Advanced” to open the configuration panel, the position of baseband setting is shown in image 4-17.

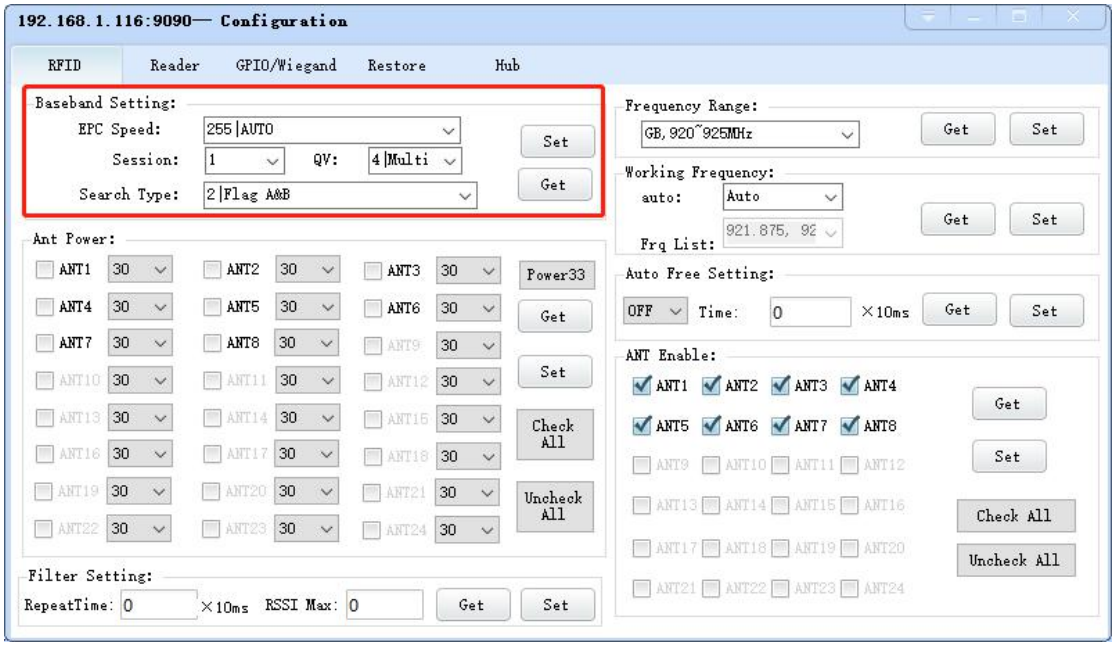

Image4-17

The EPC read rate can be changed by modifying the EPC baseband rate of this configuration, modify the Q value to configure whether to read multi-label or single-label，and modify the Search Type is to configure the search method is single-side or double-side search .

4.2.11 DHCP configuration

Click the toolbar "configure" - "advanced" to open the configuration main panel. The position of DHCP setting is shown in image 4-18.

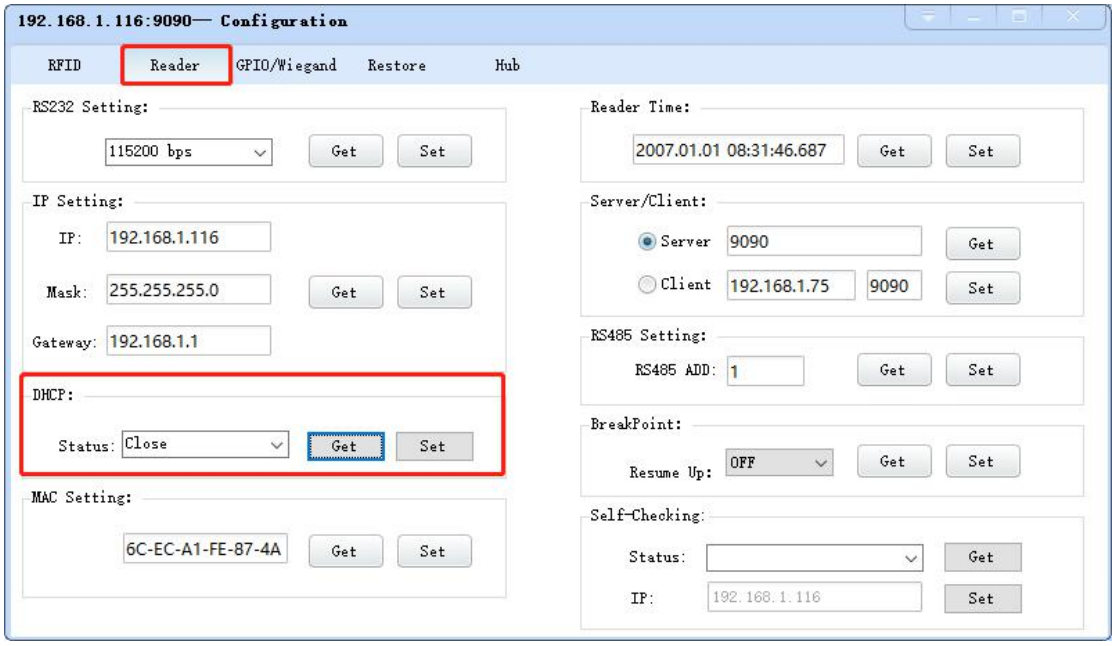

Image4-18

DHCP configuration indicates that the reader is gaining the IP address from router or not, if DHCP configuration closed, then IP setting is available, if DHCP configuration is open, then the IP setting is not available. As below image 4-19, this function needs reader to support.

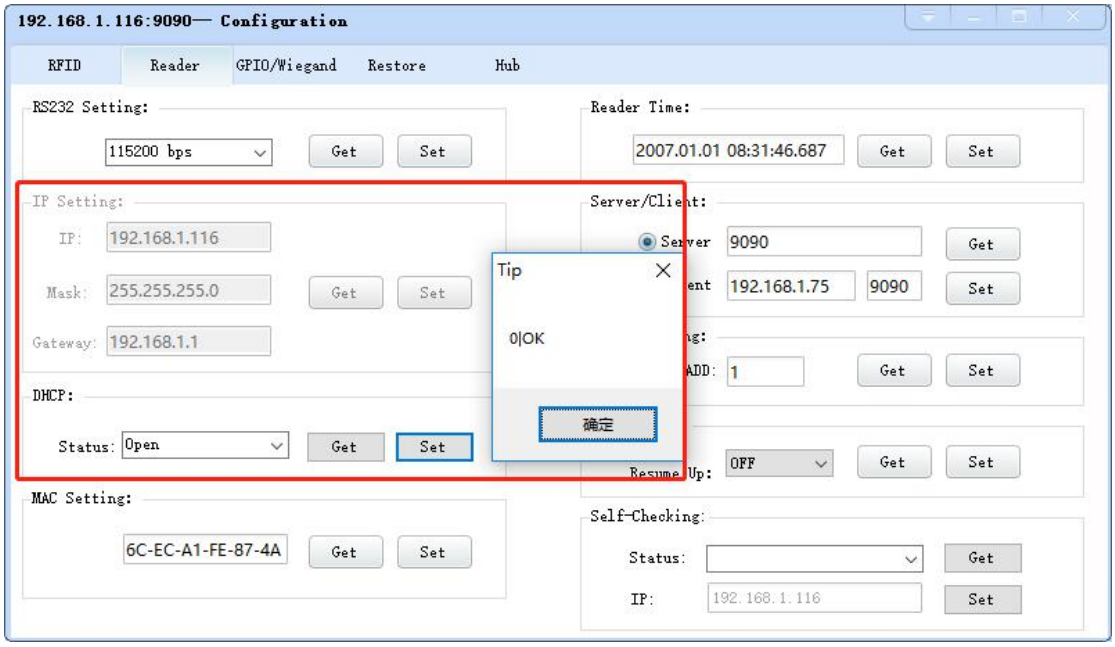

Image4-19

4.2.12 Network self-checking

Click the toolbar "configure" - "advanced" to open the configuration main panel. The position of network self-checking is shown in image 4-20.

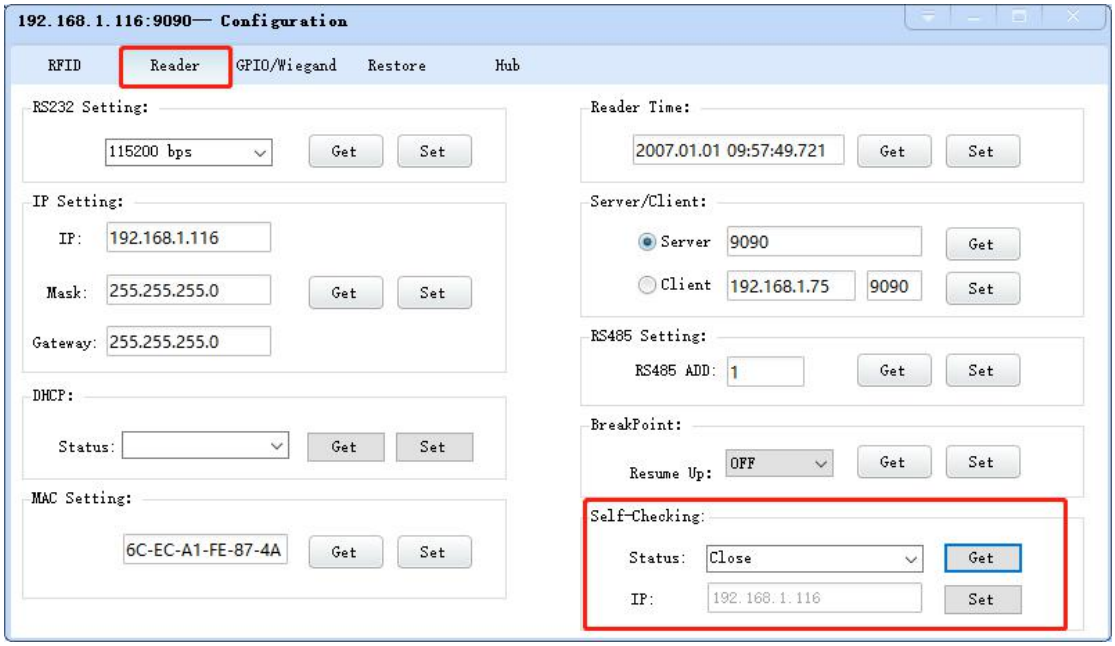

Image4-20

Self-checking indicates that whether to turn on the network connection status

checking function,if it's open it will send the heart beat package to confirm connection status, only limited to network connection, and this function requires reader including this function.

4.2.13 Breakpoint resume

Click the toolbar "configure" - "advanced" to open the configuration main panel. The position of breakpoint setting is shown in image 4-21.

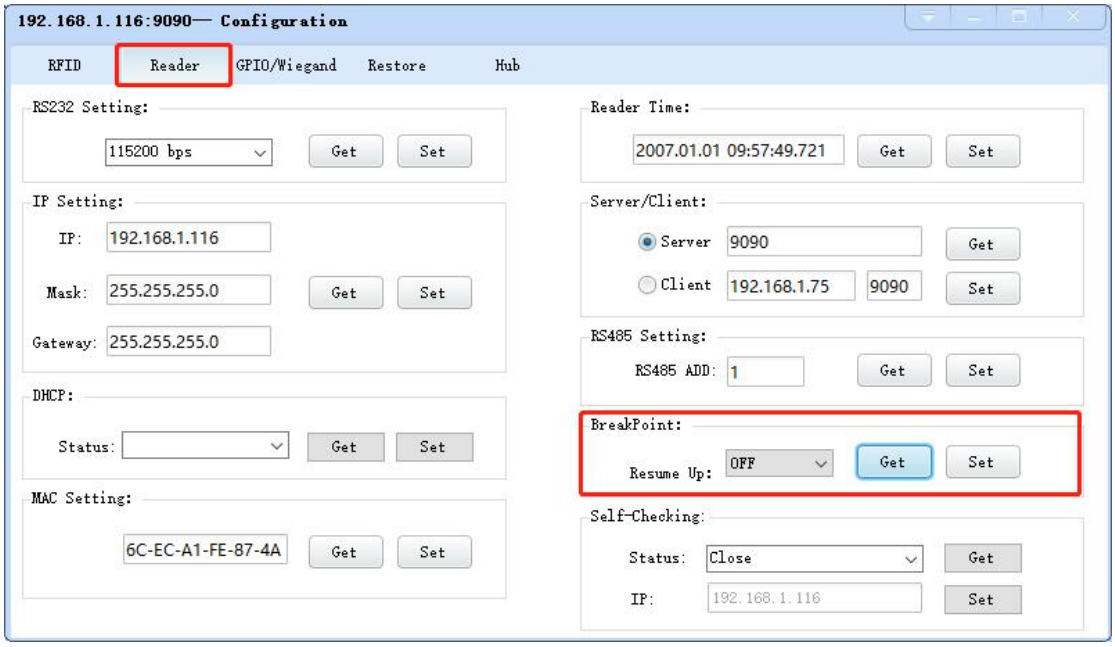

Image4-21

Breakpoint resume indicates that during the reading tags period, if suddenly disconnected, whether it will automatically save the data into reader's cachet. After re-connecting reader, it could get the data through 4.2.8(Get cache data) to recover the cache data, only limited to internet port.

4.2.14 Antenna hub configuration

Click "configure" - "advanced" in the toolbar to open the configuration main panel. The position of the antenna hub configuration is shown in image 4-22.

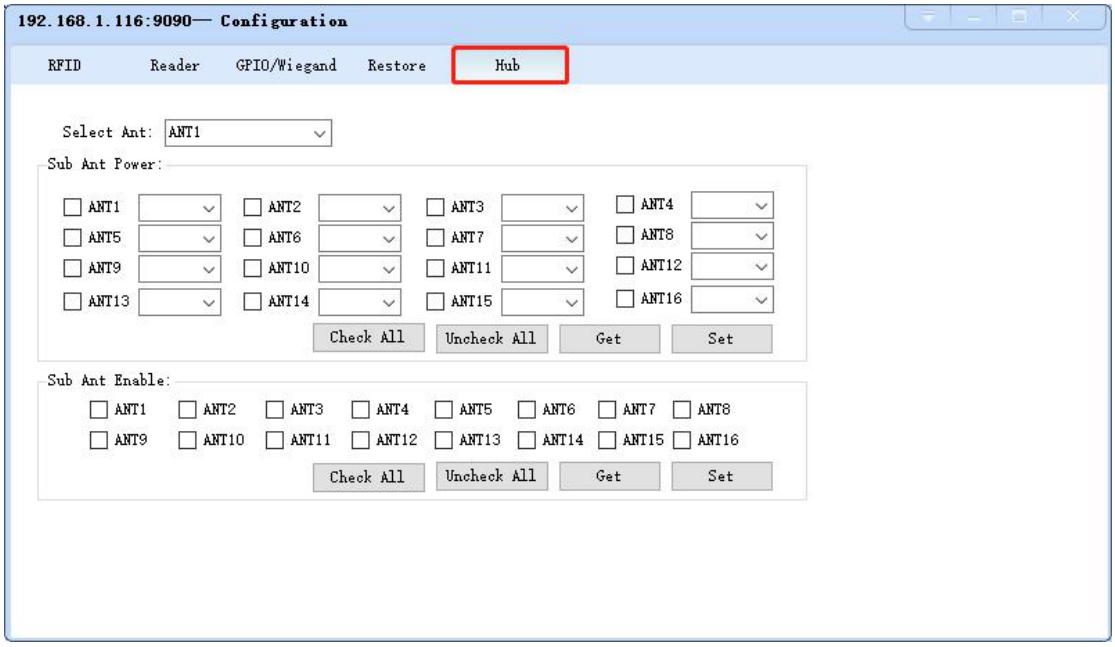

Image4-22

Select antenna of the reader firstly, then configure the hub's sub antennas, each sub antenna's output RF power and enable status can be separately setting up. This function requires the reader works with antenna hub.

5. Advanced operation

5.1 Custom read

If you need to read the user's data or reserve data, then you need the advanced operation. It could control the reading area freely, click this button  to enter the advanced reading interface, , as shown in image 5-1.

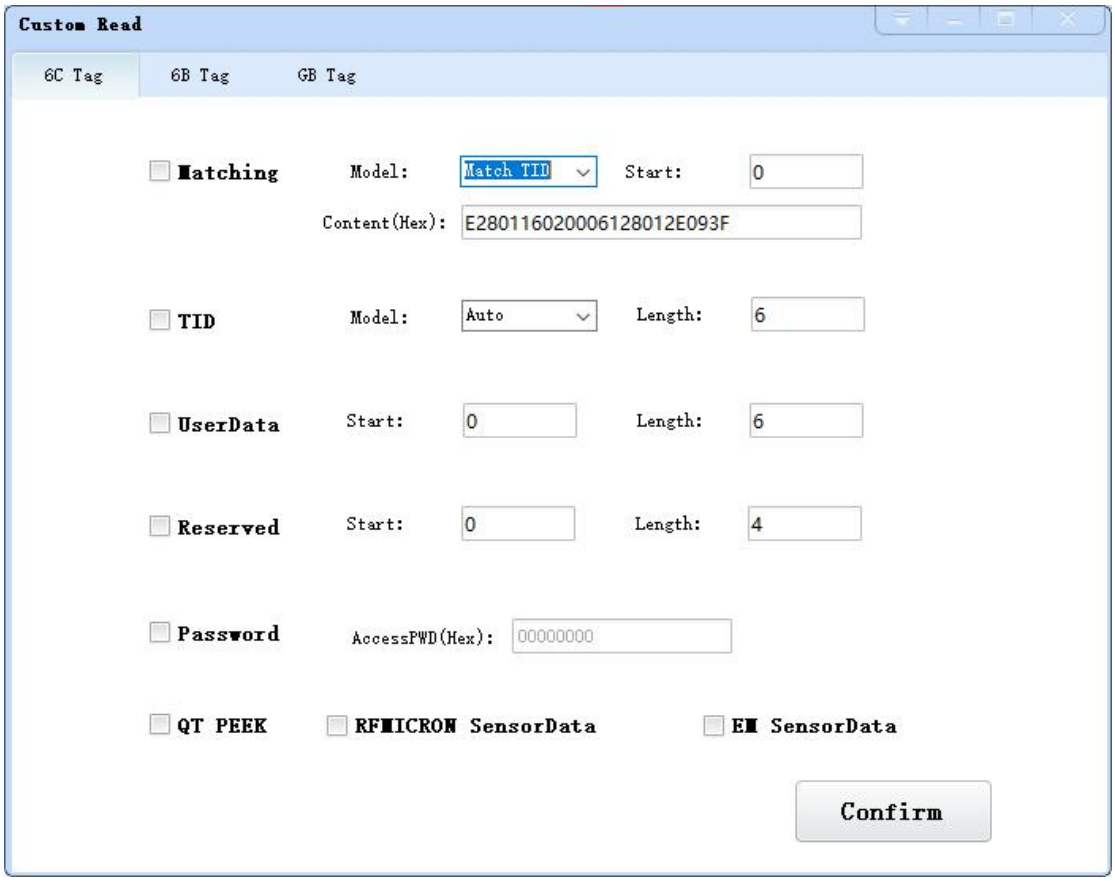

Image5-1

You need to check the front check box of each tag area to decide which area to read, fill in and select the read parameters, length unit is word, and content is hex data, click confirm, reader will read according to the configuration, if there is any tag match the configuration, the interface will update real time.

5.2 Advanced write

After stop reading TID tag, chose the tag for modify in the list, click the button  to open advanced writing interface, as shown in image 5-2.

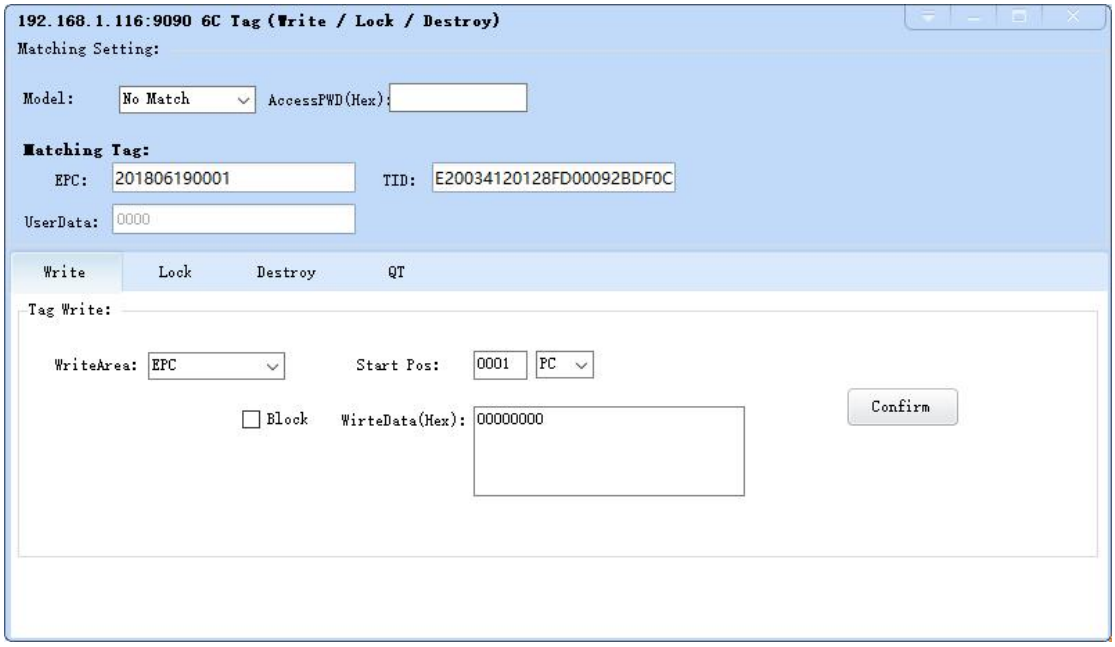

Image5-2

Under the advanced write interface, you can choose to write, lock, and destroy the selected tag, as shown in image 5-3, image 5-4, and image 5-5.

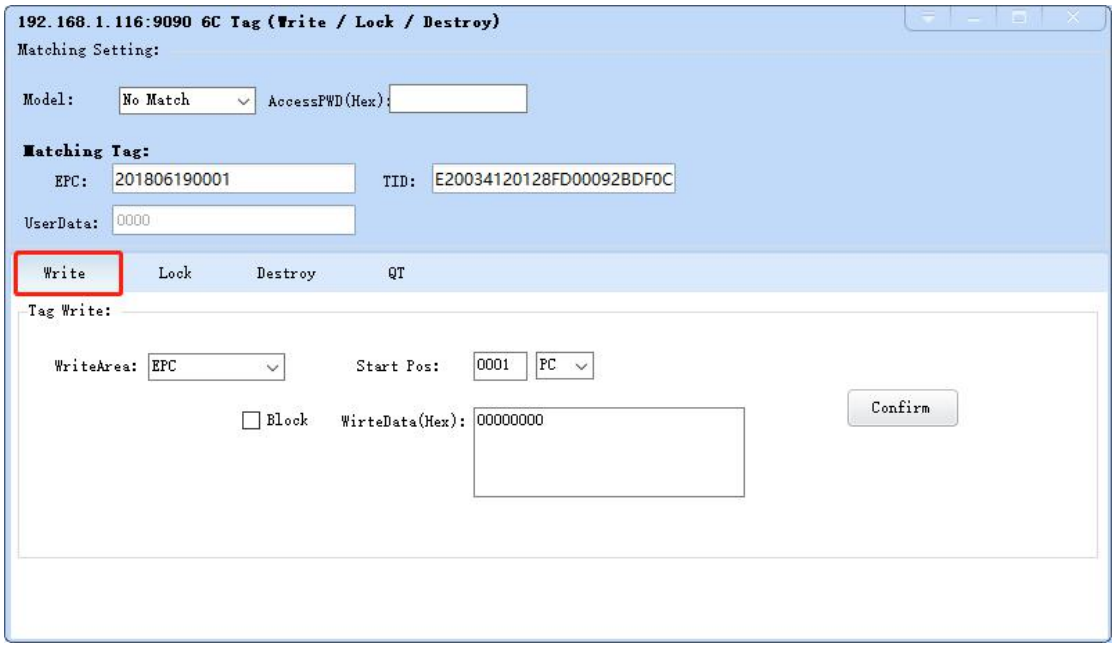

Image5-3

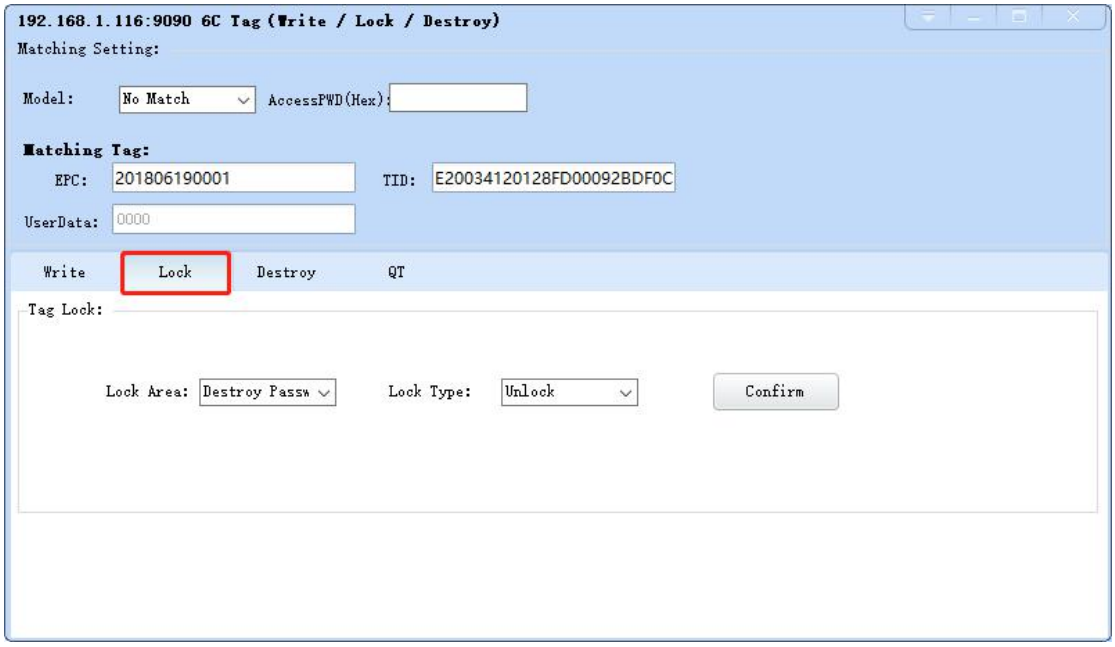

Image5-4

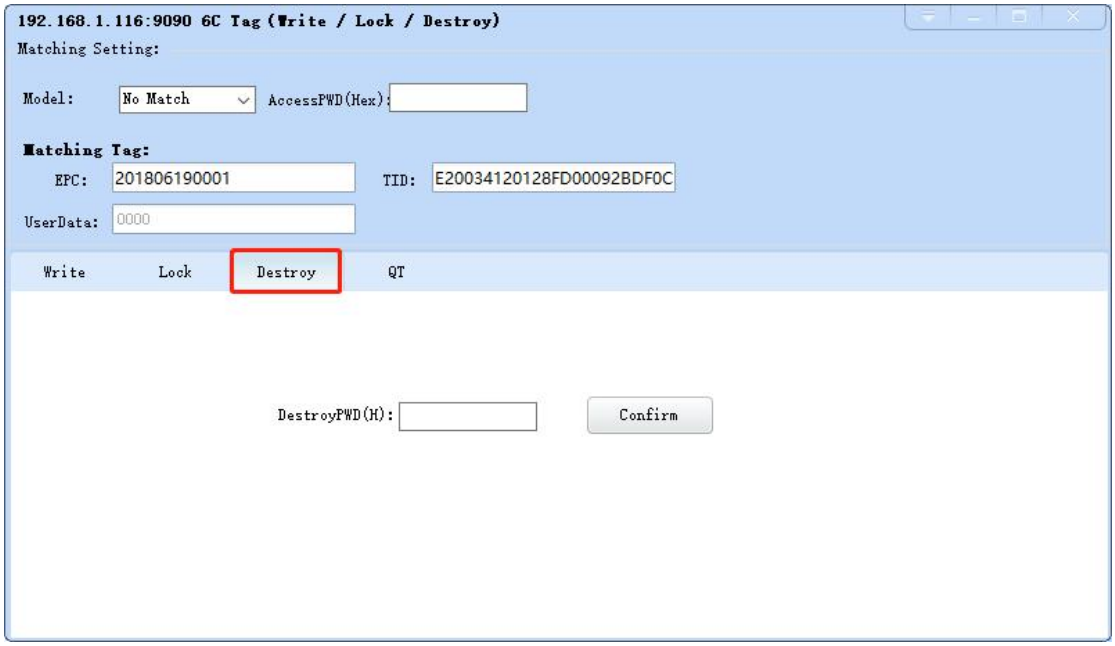

Image5-5

The address length unit is word, and the content is hexadecimal data. After modifying the setting option, click the confirm button on the right side for operation, and the next operation can be carried out according to the prompt.

5.3 Debug switch

Click the toolbar "Tools" - "Debug" to turn on or off the reader debug information, mainly showing hexadecimal instructions sent and received by the reader, as shown in image 5-6.

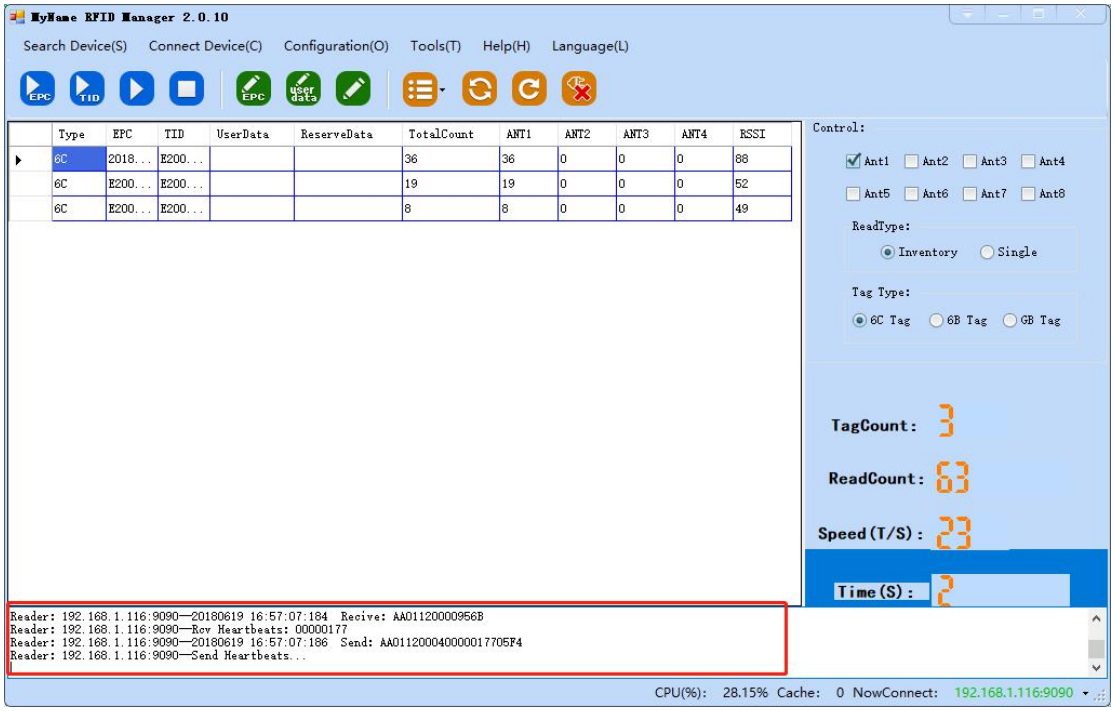

Image5-6

5.4 Sound

Click "Tools" - "Sound" in the toolbar to set the operation sound of the reader, as shown in image 5-7.

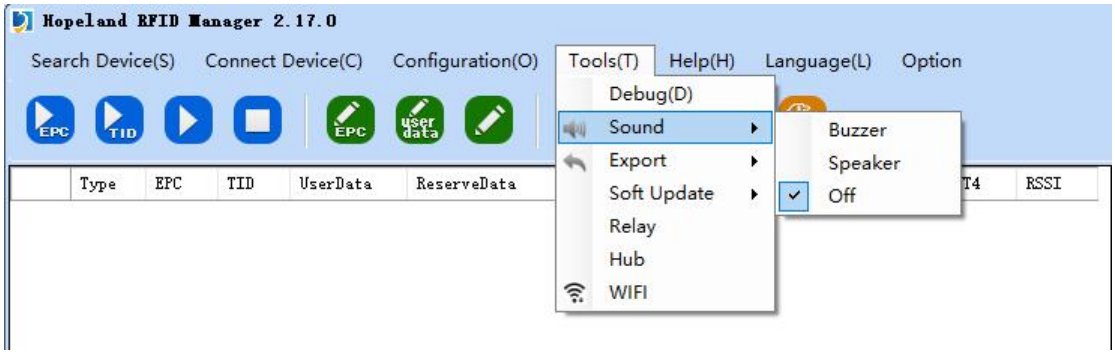

Image5-7

You can set whether the buzzer is ringing or the speaker is ringing or you can turn it off. It's not the voice of the reader, it's the voice of the PC.

5.5 Data export

Click "Tools" - "Export" in the toolbar to export the label information in the list to the file, which can be saved as.csv file and.xls file, as shown in image 5-8, image 5-9 and image 5-10.

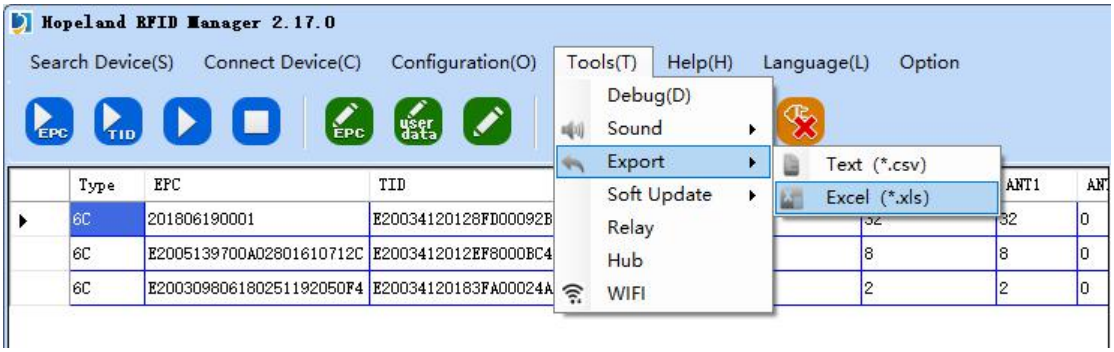

Image5-8

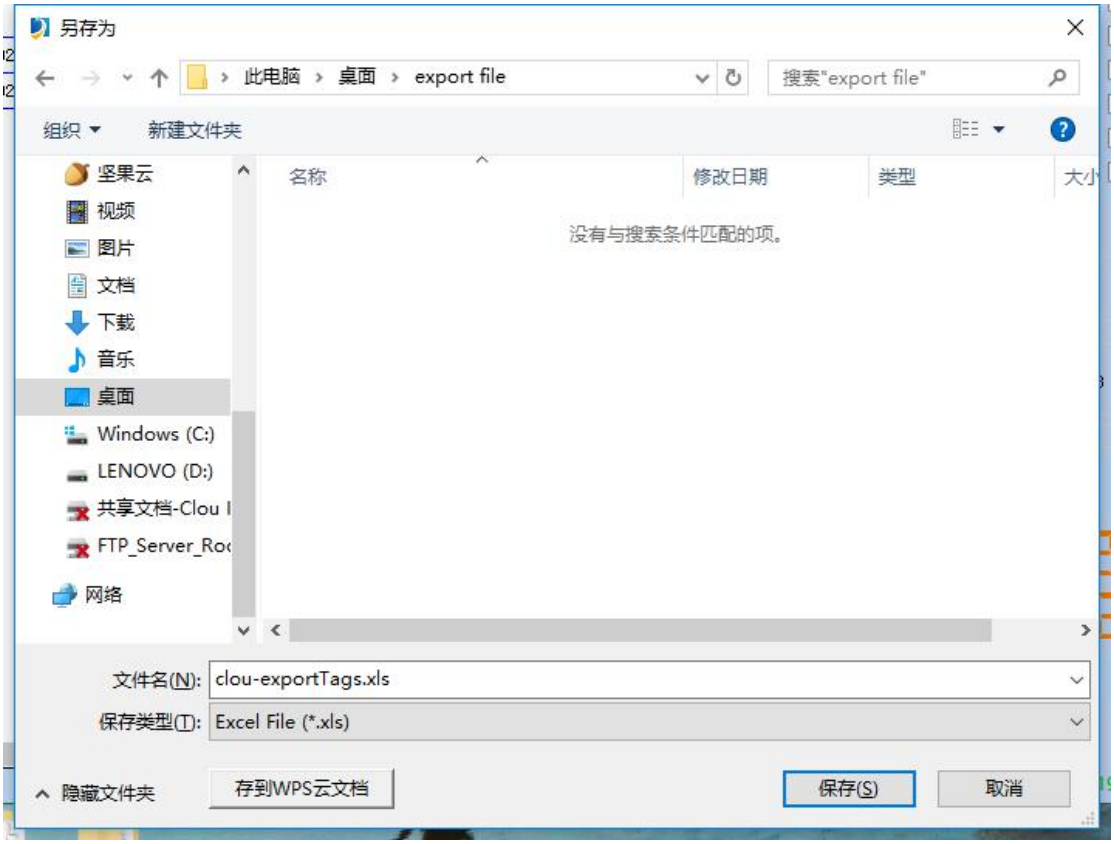

Image5-9

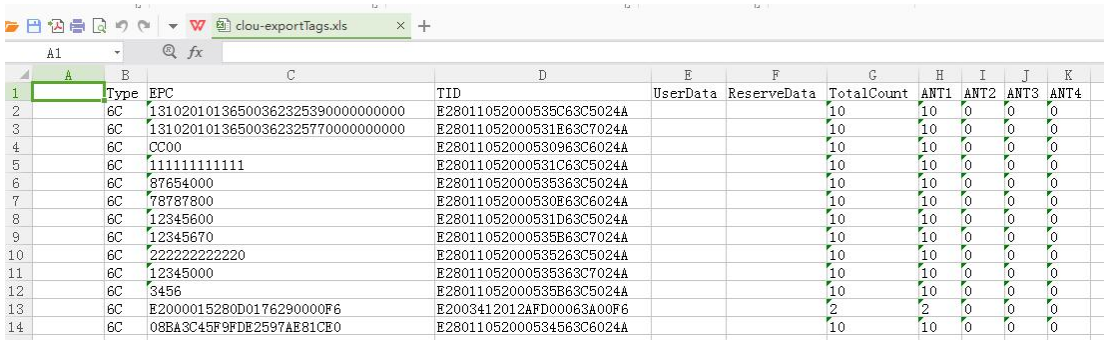

Image5-10

5.6 Software upgrade

5.6.1 Application software upgrade

Click the toolbar "Tools" - "Soft Update" - "Application" to enter the application software upgrade interface, as shown in image 5-11.

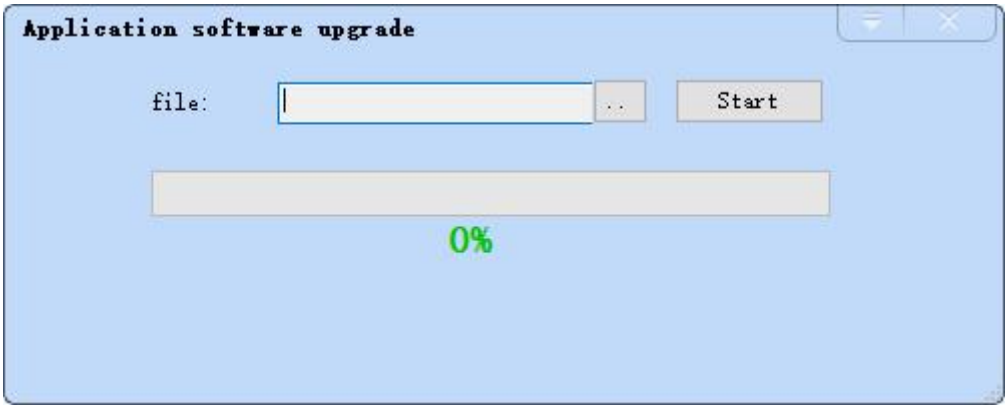

Image5-11

Click  pop-up the selection file dialog, select the application upgrade software, as shown in image 5-12.

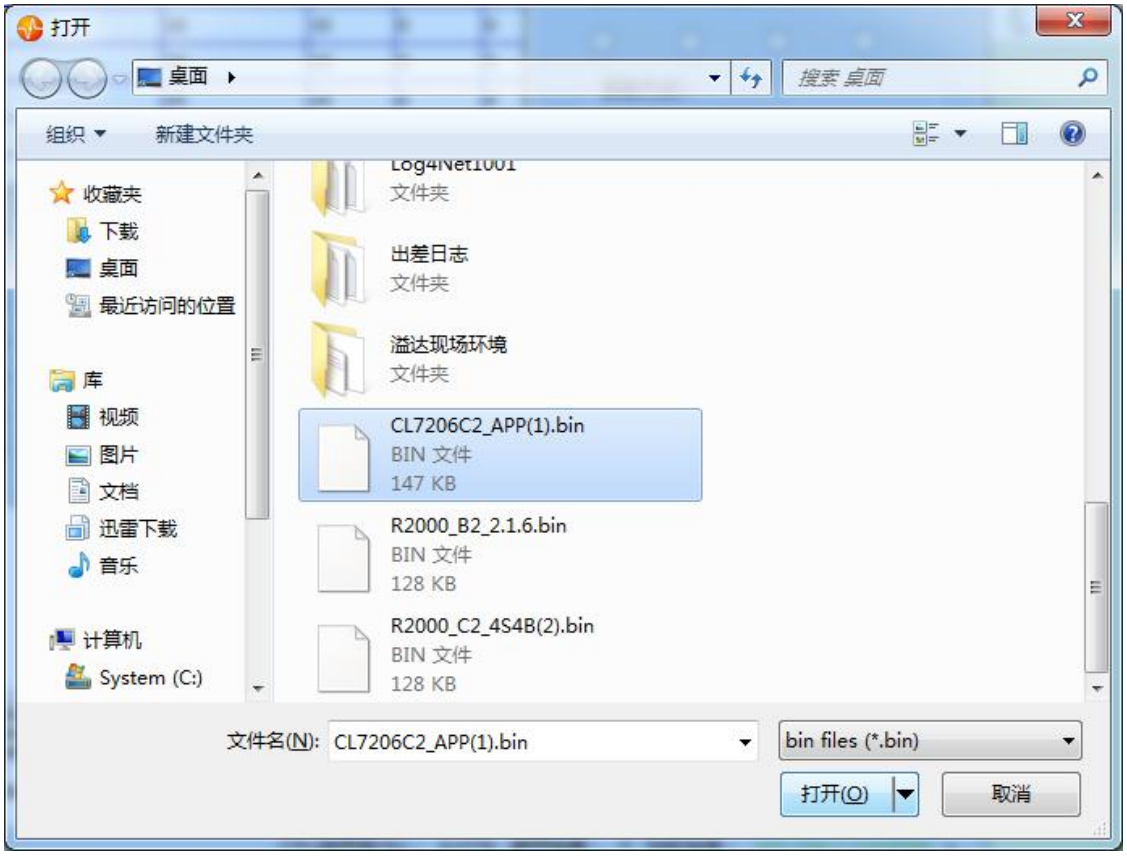

Image5-12

Click on "Open" - "Start" to perform the upgrade, as shown in image 5-13.

Image5-13

Tips after success upgrade, as shown in image 5-14.

Image5-14

Click “confirm” to restart the reader for the setting to take effect. if tips failure,Please follow the failure prompt for the next step to upgrade again.

5.6.2 Baseband software upgrade

Click the toolbar "Tools" - "Soft Update" - "Baseband" to enter the baseband software upgrade interface, as shown in image 5-15.

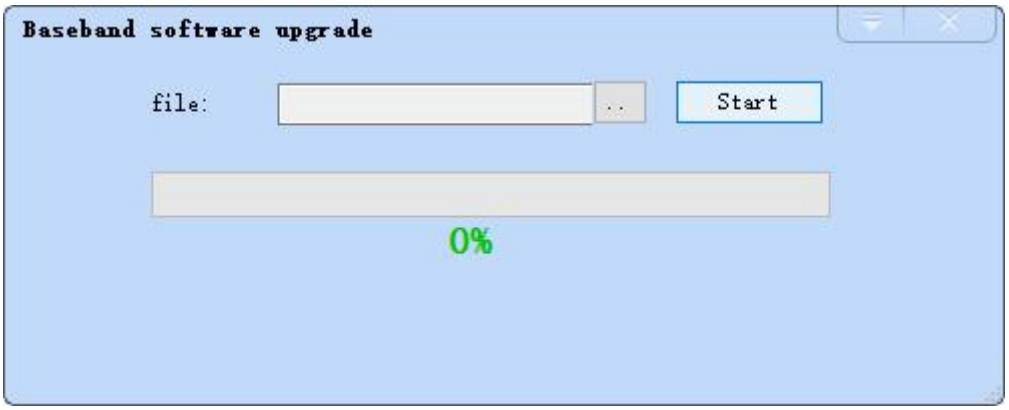

Image5-15

Click  pop-up the selection file dialog, select the baseband upgrade software, , as shown in image 5-16.

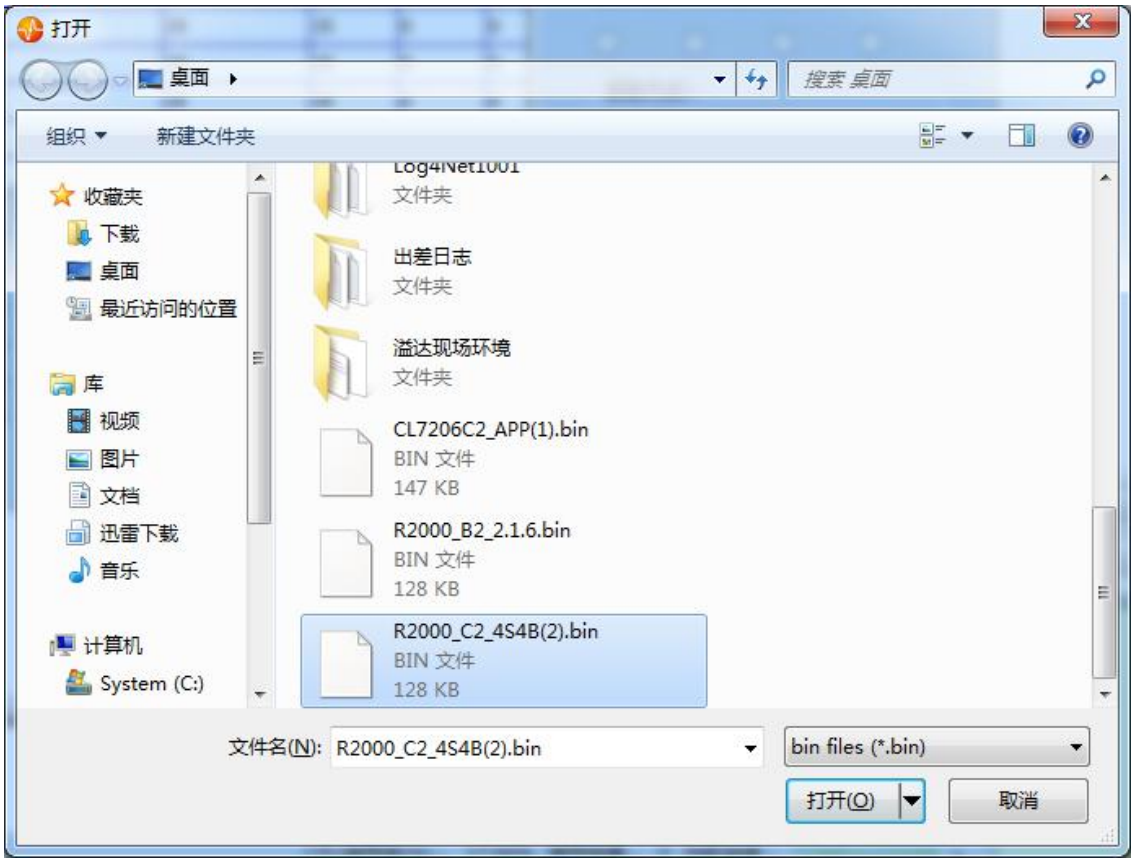

Image5-16

Click on "Open" - "Start" to perform the upgrade, as shown in image 5-17.

Image5-17

Tips after success upgrade, as shown in image 5-18.

Image5-18

Click “confirm” to restart the reader for the setting to take effect. if tips failure,Please follow the failure prompt for the next step to upgrade again.

5.7 Relay

Relay configuration is similar to GPO, refer to image 4.1.8.

5.8 Hub

Click "Tools" - "Hub" in the toolbar to open the hub reading interface, as shown in

image 5-19.

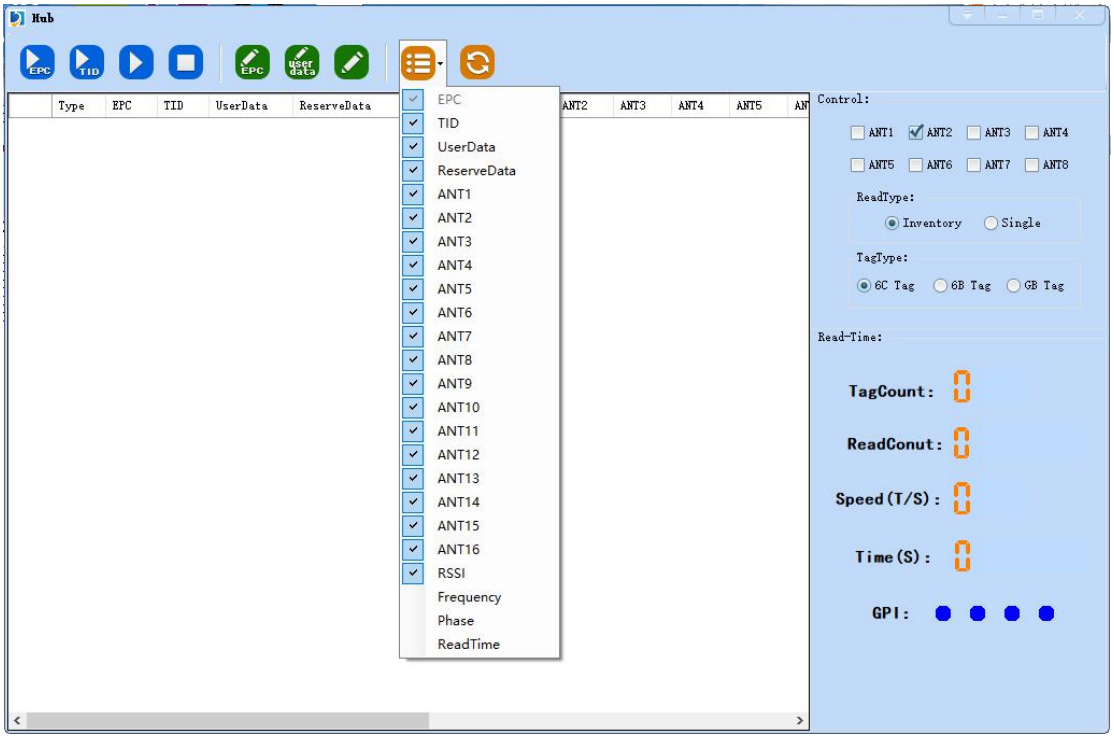

Image5-19

Hub reading interface is similar to the main interface, only difference is there are 16 ANT numbers from ANT1 TO ANT16, which means the sub antenna number expanded from the hub. The other operation are all the same as the main interface, refer to the Quick Use Section.

5.9 WIFI

Note: WIFI function requires reader support.

First connect the DEMO to the reader, and click the toolbar "Tools" - "WIFI" to open the WIFI interface, e.g. image 5-20. The WIFI module is turned off by default.

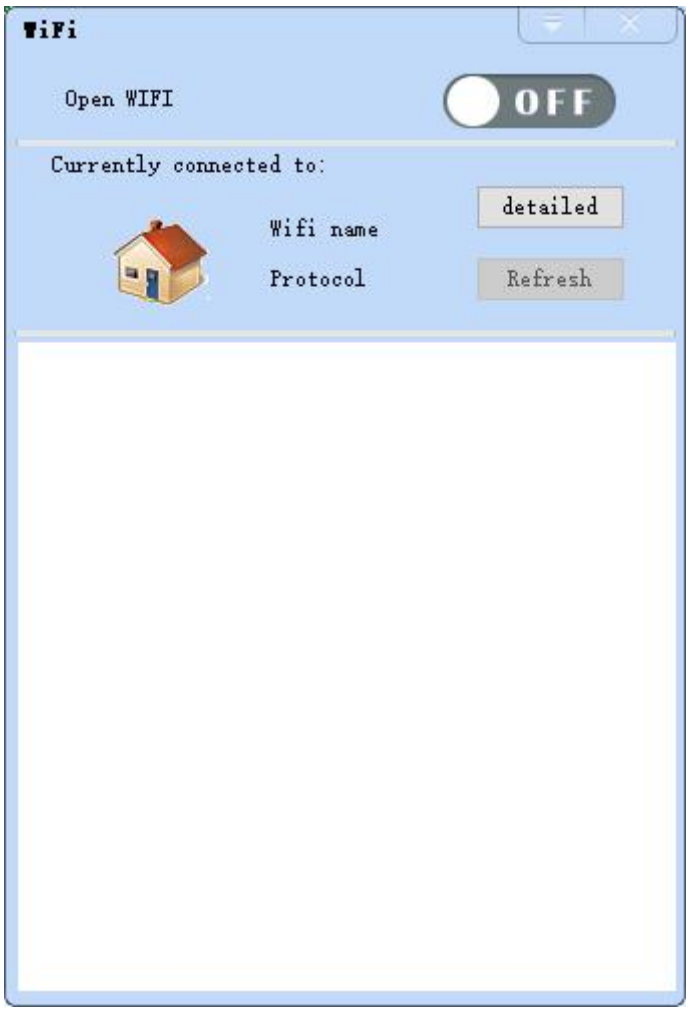

Image5-20

5.9.1 Set the IP address of WiFi module

Firstly need set the WIFI module IP to the same network segment of the pending access WiFi hotspot. Click “detailed”of the WIFI interface to set the WIFI module IP, as shown in image 5-21.

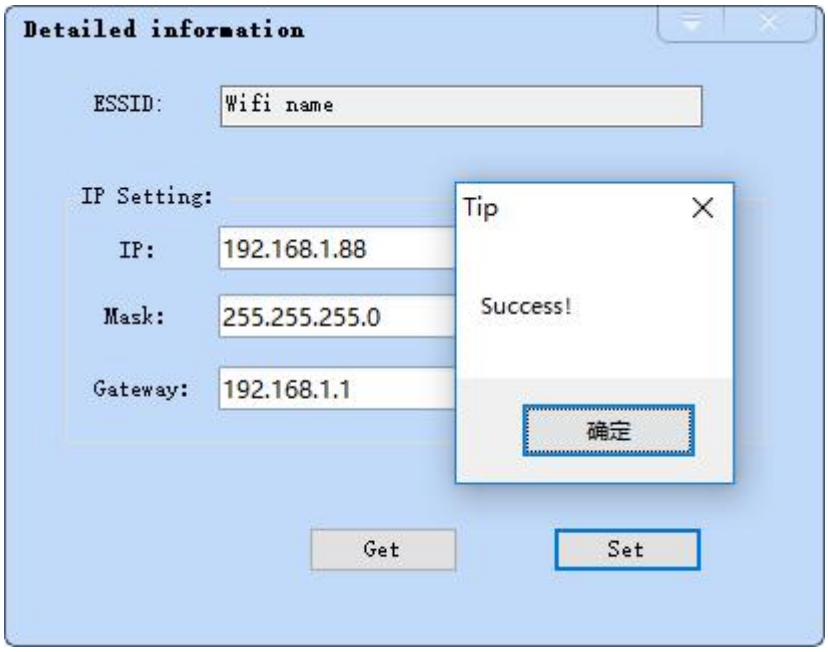

Image5-21

5.9.2 Turn on WiFi module

Click 

at the WIFI interface to open the WIFI module. After opened, WIFI module will search the connectable hotspot automatically, as shown in image 5-22 and 5-23

Image5-22

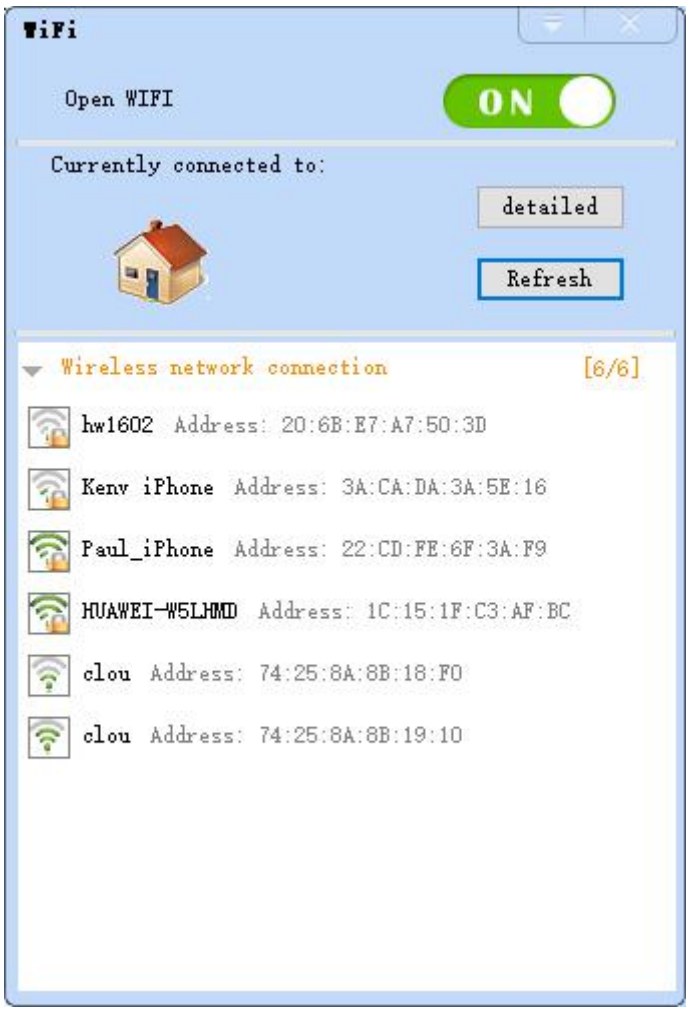

Image5-23

5.9.3 Connect WIFI hotspot

In the WIFI interface hotspot list, find the WIFI hotspot to be accessed, double-click, if no password, will be directly connected; if need a password, open the interface to input security key. Input the password, confirm, then connected to the hotspot., See image 5-24,5-25.

Image5-24

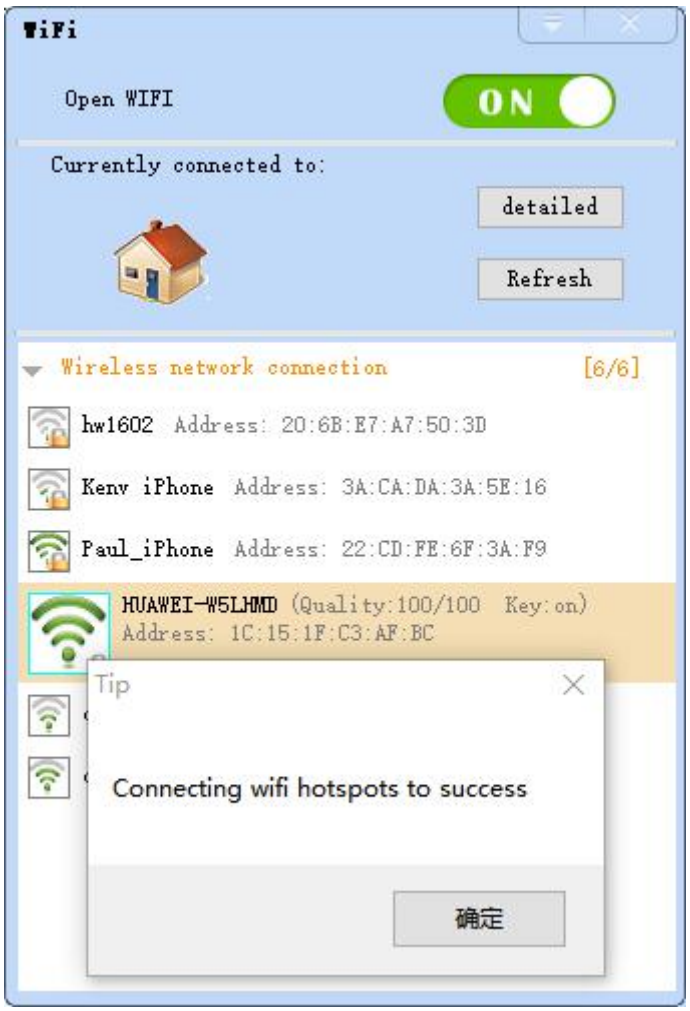

Image5-25

After the hotspot is successfully connected, the "Currently connected to:" will display the currently connected WIFI hotspot name, See image 5-26

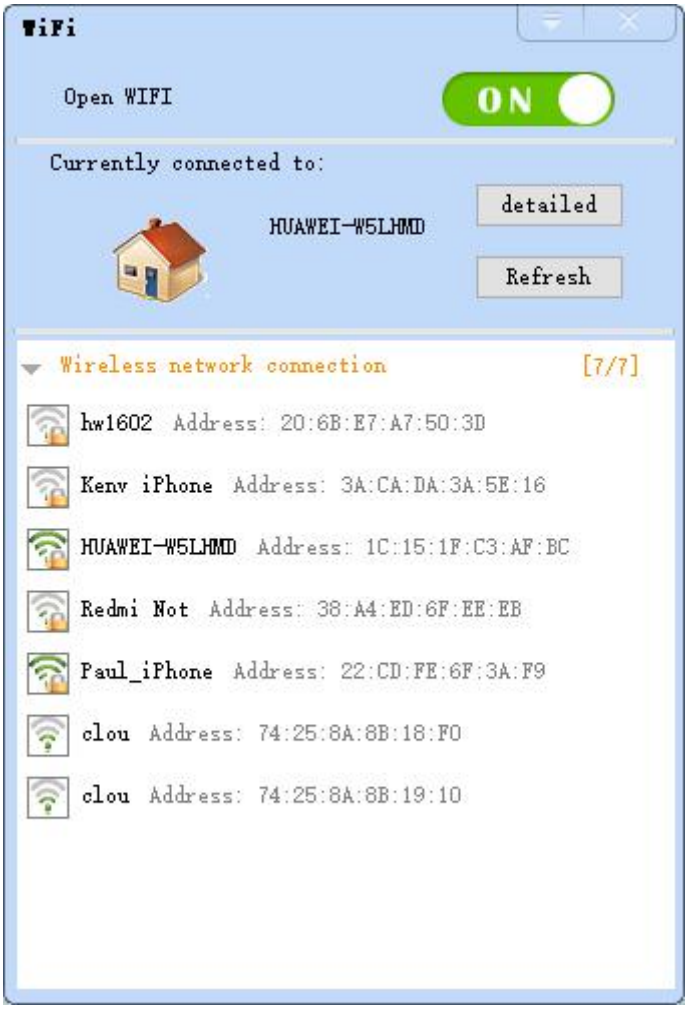
WiFi
Open WIFI
ON
Currently connected to:
HUAWEI-W5LHMD
detailed
Refresh
Wireless network connection
[7/7]
hw1602 Address: 20:6B:E7:A7:50:3D
Kenv iPhone Address: 3A:CA:DA:3A:5E:16
HUAWEI-W5LHMD Address: 1C:15:1F:C3:AF:BC
Redmi Not Address: 38:A4:ED:6F:EE:EB
Paul_iPhone Address: 22:CD:FE:6F:3A:F9
clou Address: 74:25:8A:8B:18:F0
clou Address: 74:25:8A:8B:19:10

Image5-26