

# TZ-BT04B User Manual v1.7



## 1 Product overview

TZ-BT04B is Bluetooth Low Energy temperature and humidity data logger with the latest Bluetooth 4.0 technology and Nordic NRF51822 chip. It can collect temperature and humidity of the surrounding environment . Such data can be recorded as history data. BT04B can store up to 12000 pieces of the temperature and humidity data. Mobile phone with Bluetooth 4.0 or above can download and install App.It can store and monitor temperature and humidity of the environment comprehensively. Its characteristics are small-sized, low-weighted, easily portable and highly accurate for wide use in cold chain logistics, archives, labs, museums, etc.

## 2 Product application

1. Refrigerated storage and transportation;
2. Archives;
3. Experimental (test) rooms;
4. Workshop;
5. Museums;
6. Pharmaceutical environment;
7. Fresh transport.

## 3 Product features

1. High accuracy and stability;
2. Bluetooth 4.0;
3. Long distance wireless transfer;
4. Built-in highly sensitive temperature and humidity sensor;
5. Real-time display temperature and humidity;
6. It can store 12000 pieces of temperature and humidity data;
7. You can set the alarm temperature range;
8. Can be set the scope of temperature alarm;
9. Can be set normal storage temperature and humidity data interval and alarm storage temperature and humidity data interval;
10. Can choose time to query data, the stored data can be saved in history;
11. History report can be sent to specified email;
12. By pairing Bluetooth printer to print the data report;
13. Can by OTA update version.

## 4 Product specification

| Item                          | Specification     |
|-------------------------------|-------------------|
| Signal transmission frequency | 2.400 - 2.4835GHz |
| Protocol standard             | Bluetooth 4.0     |
| Modulation mode               | GFSK              |
| Send interval                 | 2S, adjustable    |
| Built in battery              | CR2450,550mAh /3V |

|                                |   |
|--------------------------------|---|
| Output power                   | -4dBm, adjustable   |
| Communication rate             | 1Mbps   |
| Transmission distance          | 55 meters, adjustable   |
| Storage                        | Can be save 12000 temperature and humidity data                   |
| battery life                   | 1.5 years (Depends on the mode of operation, can replace battery) |
| Net weight                     | 30g   |
| Outline size                   | 50mm*50mm*20mm  |
| Detect temperature range       | -40°C~ +125°C   |
| Operating temperature range    | -25°C~ +60°C  |
| Humidity detection range       | 0~100%RH  |
| Temperature detection accuracy | ±0.3°C  |
| Humidity detection accuracy    | ±3%RH   |

## 5 Caution

1. Being close to a metal object will interfere with the signal, causing the signal to be weaken;
2. Note the distance between TZ-BT04B and the receiver to guarantee the accuracy of receiving
3. Keep away from water and corrosive objects.

## 6 Switch Instructions

| Device status | Operation   | LED light instruction   | Instructions   |
|---------------|---|---|--|
| Turn on       | Under unopened state, long press button for 3 seconds | The Green led Flashes continuous 3 seconds on, then flashes once every 10 seconds | Turn on the device, start send the real-time data,need to switch on the 'Travel Records' button,then start record the data |
| Turn off      | Open state, long press the button for 3 seconds       | The Red led Flashes 5 times, then off   | Turn off the device  |

## 7 APP

‘temperature data logger’ is a free mobile applications which provided by our company to the users, can connect the BT04B through the Bluetooth of the mobile devices and do the settings,data transmission, recording, synchronization, send to email. Apply the Bluetooth BLE way, so you can use Android, IOS phone for temperature monitoring.

### 7.1 Android system ‘temperature data logger’ App use.

Client can download App by scan the QR code below:

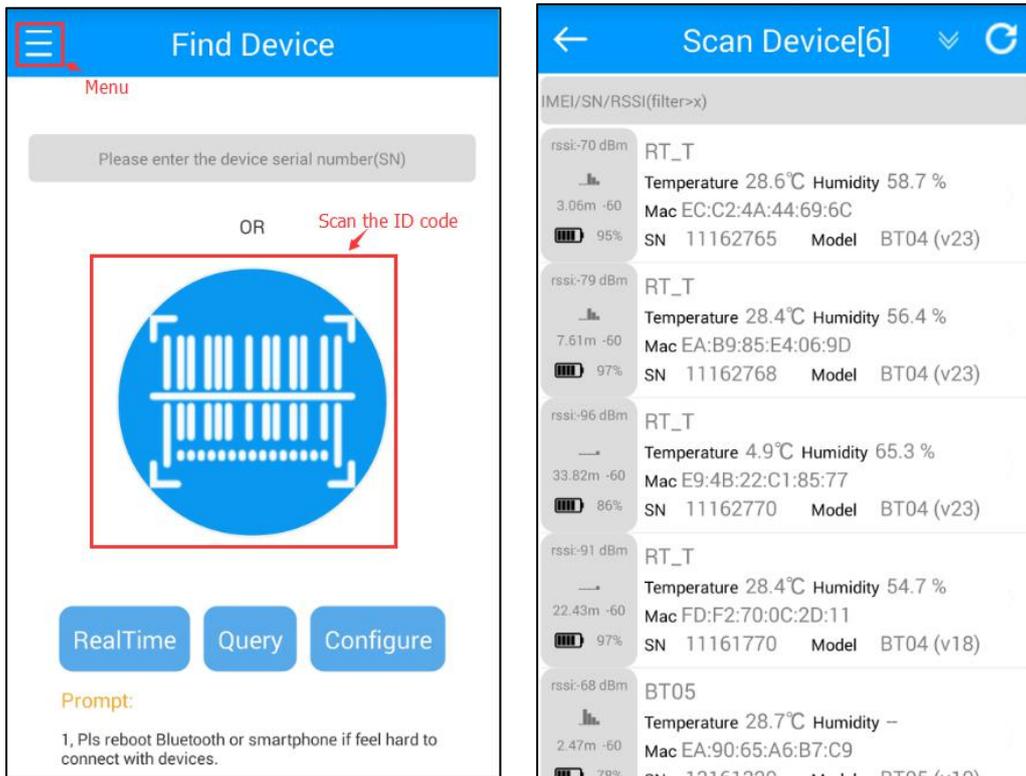


Open the ‘temperature data logger’ software, the first to see is the scan code interface; there are three interface buttons, they are ‘Real time’, ‘Query’, ‘Configure’; and the upper-left corner of the menu button. Whether you need to enter which interface of this three interface, devices are required SN code, SN code can be scanned ,entered directly using the phone keypad, also can directly click Real time/Query/Configure and see the device list:

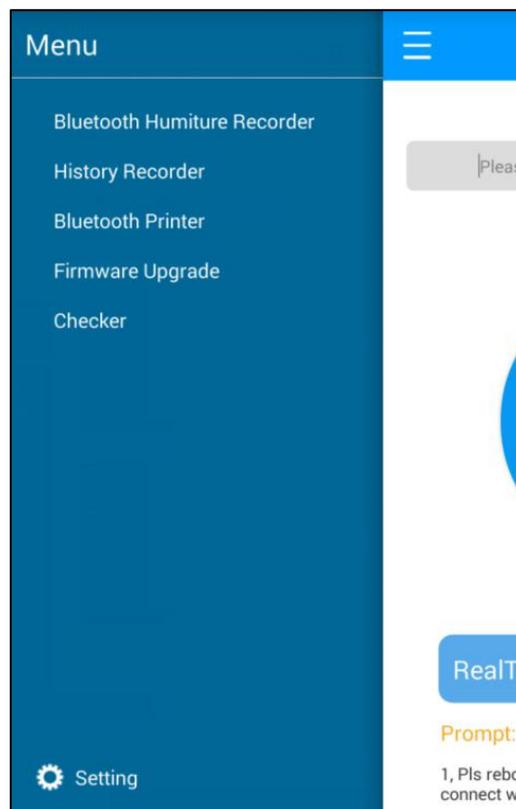
Note: 1. One mobile phone APP only can scan 300 devices;

2. The mobile phone size must more than 4.7 and the resolution must more than 1280\*720

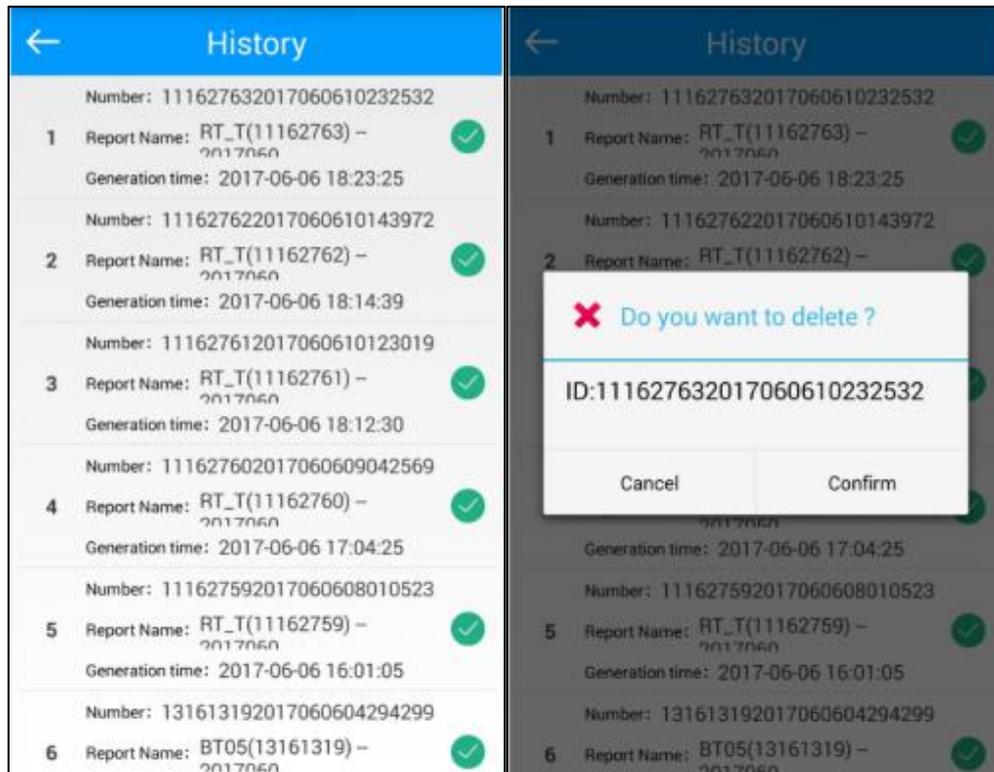
As shown below picture:



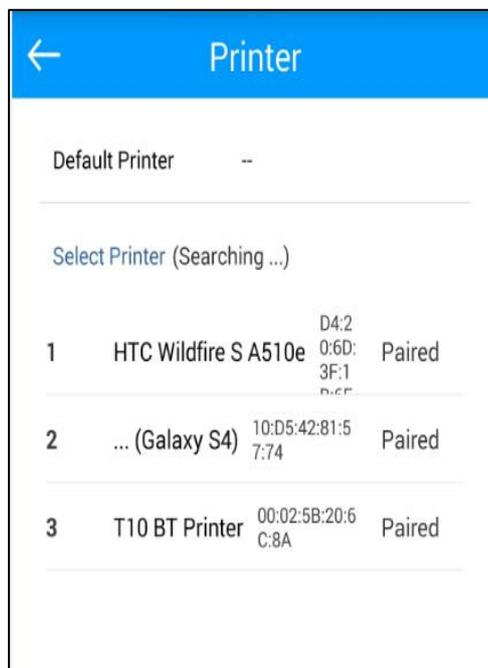
Press the Menu key to query historical data extraction, pairing a Bluetooth printer, update the firmware by OTA and inspection equipment, as shown below:



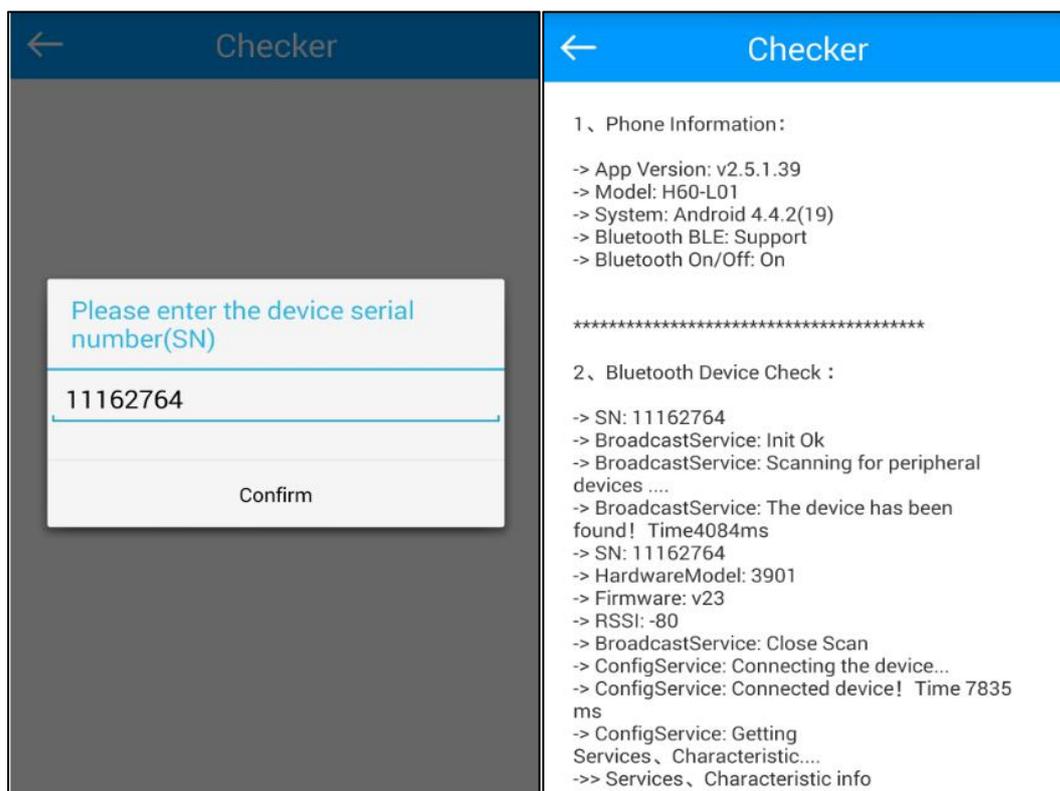
Historical records which stores all the history report,you can delete the report when you press the report and hold on for a while.



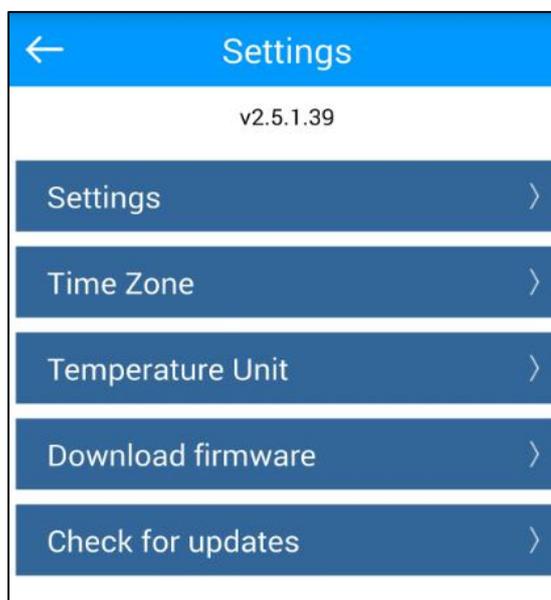
Select the matching printer, print history report data:



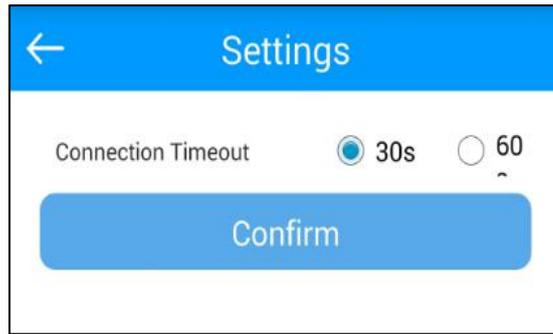
Inspection tool can check the phone and machine information and the connection.



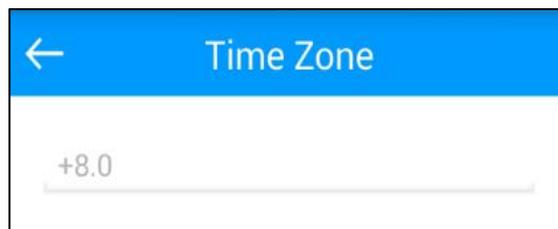
Click on the lower left corner of the set key, can see the software Settings, the system time zone, temperature unit, download the firmware update and checker.



Can be set up mobile phone connection timeout time machine:



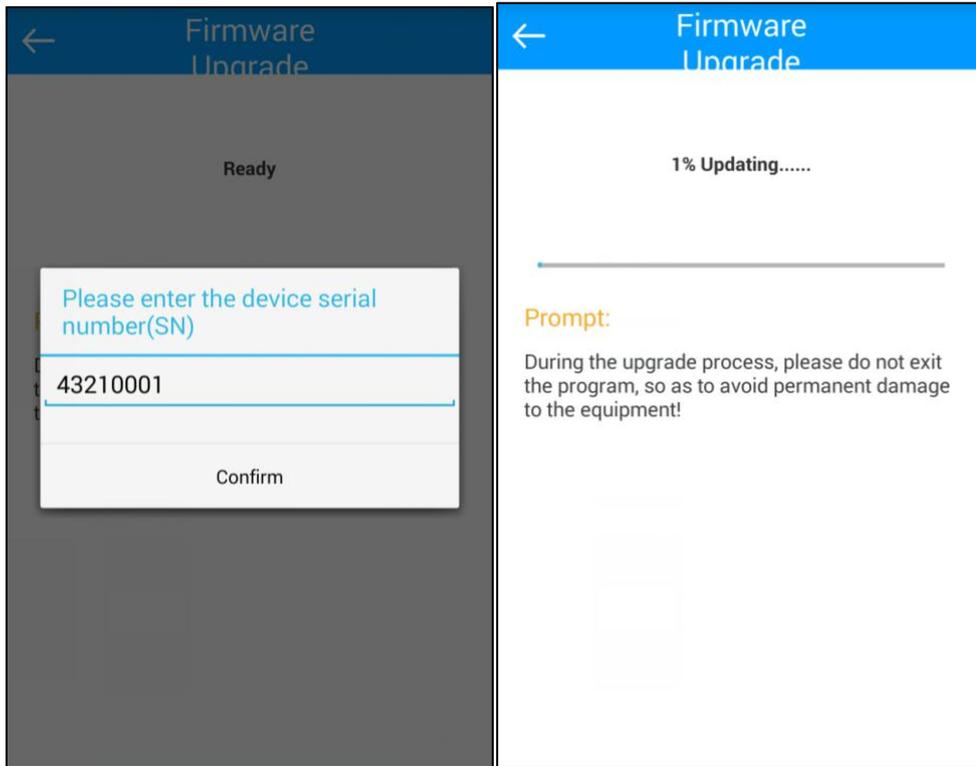
Can set the local time zone, the PDF/CSV report will become the current time:



Can set the temperature of the unit you need:

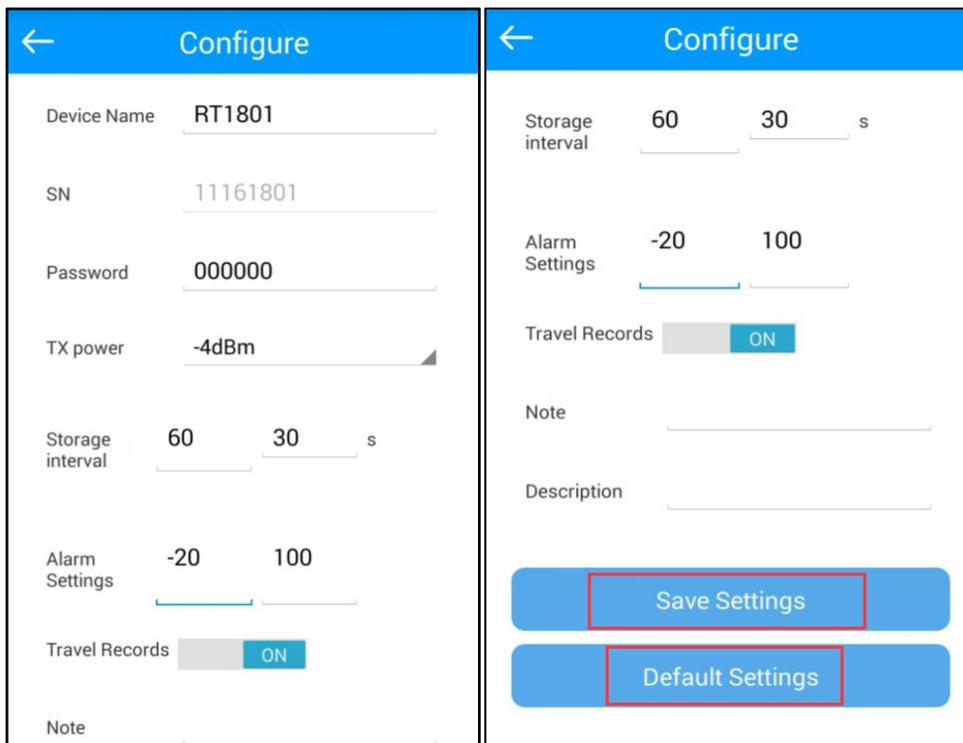


BT04B\_V24 and above version have OTA function, choose the firmware update, the latest version on the server can be detected and downloaded to mobile phones, then choose the need to update the machine ID, input the password, you can update to the latest version, when update is completed you will be prompted to update successful.



### 7.1.1 Configure logger

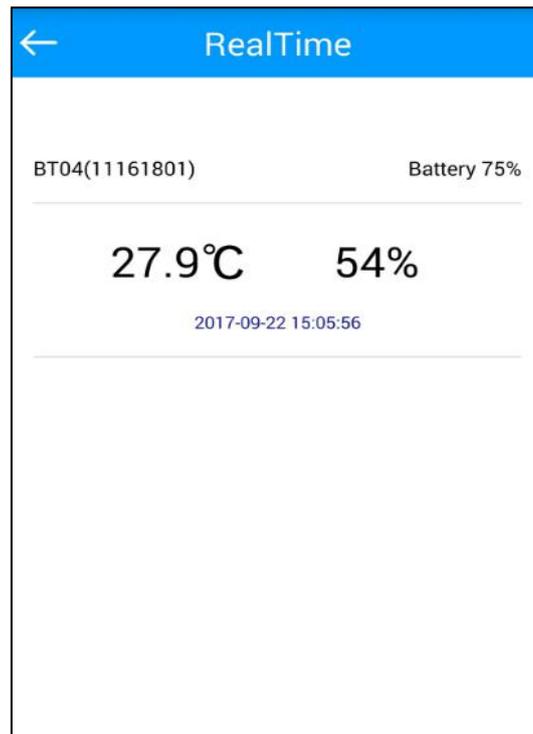
After entering the SN code or scanning device , or directly click ‘Configure Devices’ and select the device, on the home page, or enter the configuration interface, as shown below:



The interface can be configured BT04B password(6 byte),transmit power(-30~4dbm), Normal/Alarm storage space(10~3600s), and the upper and lower temperature limits(-25~100° C), Travel Records .The appropriate value of the transmit power can be selected in the drop-down list; storage interval and alarm settings directly enter numbers according to individual needs; Travel Records, if you want Save the data, you must open it, when you close and open again, it will clear historical data. According to individual requirements click Save Settings then can write in, if save successfully, will be prompted the ‘Save Configuration successful.

### 7.1.2 Real time data

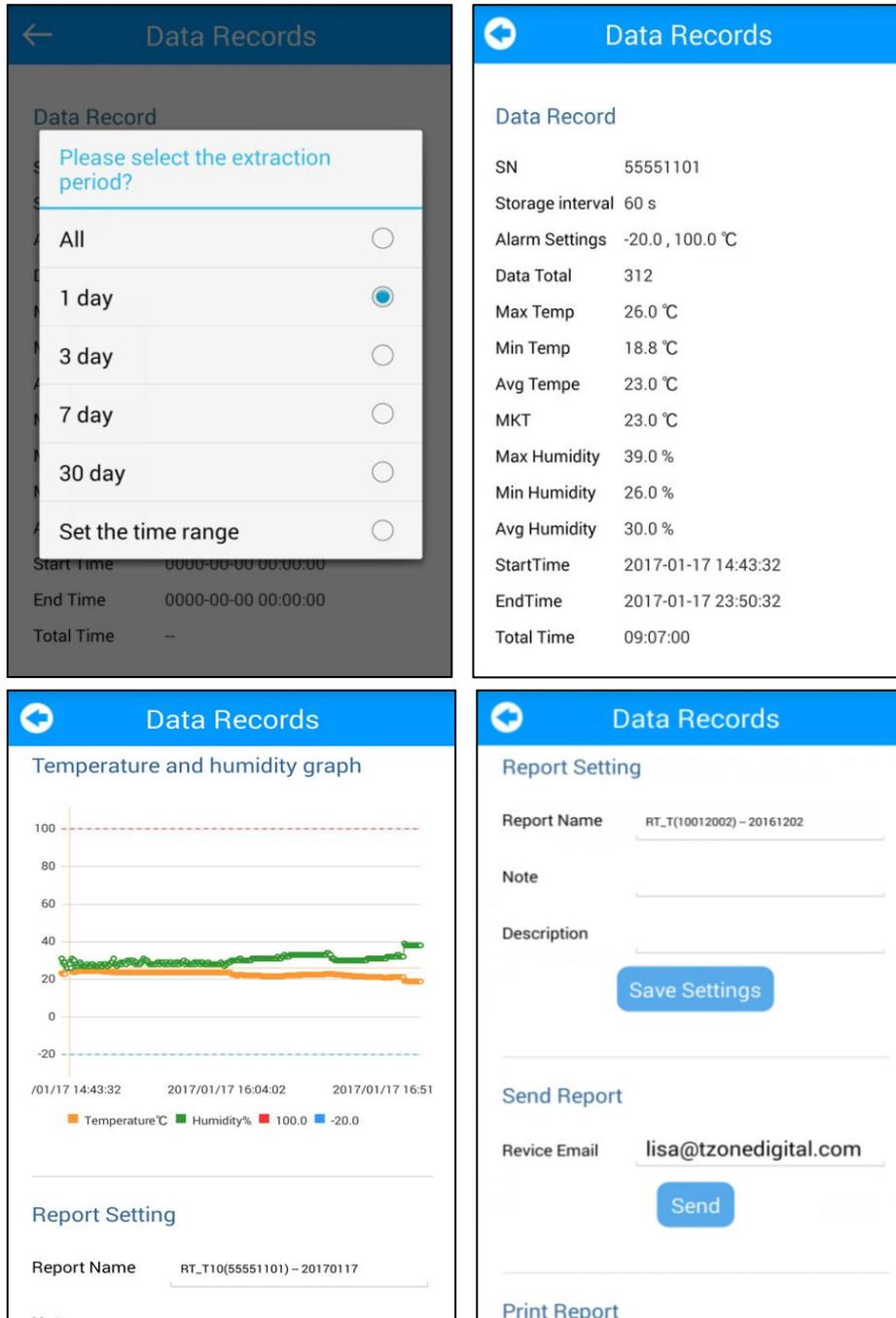
‘Real time data’ displays the device name, real-time temperature and power, the interface for viewing real-time temperature, if the temperature exceed the limits then the figure change to be red, or else black font, this interface does not provide editing function . As shown below:



### 7.1.3 Query data

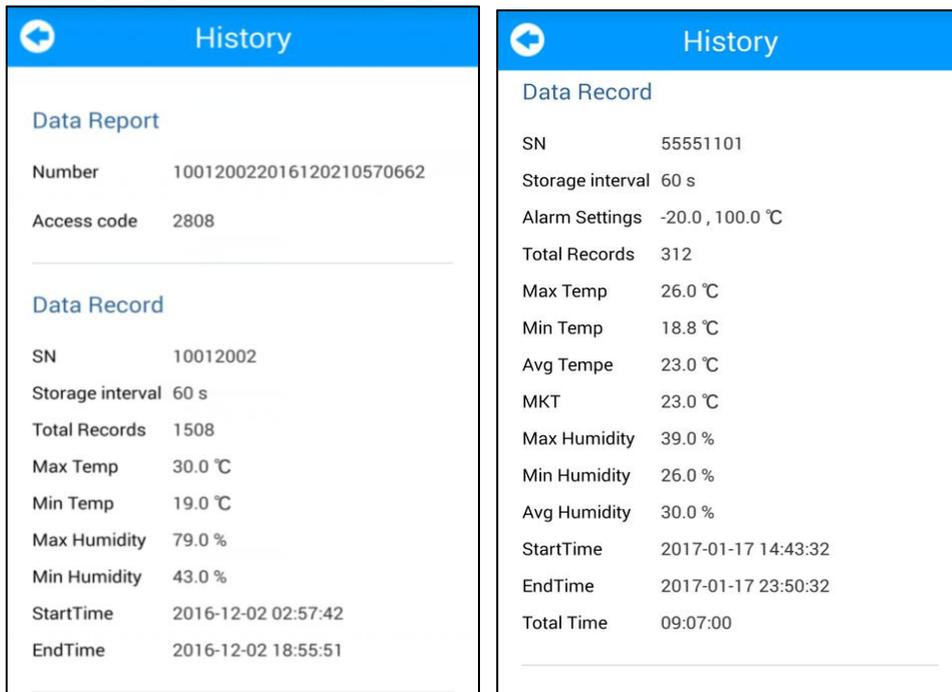
‘Query Data’ screen, can choose extraction time,displays SN code,Storage interval, Alarm settings, the total number of data recorded ,the maximum/minimum/Avg/MKT temperature during recording, start time, end time, total time, temperature during

recording, start time, end time, temperature graph and Bluetooth printing, the interface is mainly used for reading temperature data recorded in a specific time period, the same as the historical record, the report includes data report, data record, temperature and humidity chart, set report, send report and print report, as shown below:

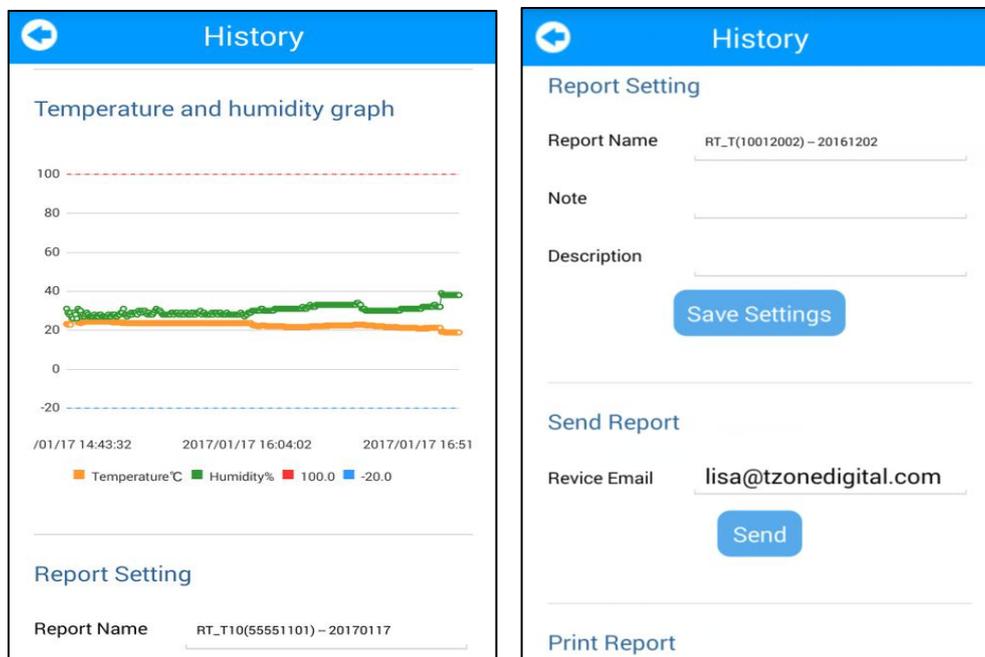


### 7.1.4 History record

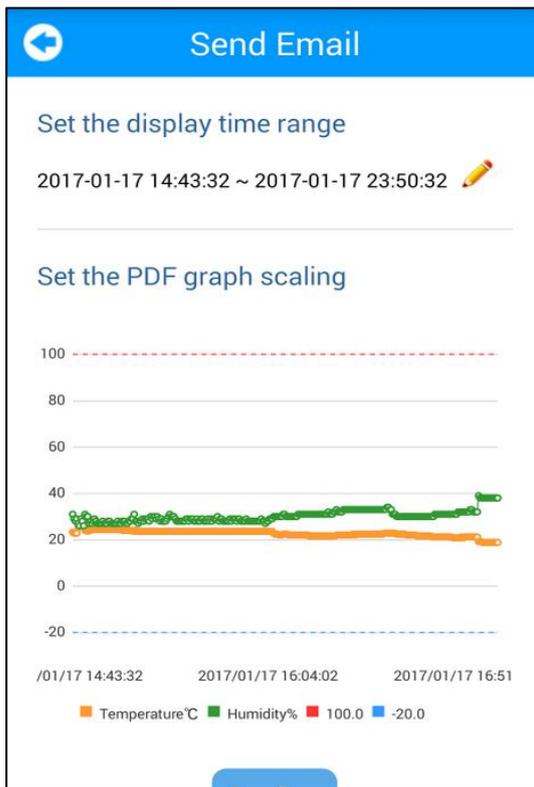
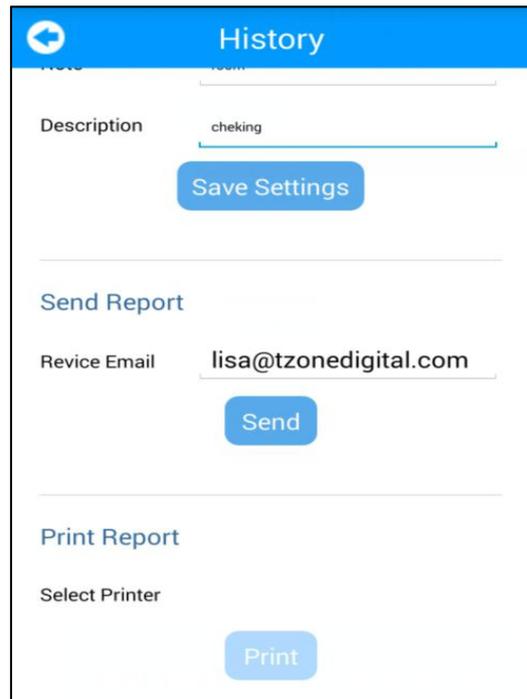
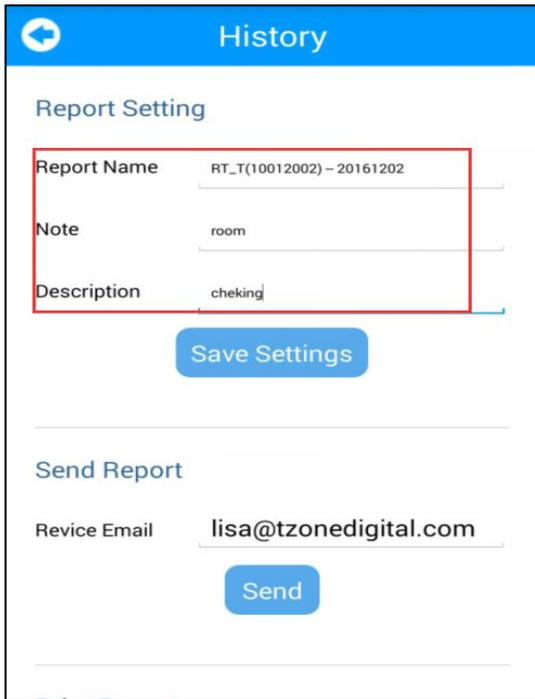
Every click on the "query data", the data will be stored in the historical data, you can into the historical record, the report includes data report, data record, temperature and humidity chart and send report and print reports, as shown below:



Note: **Red line**: high temperature threshold, **blue line**: low temperature threshold  
In the report Settings can be set up report name, comment and description, also can be directly set in configure logger, as shown below:



In “send report” can be set up to receive email, the first please set the email account on the mobile, click send, you can change the report start and end time and set the graph scaling, click confirm, it is will generate PDF/CSV files and into write email, you can input mail content, red box for sending, click it, the PDF/CSV report will be sent to the designated email, as shown below:



Can be in the specified mailbox to see to this email and generate PDF/CSV report,as shown below:

Note: it is recommended to use Adobe Reader XI software to view the PDF report, there may be other third-party software font incompatibilities.



## 7.2 IOS system ‘temperature data logger’ App use.

Client can download App by App Store :

Search: Humiture Recorder



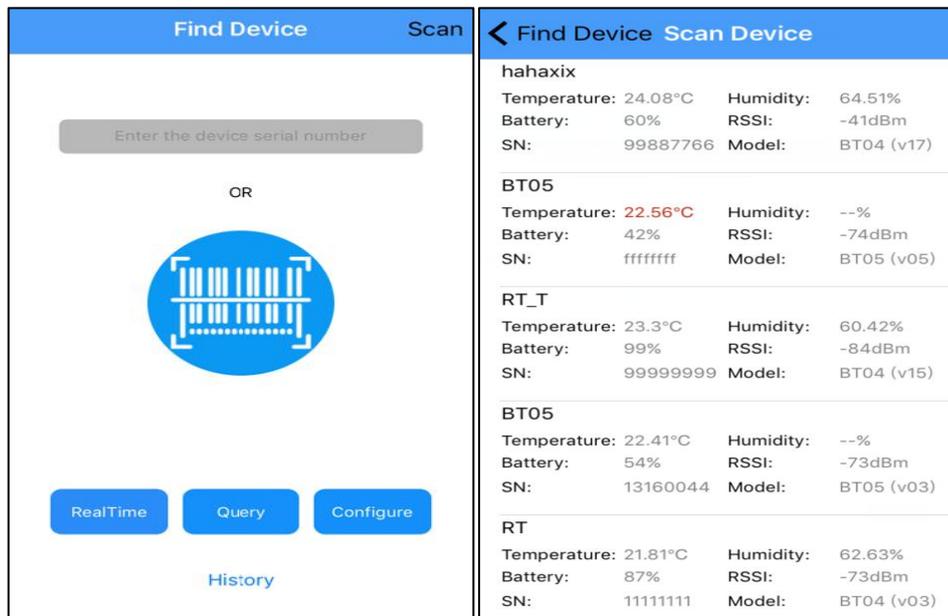
Open the ‘temperature data logger’ software, the first to see is the scan code interface; there are three interface buttons, they are ‘Real time’, ‘Query’, ‘Configure’; and the upper-right corner of the search button. Whether you need to enter which interface of this three interface, devices are required SN code, SN code can be scanned or entered directly using the phone keypad or also can directly see equipment list after clicking

on search.

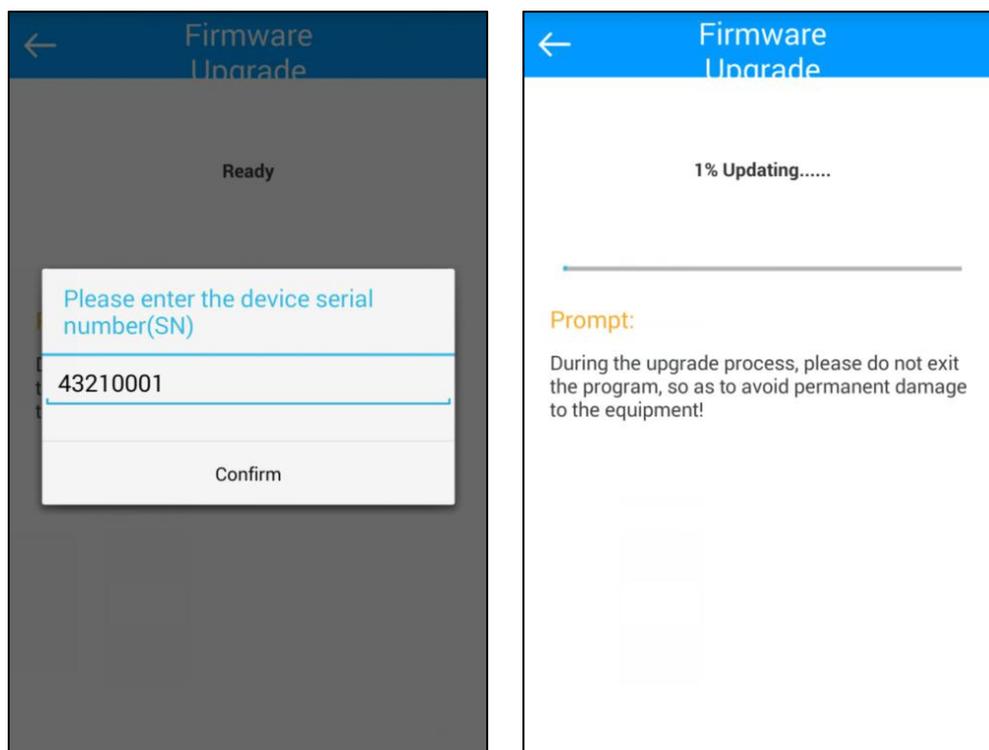
As shown below picture:

Note: 1. One mobile phone APP only can scan 300 devices;

2. The mobile phone size must more than 4.0 and more than the iPhone5 mobile phone,suggest that it is best to use the iPhone6 above, to ensure smooth operation



BT04B have OTA function, choose the firmware update, the latest version on the server can be detected and downloaded to mobile phones, then choose the need to update the machine ID, input the password, you can update to the latest version, when update is completed you will be prompted to update successful.



## 7.2.1 Configure logger

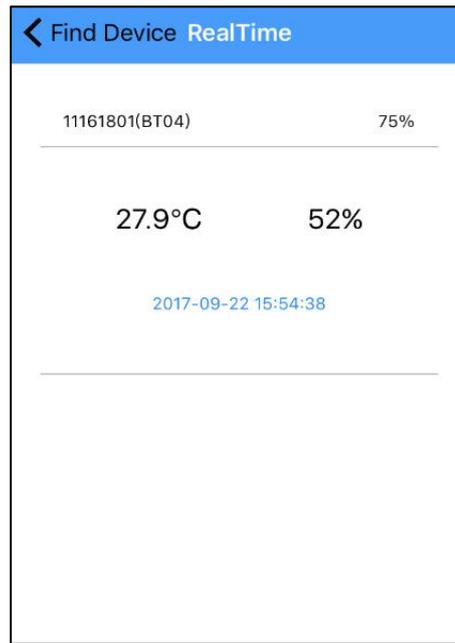
After entering the SN code or scanning device or clicking search on the home page, will enter the configuration interface, as shown below:

| Back             | Setting                             | Save |
|------------------|-------------------------------------|------|
| SN               | 11161801                            |      |
| Password         | 000000 >                            |      |
| Transmit Power   | -4(dBm) >                           |      |
| Storage Interval | 60,30(s) >                          |      |
| Alarm Settings   | -20.0,100°C >                       |      |
| Trip Record      | <input checked="" type="checkbox"/> |      |
| Device Name      | RT1801 >                            |      |
| Remarks          | >                                   |      |
| Description      | >                                   |      |

The interface can be configured BT04B transmit power, Normal/Alarm storage space, and the upper and lower temperature limits, Travel Records .The appropriate value of the transmit power can be selected in the drop-down list; storage interval and alarm settings directly enter numbers according to individual needs; Travel Records, if you want Save the data, you must open it, when you close and open again, it will clear historical data. According to individual requirements click Save Settings then can write in, if save successfully, will be prompted the ‘Save Configuration successful.’

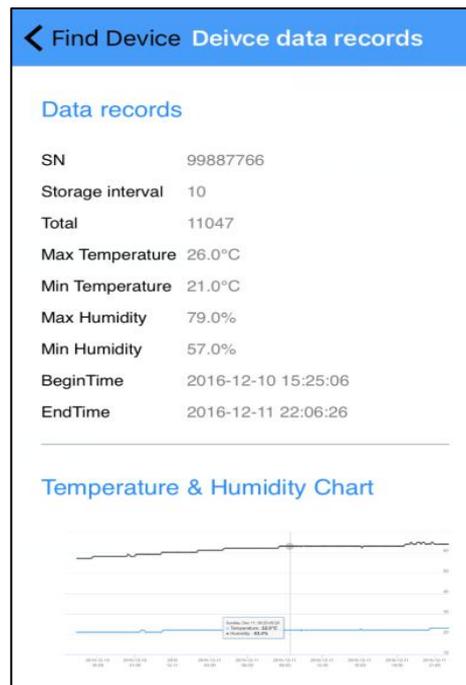
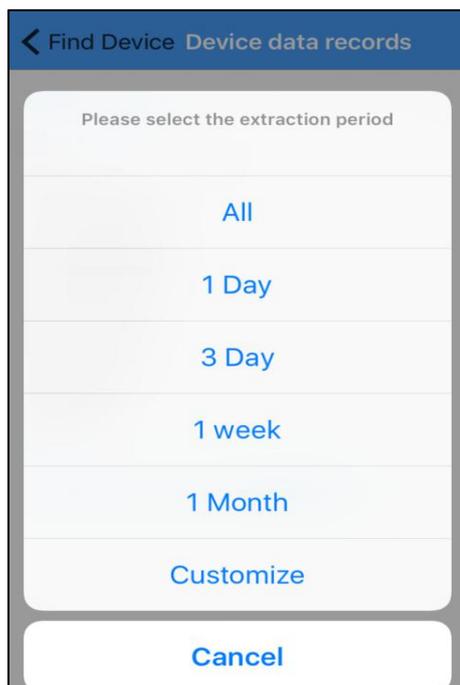
## 7.2.2 Real time data

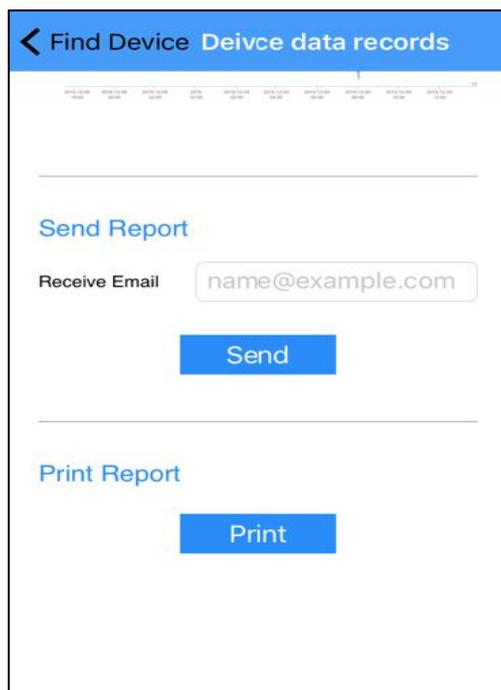
‘Real time data’ displays the device name, real-time temperature&humidity and power, the interface for viewing real-time temperature&humidity, if the temperature exceed the limits then the figure change to be red, or else black font, this interface does not provide editing function . As shown below:



### 7.2.3 Query data

'Query Data' screen, can choose extraction time, displays SN code, Storage interval, the total number of data recorded, the maximum and minimum temperature during recording, start time, end time, temperature and humidity chart, send report and Bluetooth printing, the interface is mainly used for reading temperature and humidity data recorded in a specific time period. there have send report and print report function(Please don't let the screen lock screen, or query will interrupt), As shown below:



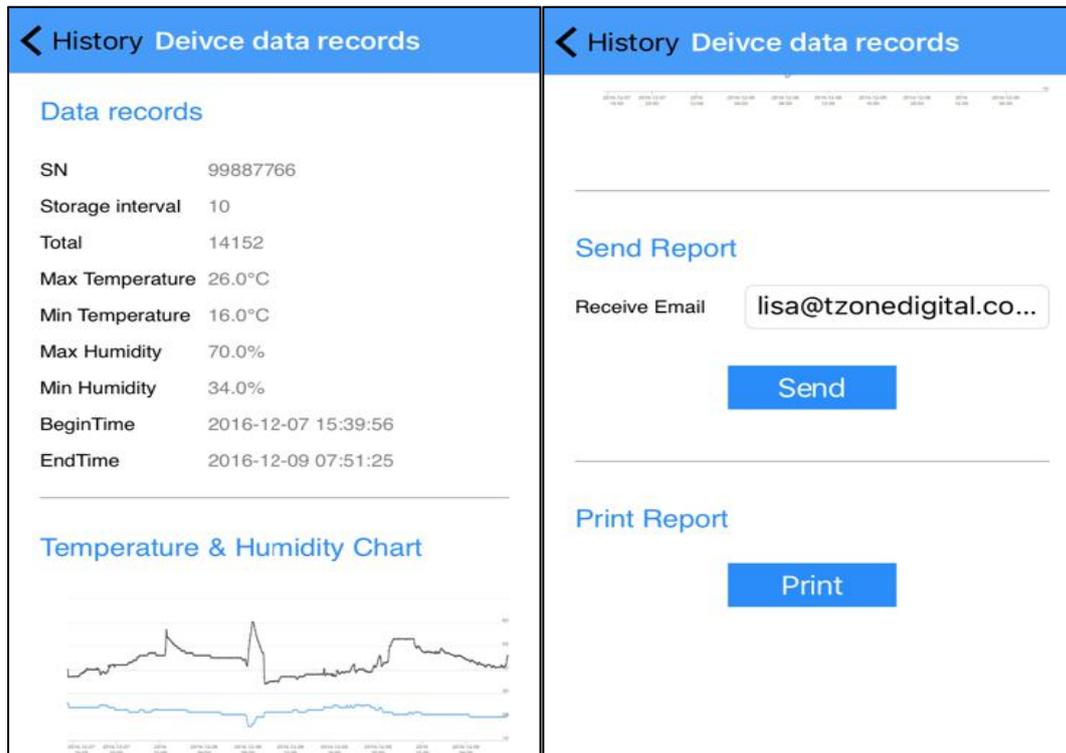


## 7.2.4 History data

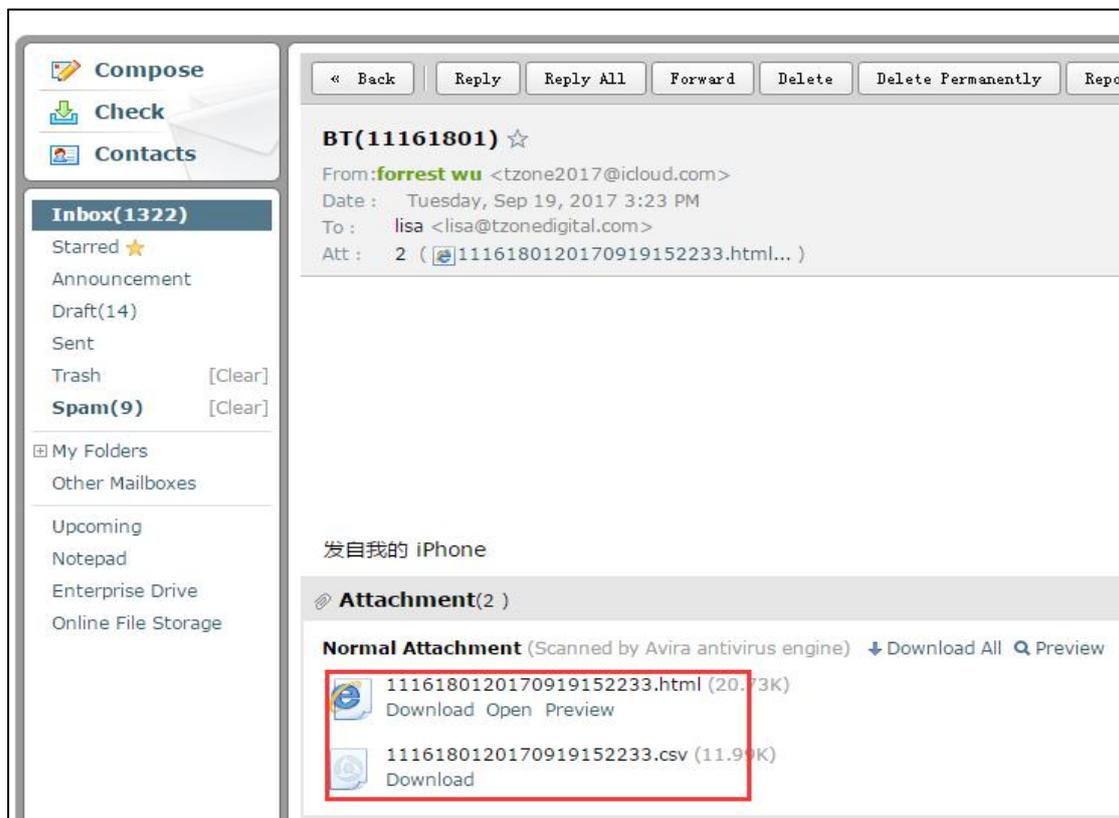
Every click query data, stored data will be stored in a history report, can enter the history report to see.

| Find Device History |                        |
|---------------------|------------------------|
| No:                 | ffffff20161209135521   |
| Token:              | 1234                   |
| CreateTime:         | 2016-12-09 13:55:21    |
| No:                 | 9988776620161209075322 |
| Token:              | 1234                   |
| CreateTime:         | 2016-12-09 07:53:22    |
| No:                 | 9988776620161209001818 |
| Token:              | 1234                   |
| CreateTime:         | 2016-12-09 00:18:18    |
| No:                 | 9988776620161208174543 |
| Token:              | 1234                   |
| CreateTime:         | 2016-12-08 17:45:43    |
| No:                 | 8765432120161208174220 |
| Token:              | 1234                   |
| CreateTime:         | 2016-12-08 17:42:20    |

And query data, the same history report includes data record, temperature and humidity chart , send report and print reports, as shown in the figure below:



In sending report can be set receive email, the first please set the email account on the mobile,click send , can generate HTML/CSV form the report and sent to email address:



Turn on the Bluetooth printer, click print button, can automatically search the Bluetooth printer device name, click the device name, can automatically match and print this data report:

