RFID Demo
Operation Manual For Android

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V0.8.0.0

Contents

1. Demo Instruction 4
2. Demo Applicating Environment 4
   2.1. Software Environment 4
   2.2. Check Communication 4
3. Demo Operation 5
   3.1. Connect Reader 5
      3.1.1. TCP Client Connection 6
      3.1.2. TCP Server Monitoring 7
      3.1.3. Android Rs232 Connection 8
      3.1.4. Android Rs485 Connection 9
      3.1.5. Disconnection 9
   3.2. Data Display Area 9
      3.2.1. Read 10
      3.2.2. Stop Reading 11
      3.2.3. Clear 11
      3.2.4. Quick Setting 12
   3.3. Write Data 12
      3.3.1. Write EPC Data 12
      3.3.2. Write Data of User Area 13
   3.4. RFID Configuration 13
      3.4.1. Baseband Parameter Configuration 14
      3.4.2. Antenna Power Configuration 15
      3.4.3. Working Frequency 15
      3.4.4. Tag Filtering 15
      3.4.5. Automatic Idleness Configuration 15
   3.5. Device Configuration 16
      3.5.1. COM Parameter Configuration 16
      3.5.2. RS485 Parameter Configuration 16
      3.5.3. Ethernet Parameter Configuration 17
      3.5.4. Reader Time Configuration 17
      3.5.5. MAC for the Reader 17
      3.5.6. TCP Server/ Client 17
   3.6. GPIO Configuration 17
      3.6.1. GPO Configuration 18
      3.6.2. GPI State 18
      3.6.3. GPI Operation Configuration 18
      3.6.4. GPI Reporting Log 19
      3.6.5. Buzzer Control 19
   3.7. Upgrade 20
      3.7.1. Baseband Upgrade 20
      3.7.2. APP Upgrade 20
   3.8. Network Device Searching 21

3.9. WIFI Configuration 22
3.10. EAS Alarm Configuration 22
3.11. Hopping Frequency Management 23
3.12. Restart 24
3.13. Factory Reset 25
3.14. Custom Command 25
3.15. Device Info 26
3.15.1. Info of the Sent Command 27

1. Demo Instruction

The Demo mainly carries out the functions of system control, parameter setting and query, tag reading and writing, and data display, etc.

Before using the demo, please check whether the reader hardware connection is all done, and pay attention to the following aspects:

1. The network parameters are configured correctly (connect WiFi if necessary);
2. The antenna ports that need to be used are connected to antennas;
3. The reader is power-on(the buzzer is ringing).

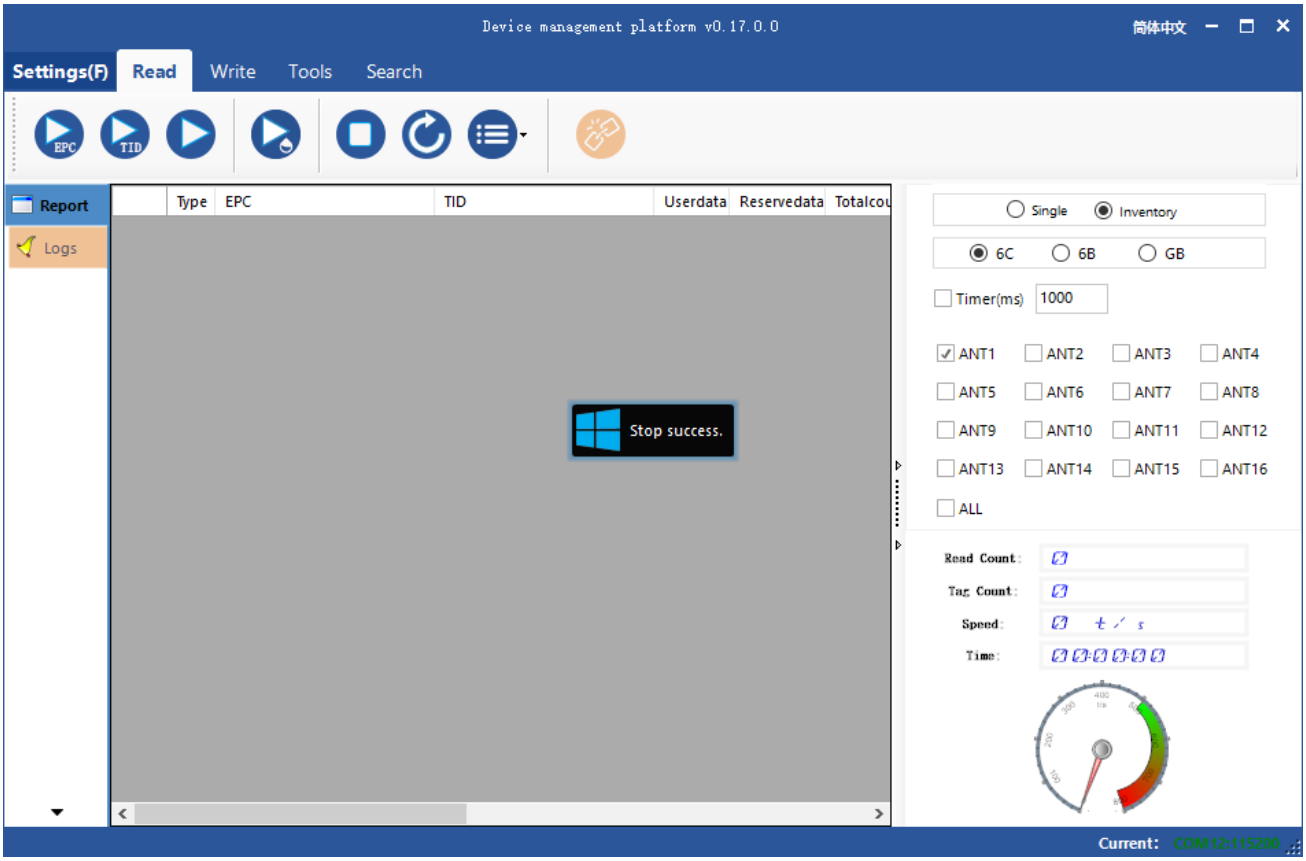
2. Demo Applicating Environment

2.1. Software Environment

Android 4.0 or higher versions.

2.2. Check Communication

Connects the interface board, use a null modem cable to connect the PC port, open the Demo on the PC terminal, and choose RS232 connection. Click stop button when the connection succeed. The module communicates normally after “ stop success”.



3. Demo Operation

Only TCP 127.0.0.1:8160 for connection in Android internal development. Similar to all hardwares, AndroidRs232 and AndroidRs485 connection is for external devices . UHF service is for only one connection.

3.1. Connect Reader

All read, write and configuration functions can only be operated after a successful connection.

3.1.1. TCP Client Connection

Software starts default TCP and connect 127.0.0.1. The failed connection information will be shown under the “connection failed”. Click “device connection” then connecting modes can be chosen again as the following Figure 1-1 shows(pls make sure the internet connections is working).

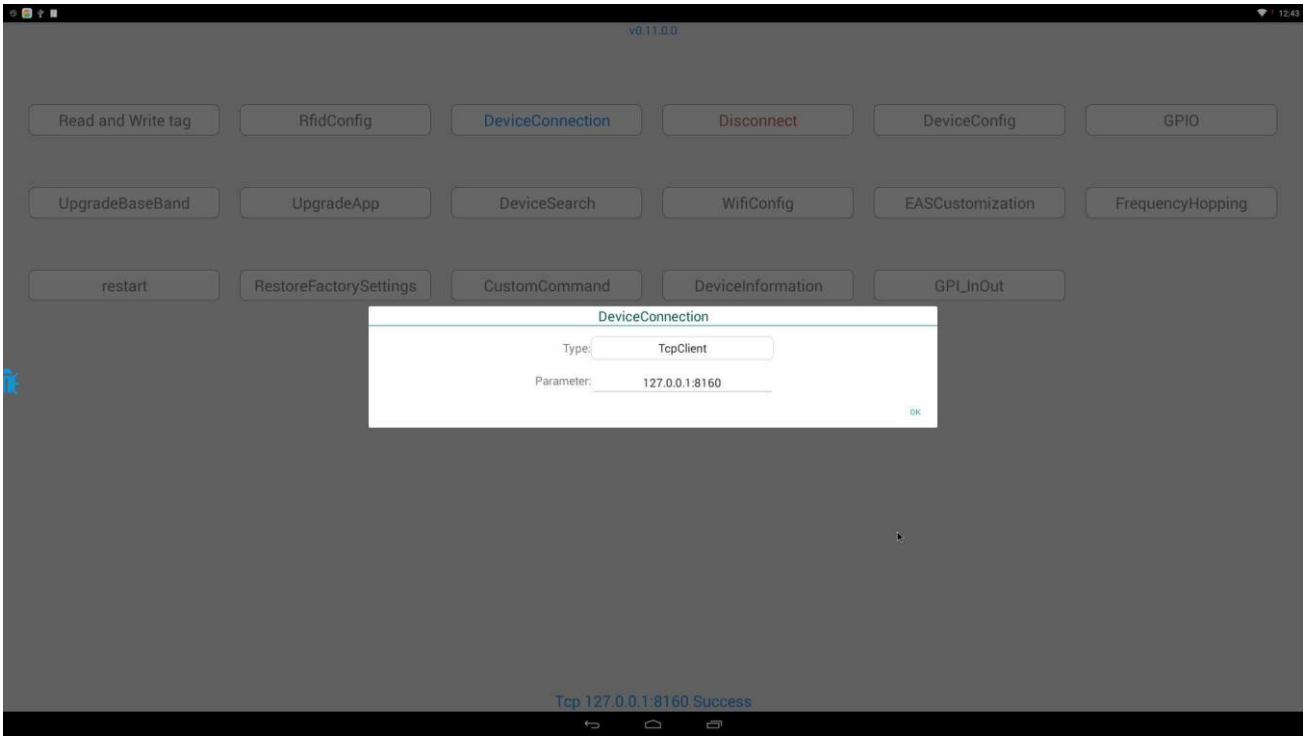
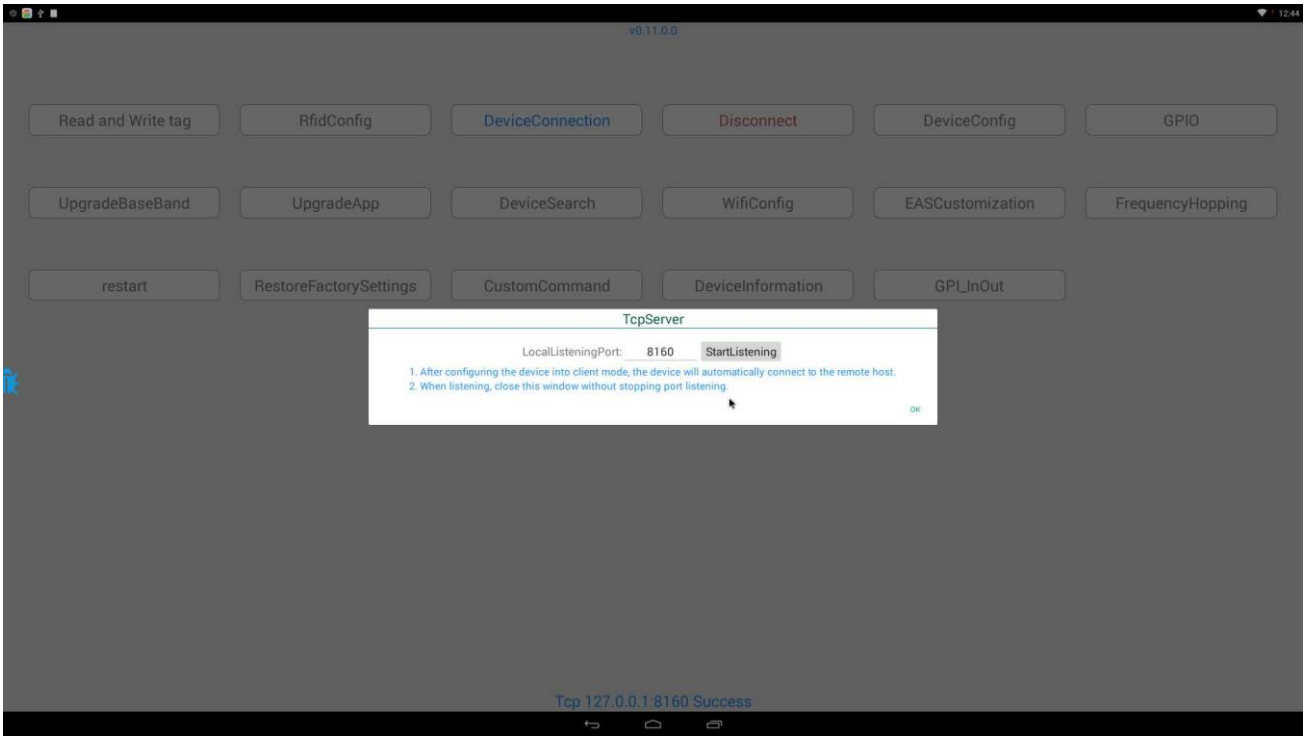


Figure 1-1 TCP Client Connection

3.1.2. TCP Server Monitoring

On the premise of configuring itself as a client mode, the client mode IP and port can fill in itself (which is monitoring itself). To monitor other devices, they must configure to be the client mode, and the filled-in IP and port parameters must be IP and port monitored by a device.



3.1.3. Android Rs232 Connection

Please choose this connection when using android COM. As the below figure shows, the connection is for external module.

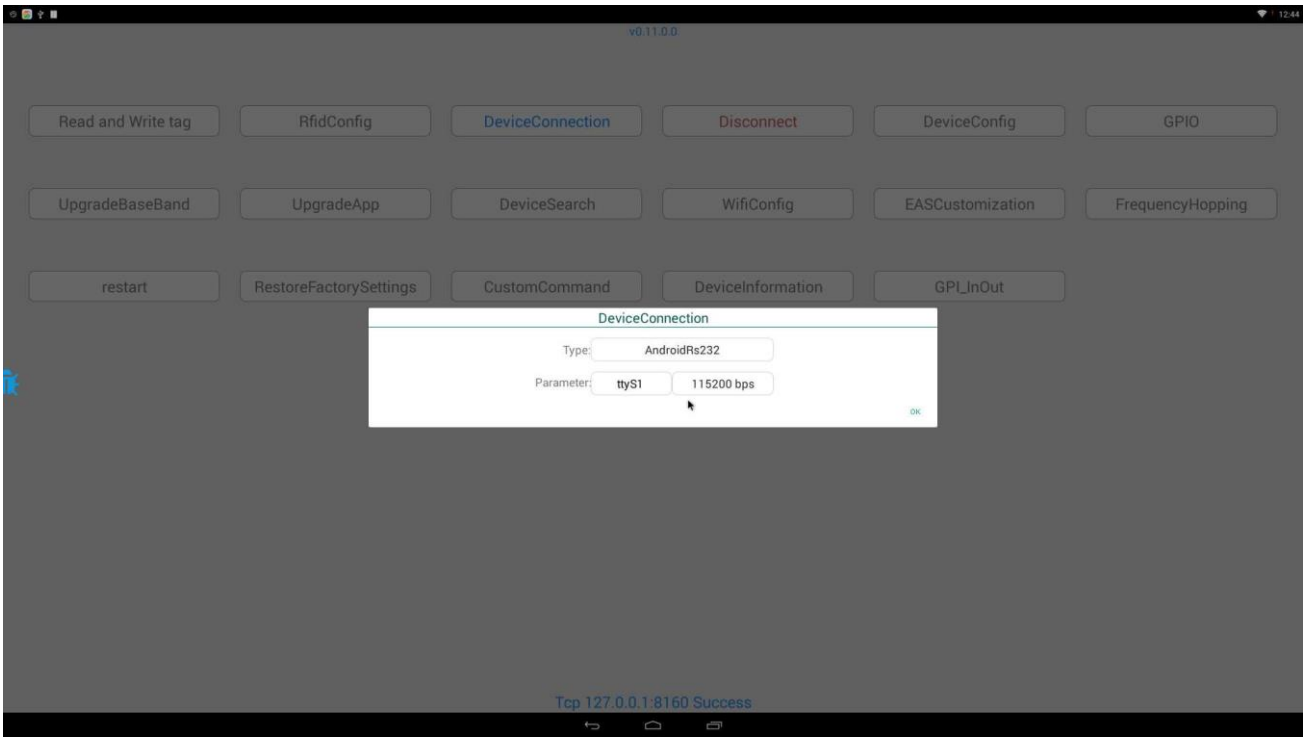
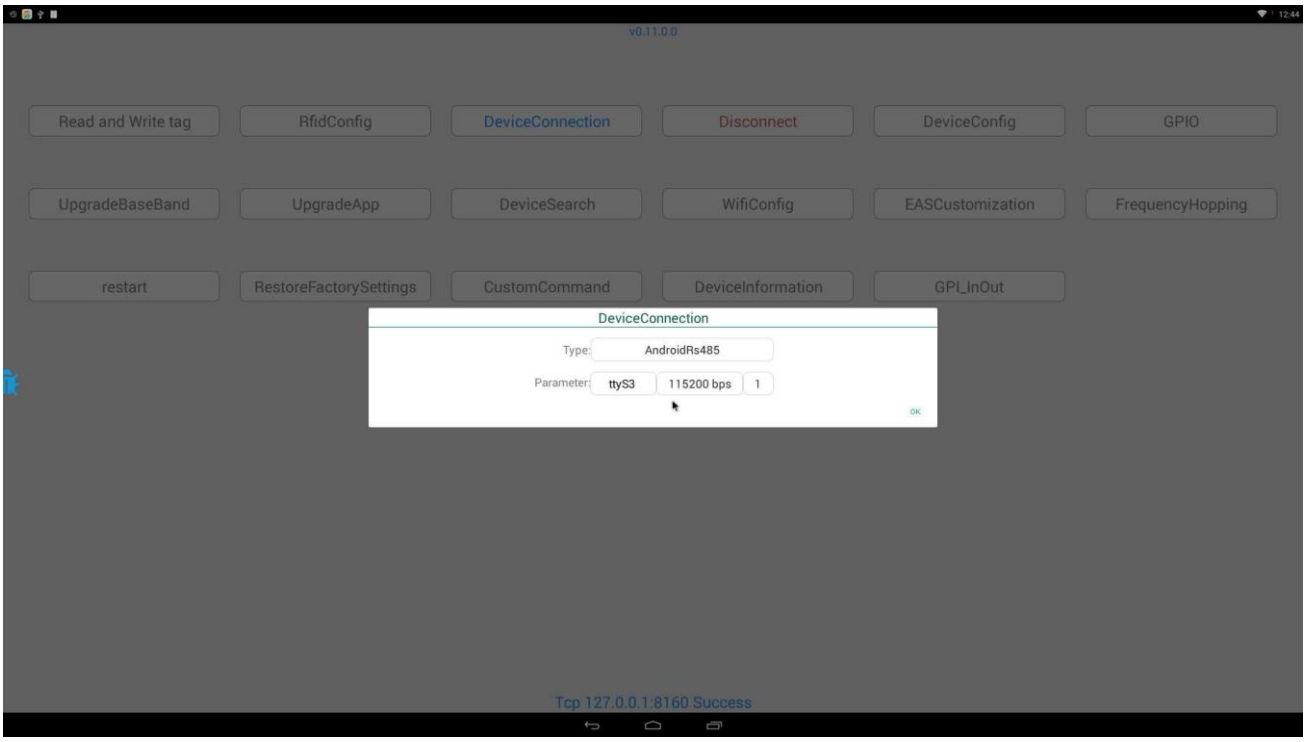


Figure 1-2 AndroidRs232 Connection

3.1.4. Android Rs485 Connection

Please choose this connection when using android Rs485. As the below figure shows, the connection is for external module.



3.1.5. Disconnection

Click the disconnect button on the main interface to disconnect the device, and you can re-select connecting.

3.2. Data Display Area

Click the Read button, and the data display area will be like which being shown in Figure 1-3.

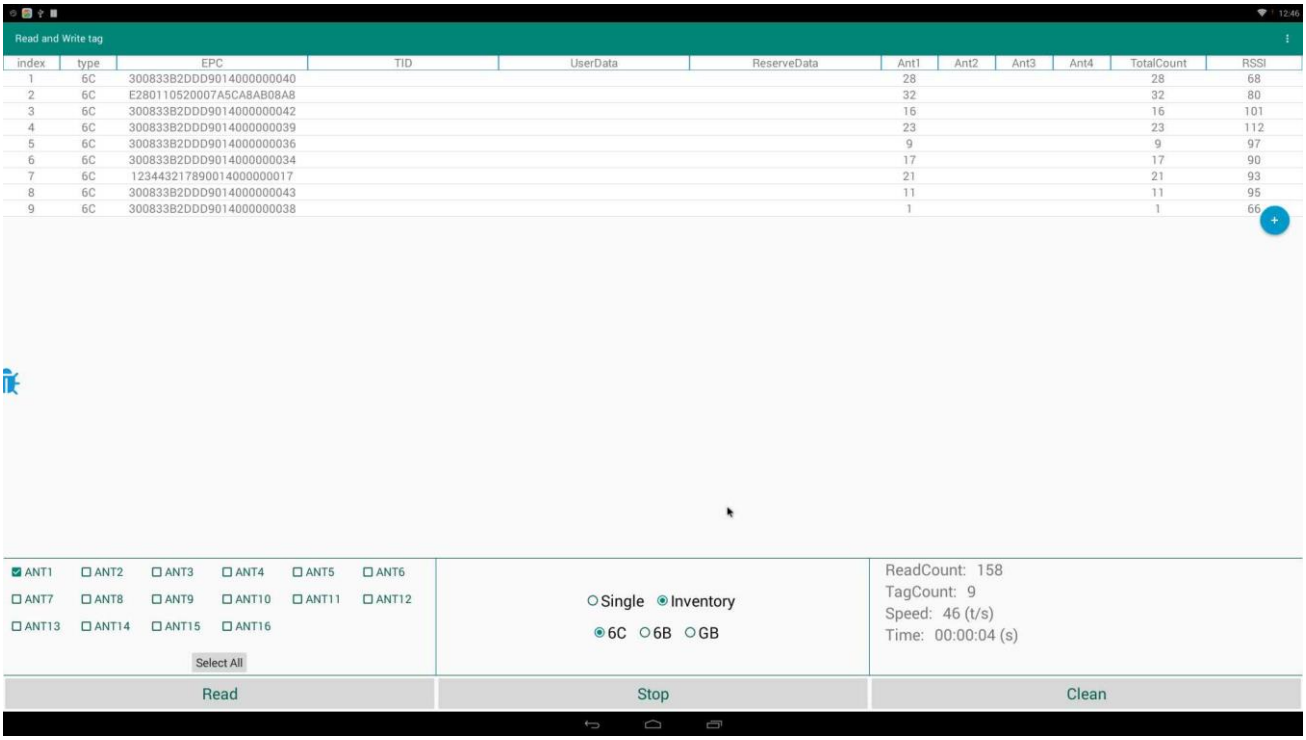


Figure 1-3 Parameter Implications of Data Display Area

Index: tag index;

Type: type of tag:6C and 6B;

EPC:EPC data of the tag which is readable and writable;

TID:TID data of the tag, which is a unique identification and readable only;

UserData: Data of the user area;

ReserveData: data of the reserved data;

Ant1: the number of times each tag is read by this antenna(Ant2...et cetera);

TotalCount: Total number of the times the tag read;

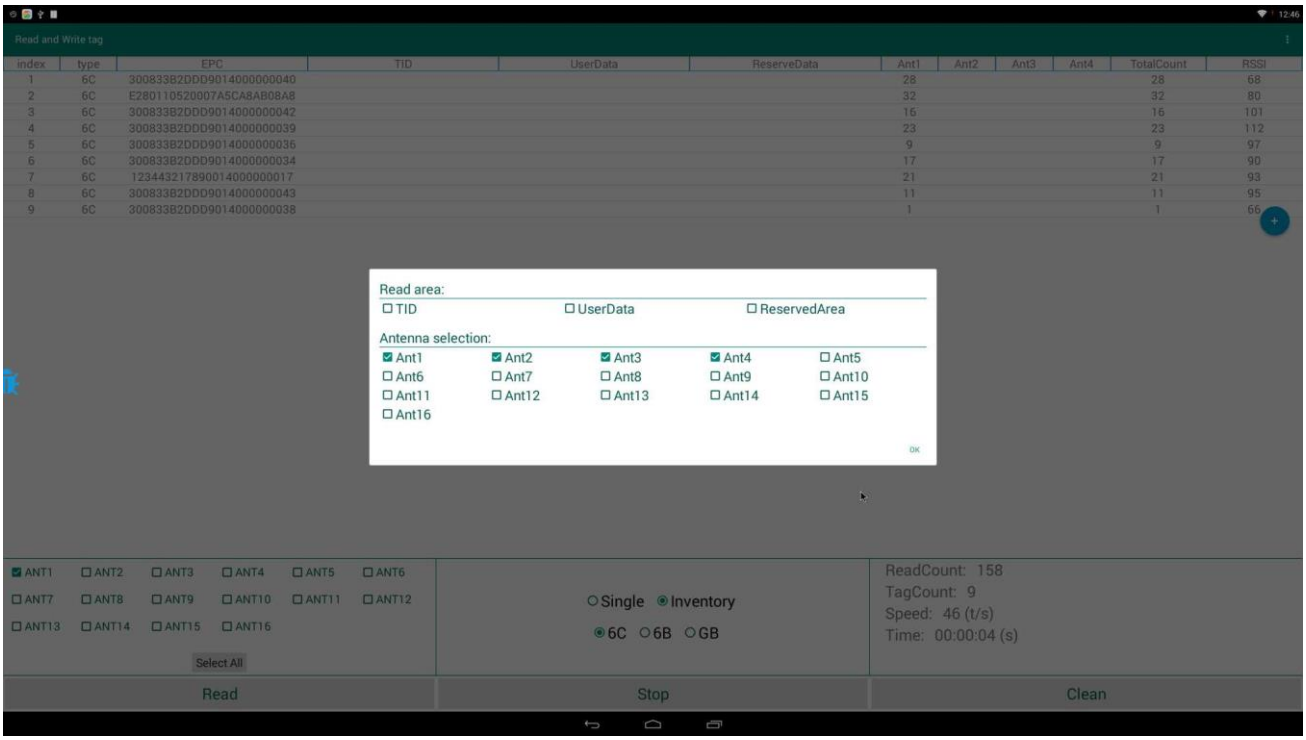
RSSI: signal strength.

3.2.1. Read

Click Read (Read TID and EPC by default. Click the popup to change it.)The data

display area displays the EPC data and TID data being read. TID and EPC are displayed in hexadecimal strings, and the length is in words(1word = 2bytes = 4hexadecimal character). The default length of TID is 6 words.

Click the popup on the header as below figure shows. Select antenna filtering, then the antenna column needed will be displayed. Four columns must be selected. And click OK to close the popup.



3.2.2. Stop Reading

Click Stop button to stop all reading operations.

3.2.3. Clear

Click Clear to stop reading and reset the interface display.

3.2.4. Quick Setting

Click circle buttons on the right corner on the top to configure singe ag mode and multiple tag mode.

3.3. Write Data

3.3.1. Write EPC Data

Select the suspension button in the main interface -> click the first button popup(from bottom to top) then another popups come out as figure 1-4 shows:

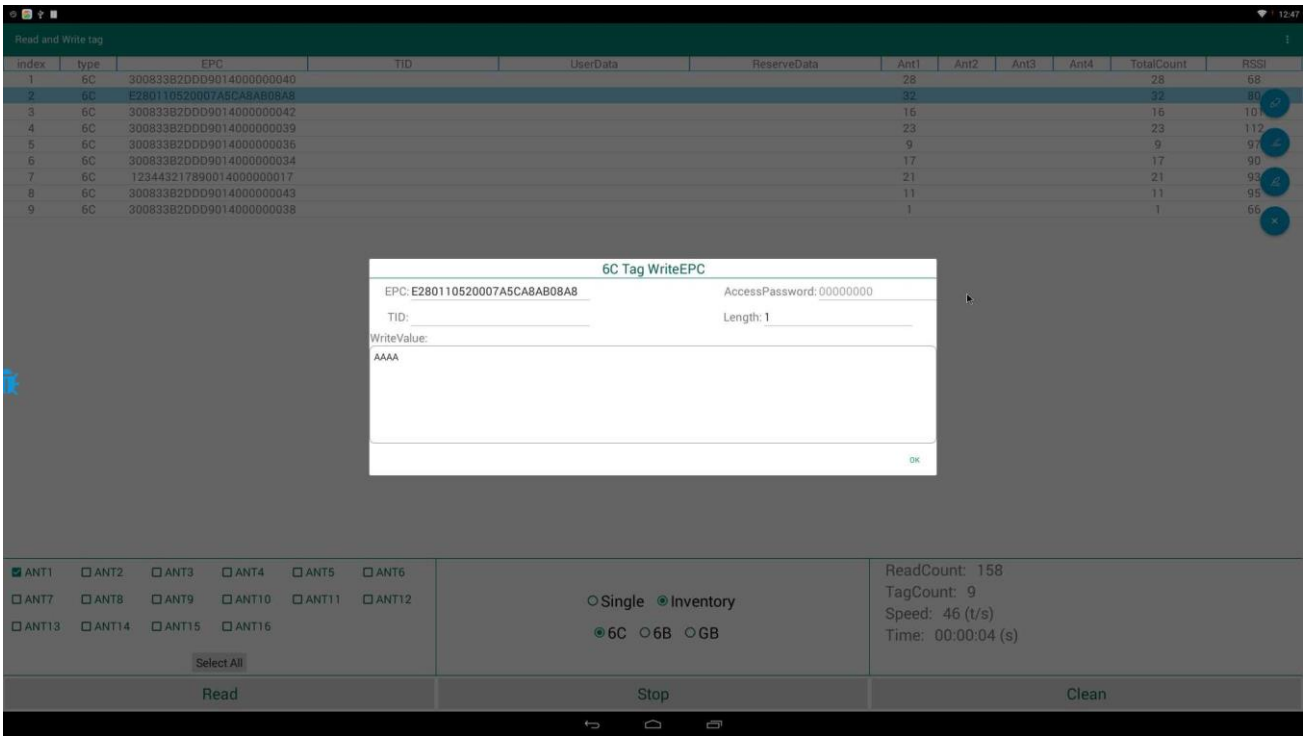


Figure 1-4 write EPC

Select data (with TID) of one read tag, fill in EPC information (Hexadecimal string) , then click OK.

3.3.2. Write Data of User Area

Select the suspension button in the main interface -> click the second button popup then another popup will come out as figure 1-5 shows:

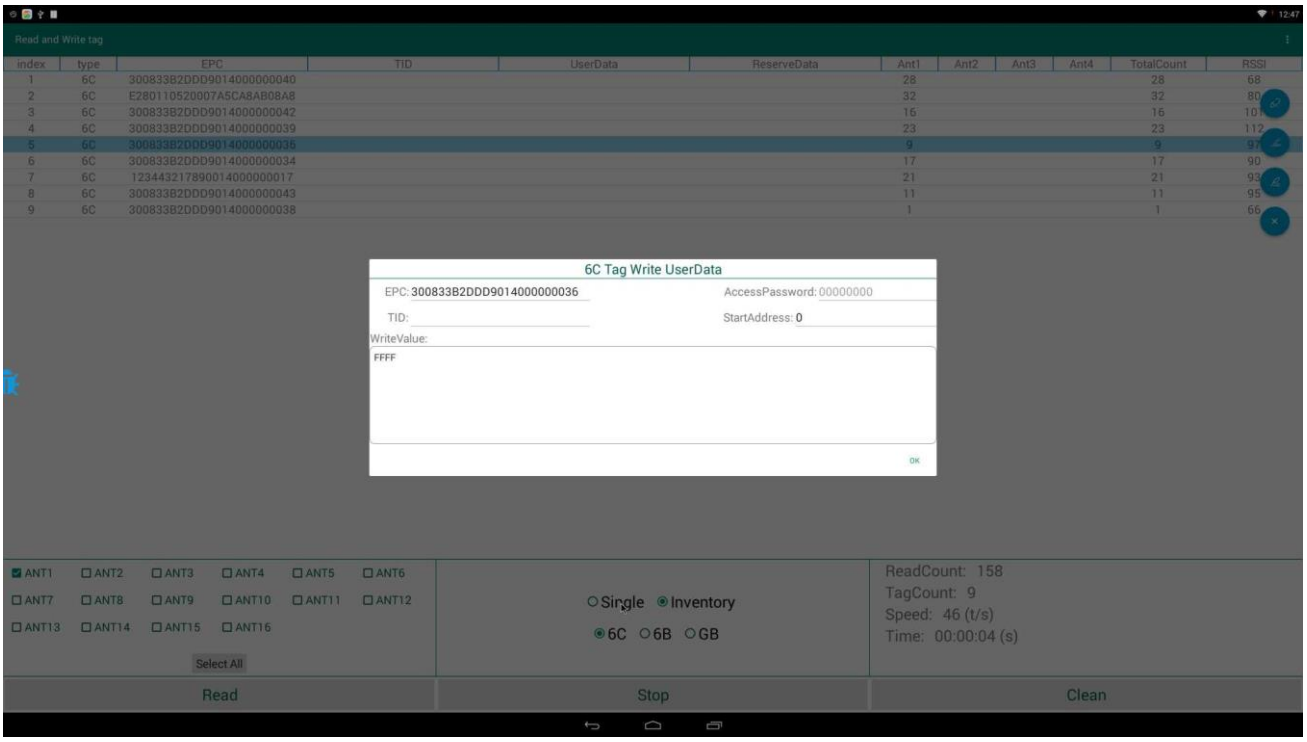


Figure 1-5 Write user area data

Select data(with TID) of one read tag, fill in user data(Hexadecimal string), then click OK.

3.4. RFID Configuration

Select RFID configuration on the main interface and enter RFID configuration interface as figure 1-6 shows:

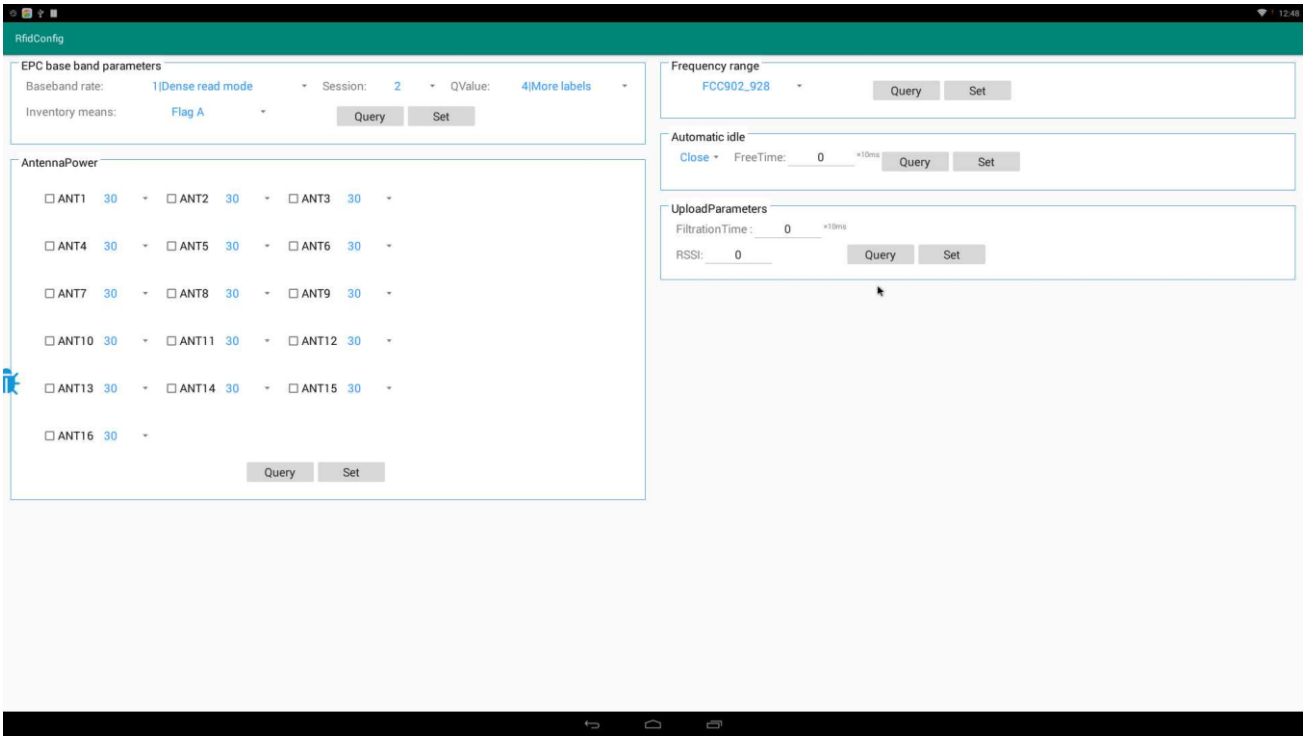


Figure 1-6 RFID configuration

3.4.1. Baseband Parameter Configuration

R/W effect changes with the changing of the baseband parameter configuration(the configuration can be customized according to the real application, but under the guidance of our engineer).

There are 6 choices for EPC baseband rate: Tair=25us, FM0, LHF=40KHz; dense reading mode; Tair=25us, Miller4, LHF=300KHz; fast reading mode; Tari=25us, Miller4, LHF=320KHz；255/AUTO.

Four choices for Session: 0; 1; 2; 3.

16 choices for Q value: 0/single tag; 1; 2; 3; 4/multiple tag; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15.

3 choices for tag searching: A side inventory-taking; B side inventory-taking; A|B

double sides inventory-taking.

3.4.2. Antenna Power Configuration

Select corresponding antenna port(connected with an antenna),and select corresponding power on the power list. Then click Setting, the prompt for successful configuration will pop up.

3.4.3. Working Frequency

It is used for configuration for the current working frequency of the reader.

3.4.4. Tag Filtering

Filtering Time: means during a reading instruction execution period, the same tag content can only be uploaded once in repeated tag filtering time, 0~65535, the time unit is 10ms.

RSSI threshold value: give up uploading and discard when the RSSI value of the tag is lower than the threshold value.

3.4.5. Automatic Idleness Configuration

Automatic idle mode means: when in constantly reading, the reader will enter idle state automatically for power saving for a period if no tag is read for 3 round constantly. When the idle state is over time, the reader will start reading again.

3.5. Device Configuration

Select device configuration on the main interface of the Demo, and enter device configuration interface as figure 1-7 shows:

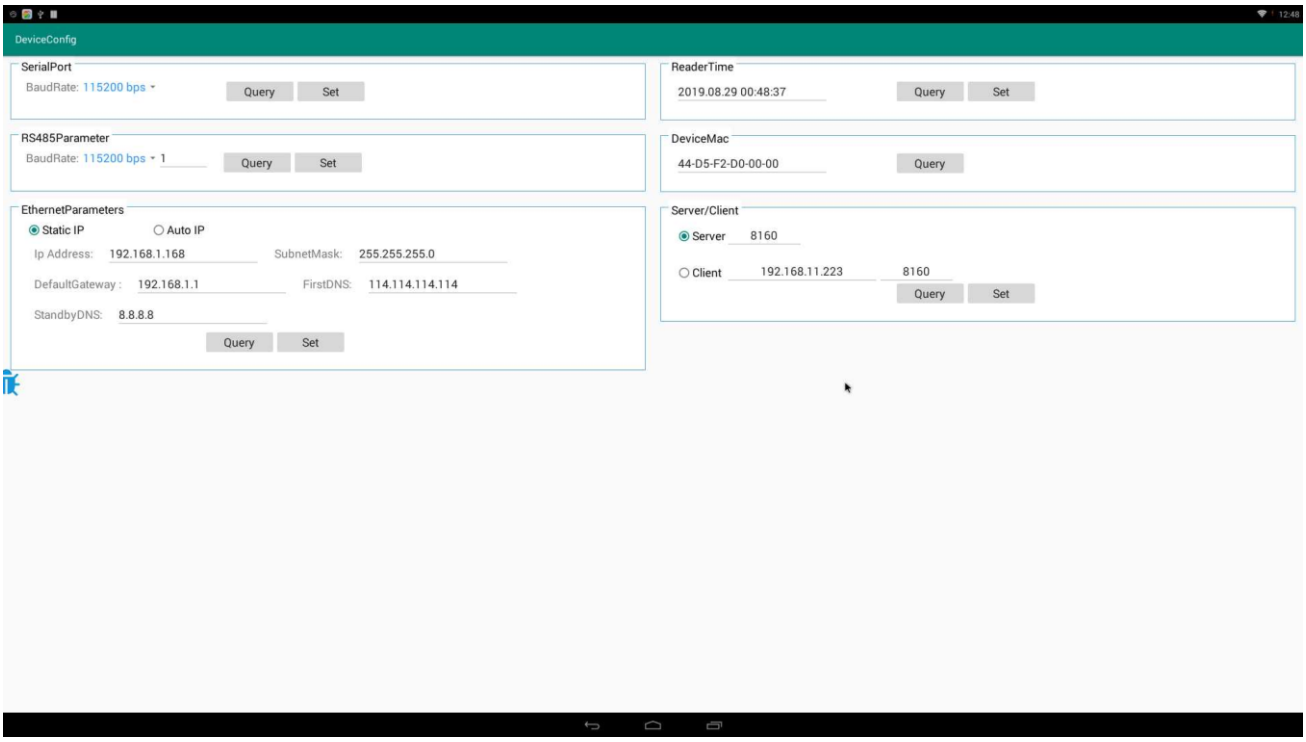


Figure 1-7 device configuration

3.5.1. COM Parameter Configuration

It is used for configuration for the COM communication baud rate of the reader, which is defaulted to be 115200 bps.

3.5.2. RS485 Parameter Configuration

It is used for the configuration for the RS485 communication baud rate and device address of the reader.

3.5.3. Ethernet Parameter Configuration

It is used for the configuration for the static IP address of the reader.

3.5.4. Reader Time Configuration

It is used for the configuration and acquiring the time of the reader(double click the Edit Box to assign the current time automatically).

3.5.5. MAC for the Reader

It is used for acquiring the MAC address of the reader.

3.5.6. TCP Server/ Client

It is used for the configuration for the sever mode and client mode. The default one is server mode. If TCP server for monitoring is needed, please configure client mode. IP and the ports can be itself or IP and port of other devices for external connection. Conversely, if other devices configure the IP and ports of the reader, the reader can monitor the other devices. After configuration of client mode, the TCP connection will not be workable(it will be workable if server mode is configured), and communication, either. And the communication need to be monitored by TCP server.

3.6. GPIO Configuration

Select GPIO configuration on the main interface of the demo and enter the GPIO configuration interface as figure 1-8 shows:

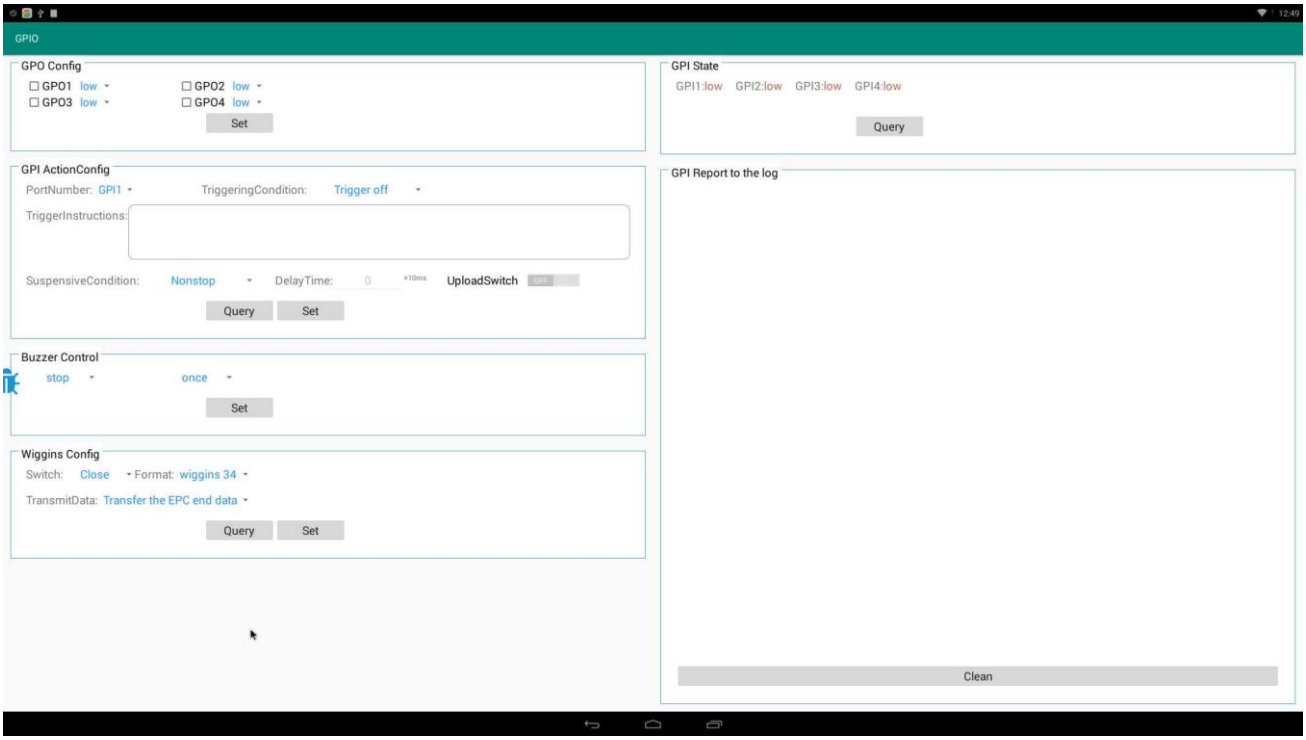


Figure 1-8 GPIO configuration

3.6.1. GPO Configuration

It is used for the configuration for electrical level of the GPIO outputting port. A beep will be heard when switching the level.

3.6.2. GPI State

It is used to acquire the electrical level of the GPIO inputting port. High means high electrical level and low means low electrical level.

3.6.3. GPI Operation Configuration

It is used for the configuration for the triggering parameter of the GPI inputting port. Delay time will work only if the stopping condition is Delay Stop. The electrical level uploading switch is configurable only if the stopping condition is Non Stop.

3.6.4. GPI Reporting Log

It is used for printing the trigger and stop reporting information when GPI is configured successfully (the GPI port index starts from 0).

3.6.5. Buzzer Control

It is used for buzzer controlling to the reader.

3.7. Upgrade

3.7.1. Baseband Upgrade

Select baseband upgrading on the main interface of the demo. And select ".bin " file from the external connected devices . Then click Upgrade button to start. Please do not exit when upgrading, as figure 1-9 shows:

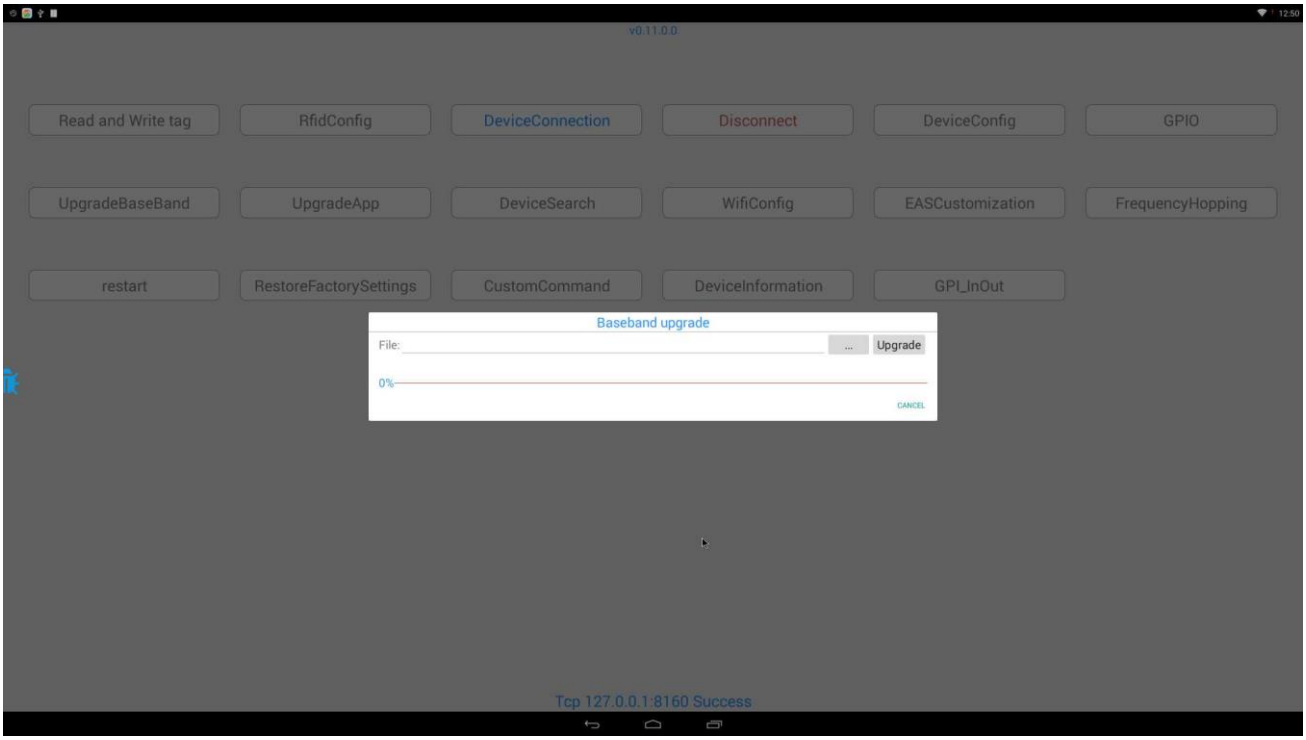


Figure 1-9 baseband upgrading

3.7.2. APP Upgrade

Select the App to be upgraded on the main interface of the Demo. And select " .apk" file from the external connected devices . Then click Upgrade button to start. Please do not exit when upgrading, as figure 1-10 shows:

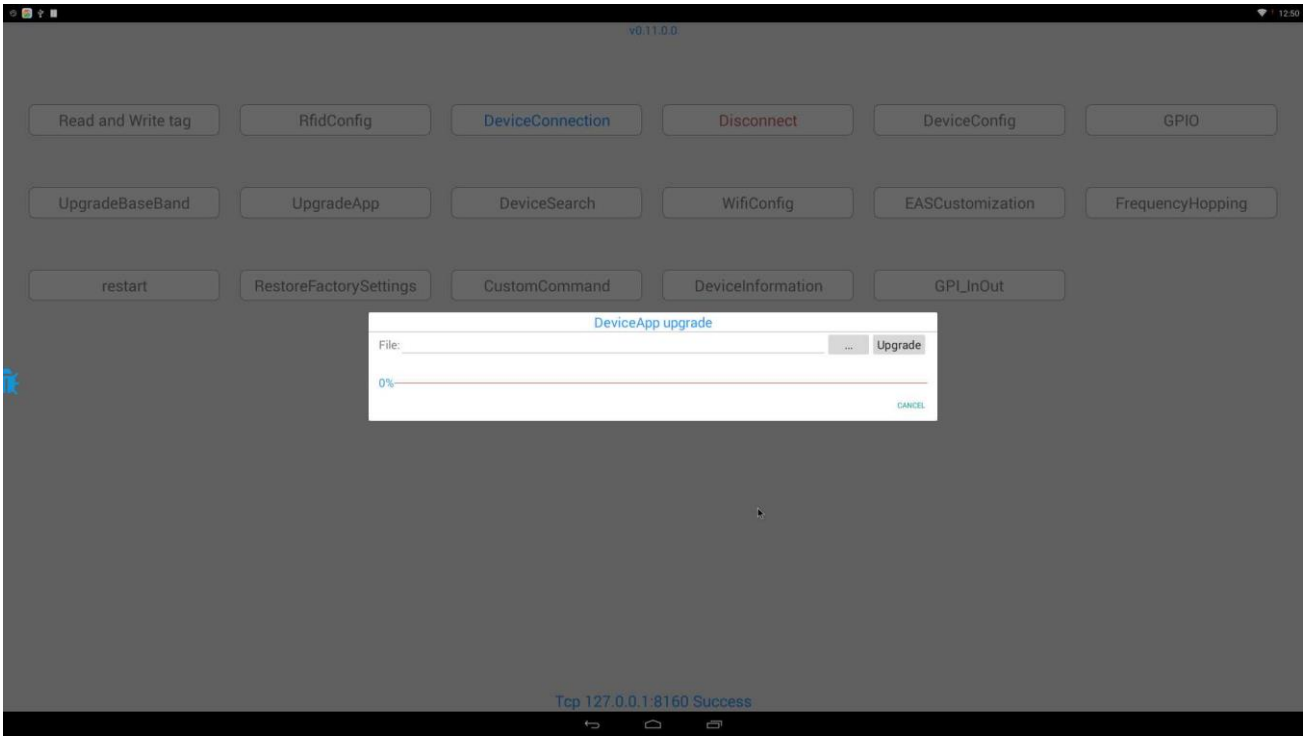
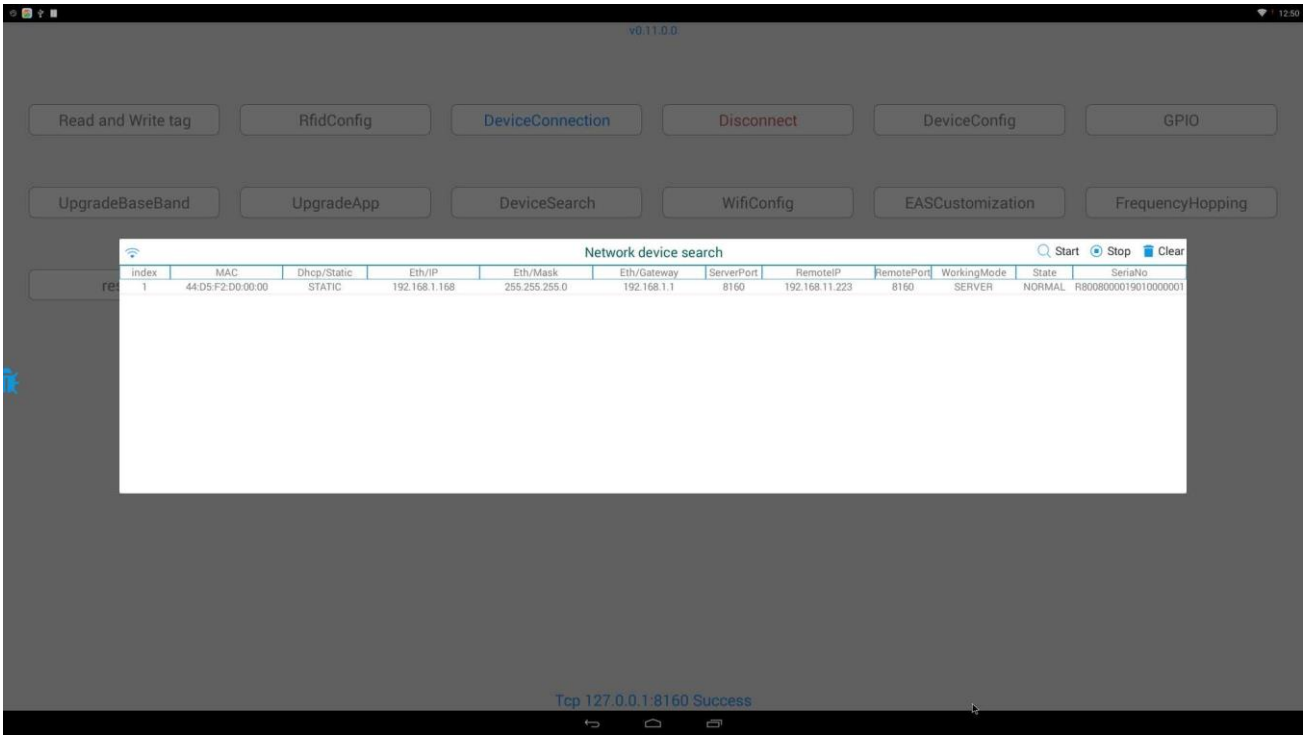


Figure 1-10 App Upgrading

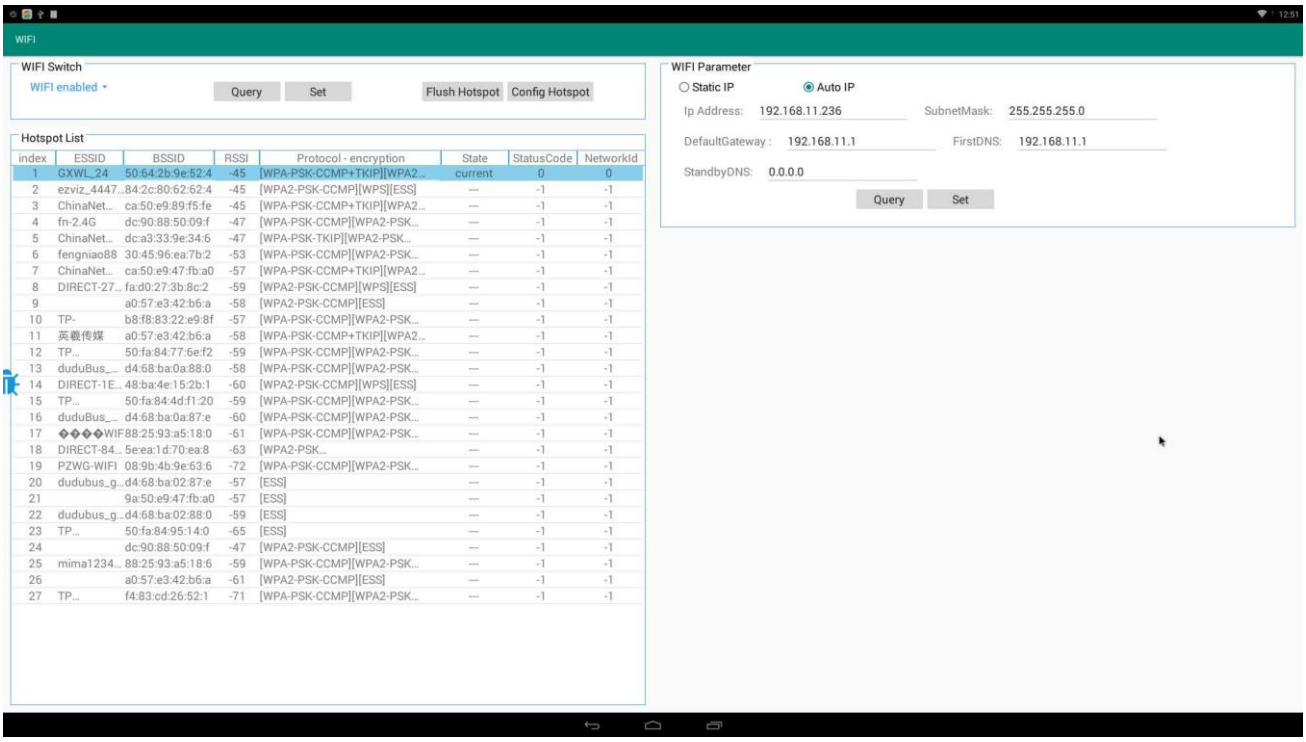
3.8. Network Device Searching

It is used for searching devices under the same gateway. Mac address, network mode, IP, mask, gateway, port, and information of remote host can be seen.



3.9. WIFI Configuration

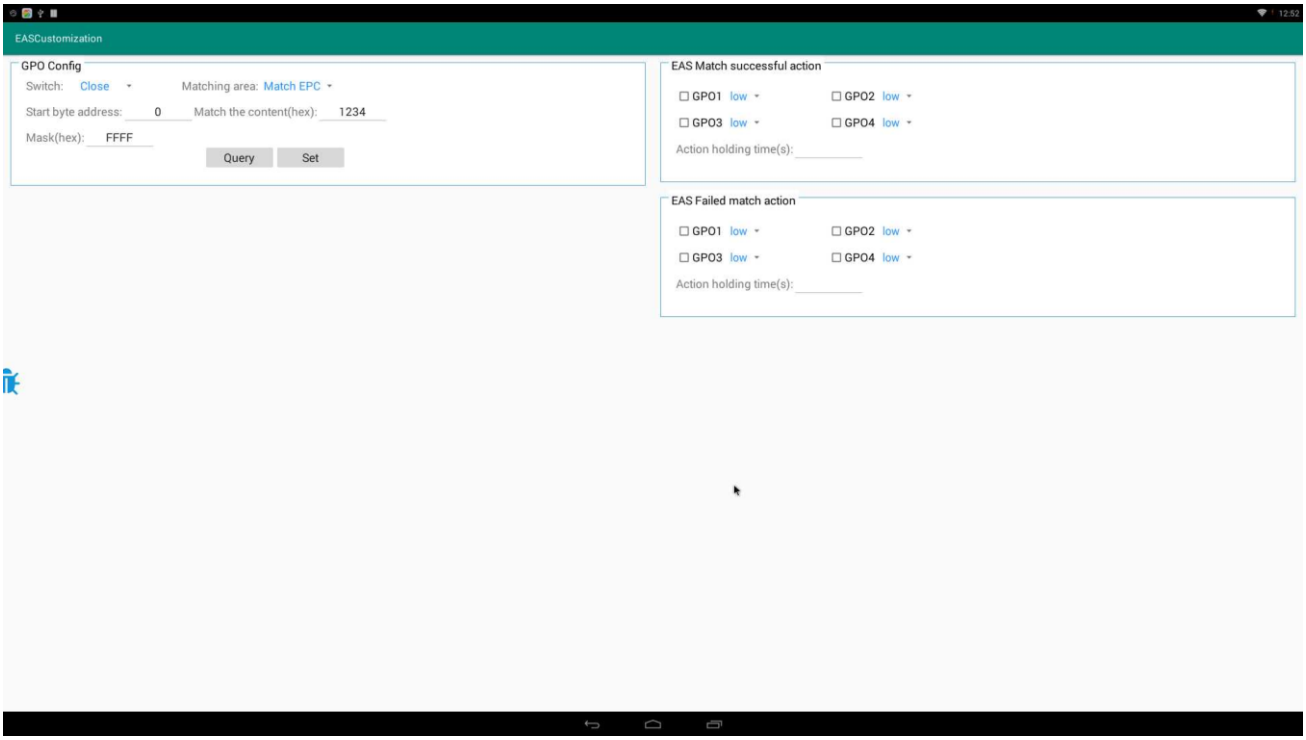
It is used for the configuration for the on state, connection and IP setting for WIFI.



3.10. EAS Alarm Configuration

It is used for the configuration for matching alarm parameters. “matching succeeded operation” will be performed when the tags meet the matching condition is read. And “match failed operation” will be performed when the tags fail to meet the matching condition is read. The matching rules are as below:

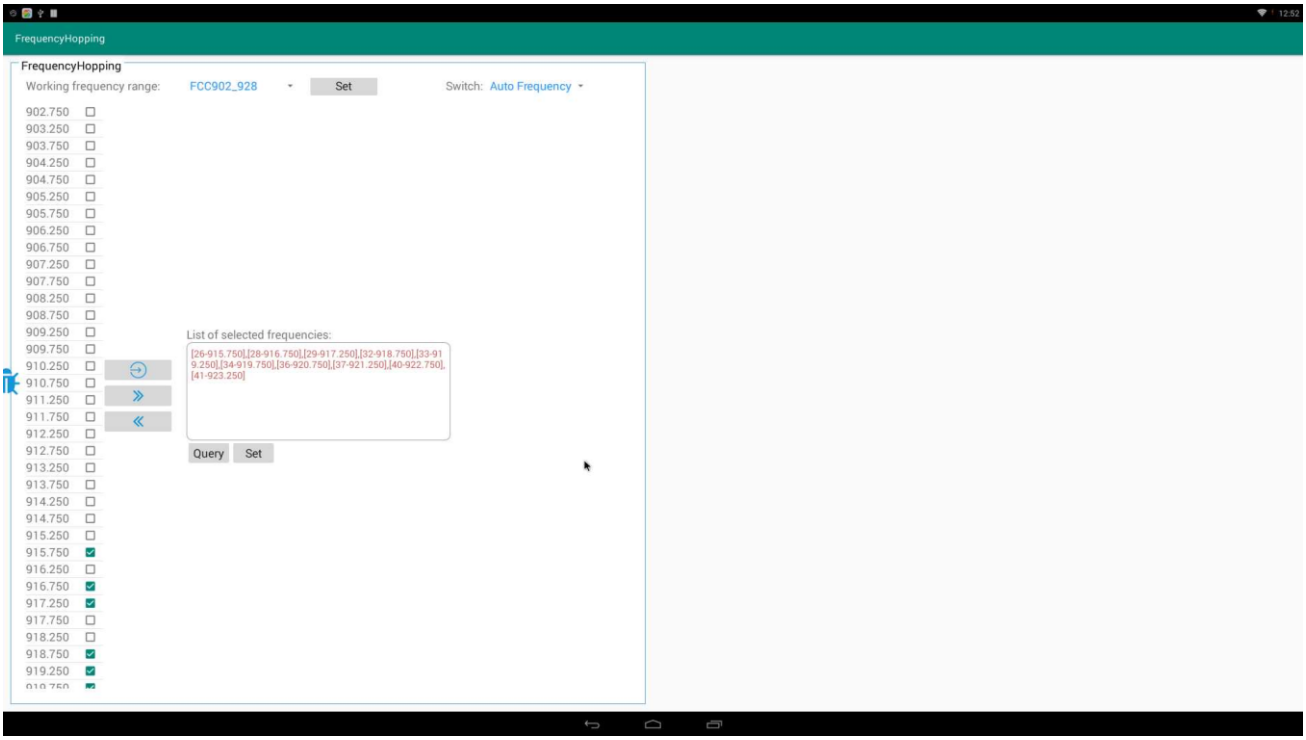
The calculated result of the mask Bitwise AND and zone data to be matched in the tag is A. And the result of the mask Bitwise AND and zone data matched is B. If A is equal to B, then the matching is successfully, and then the EAS match-successfully operation shall be performed. Conversely, the EAS match-failed operation shall be performed.



3.11. Hopping Frequency Management

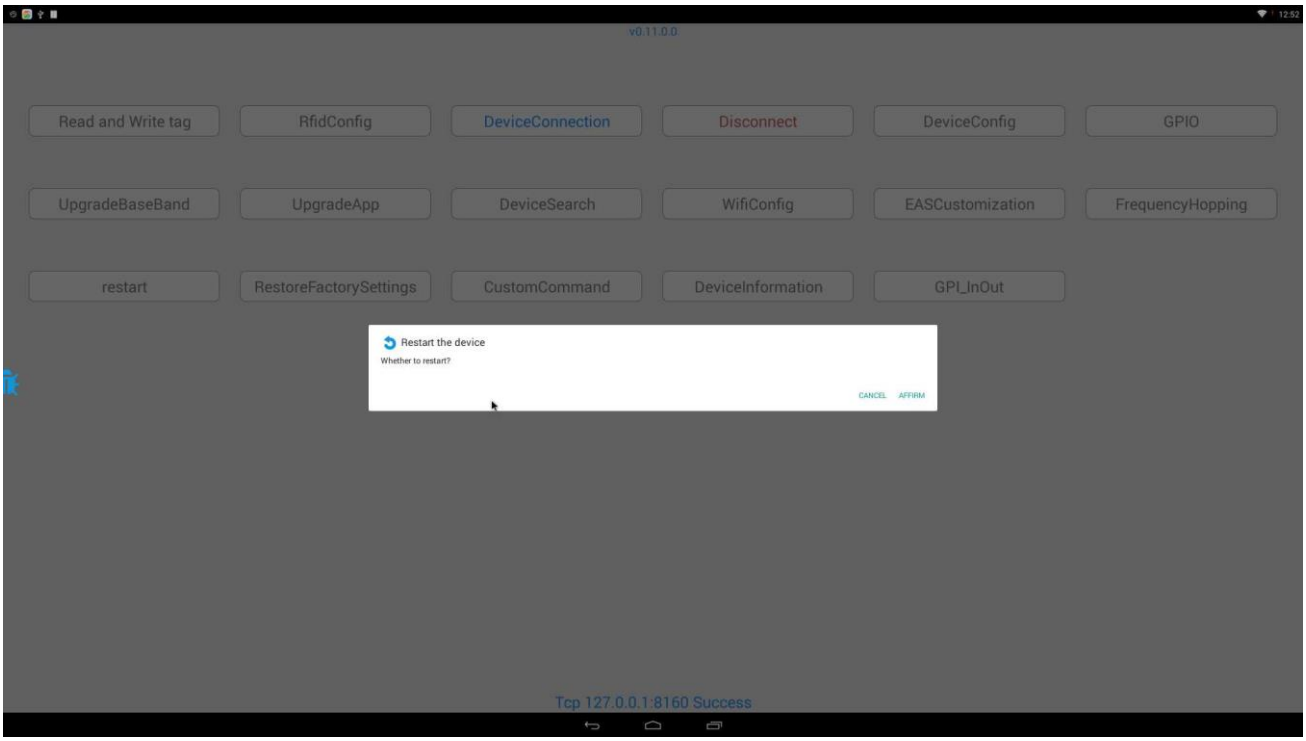
Selecting the corresponding frequency band and the frequency in that band will be automatically displayed. Through selecting frequency(click shortcut button to select all and move them to the right), and moving them to the right border, the hopping frequency switch can be selected and designated automatically. And then click Setting to finish the configuration.

Notes: When doing this setting, the purpose of the automatic operations is to avoid the external signal interference. Normally it is defaulted to be automatically.



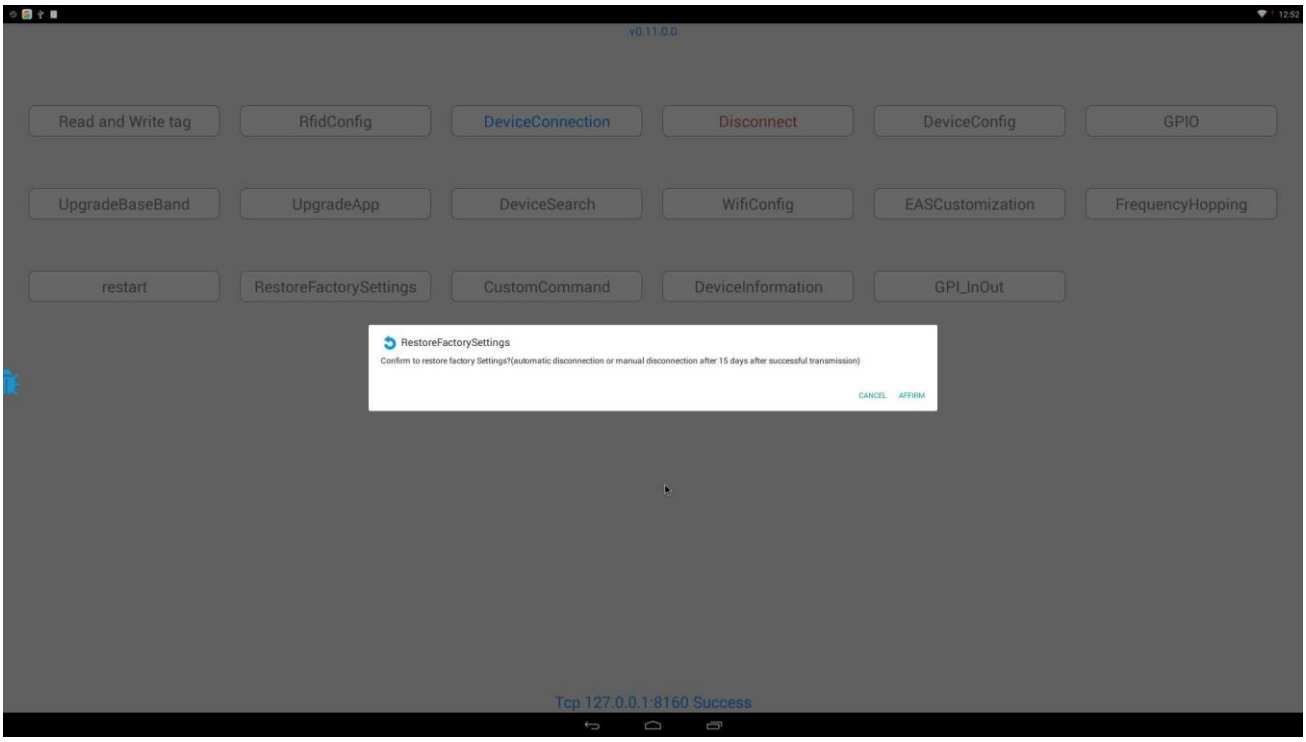
3.12. Restart

Click Restart, the reader will restart when it receives this message. And the restart is finished when the beep from the buzzer is heard.



3.13. Factory Reset

This operation will restore all parameters, including RFID configuration parameters, to factory setting except for system time and MAC address.

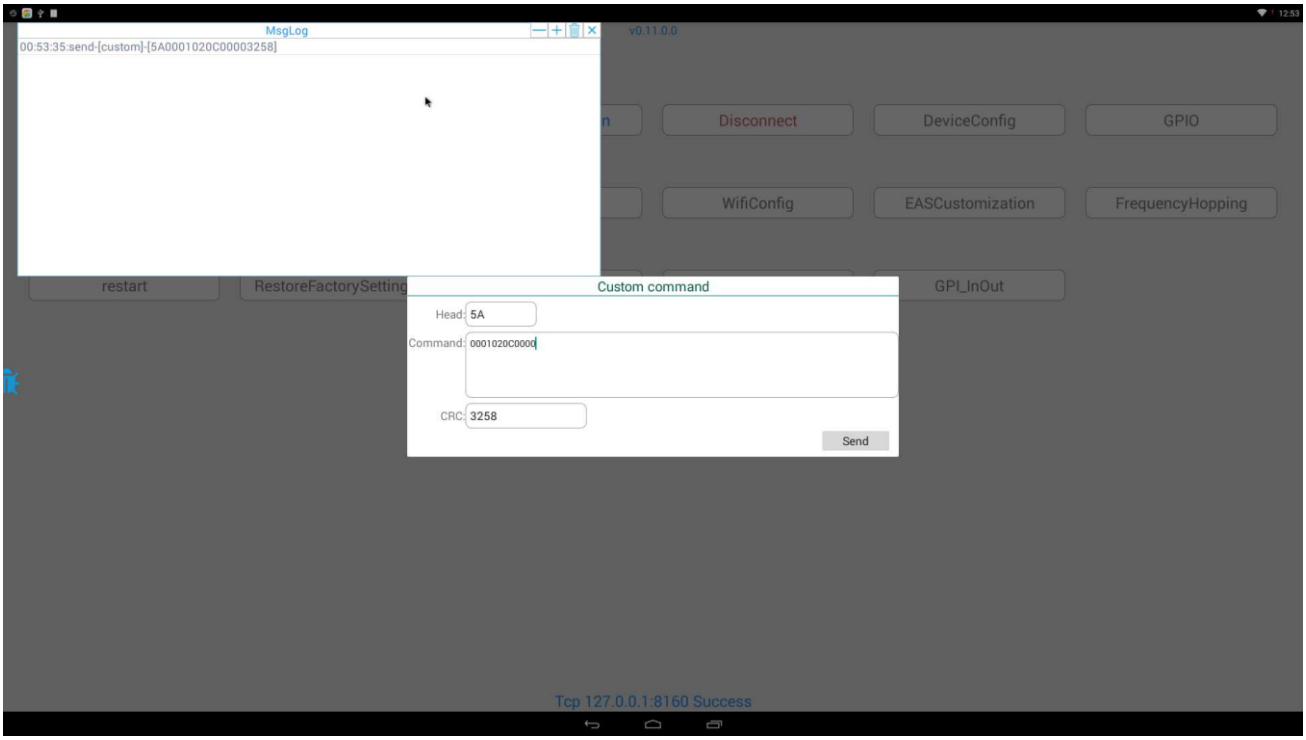


3.14. Custom Command

Head: data frame header, defaulted to be 5A;

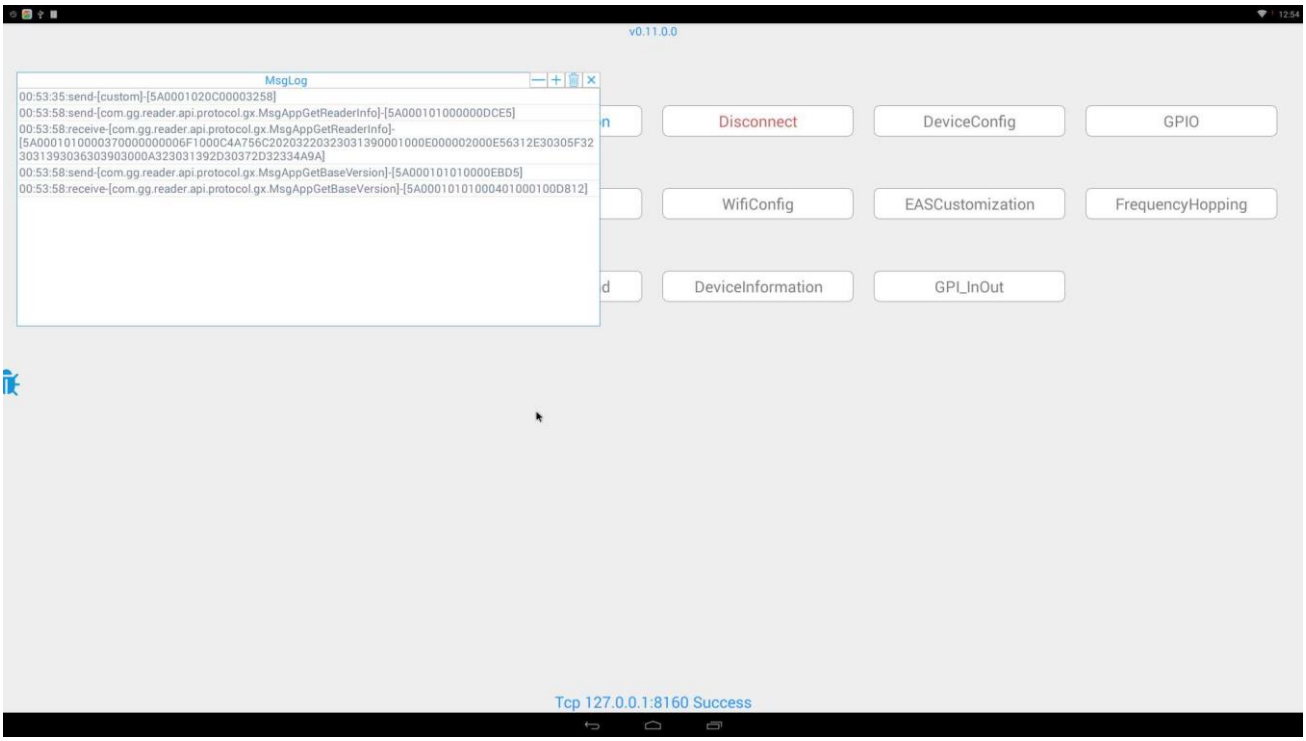
Command: command can be written according to the communication protocol of the reader, or extract by double clicking lines of the log window;

CRC: check code(automatically generated by filling in command).



3.15. Device Info

Click Setting to check the detail information for the reader.

3.15.1. Info of the Sent Command

Click the Hover Debug blue button(moveable) on the left, then you can open the suspension window (which is moveable, and can be zoomed in and out, cleared and closed) to check the information of the sent command. Click one line of them to copy (the frame header and end, and the CRC are removed). A successful command concludes Send and Receive. All command will be shown only if the connection is successful.