

CS-iWPT301
Wireless Bluetooth Temperature and Pressure Transmitter
Operating Instruction
(CS-iWPT301)
(REV A)

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目录



Content

- 1 Overview1
- 2 Main design parameters 1
 - 2.1 Main technical parameters 1
 - 2.2 Outline dimensions and wiring definitions 2
- 3. Operation instruction 4
 - 3.1 Installation the battery4
 - 3.2.1 Installation Procedure 4
 - 3.2 Installation and use of APP 5
 - 3.3 Battery Replacement Instructions 10
 - 3.4 Description of Bluetooth feature value 10
- 4 Configuration Accessory 10
- 5 .Troubleshooting 11
- 6. Declaration 11



CS-iWPT301 Wireless Bluetooth Temperature and Pressure Transmitter Operating Instruction

1 Overview

The Wireless Bluetooth temperature and pressure transmitter is mainly used in transportation pipelines of oil, steam, heating and so on, to monitor the temperature, pressure. With the Bluetooth receiving module, the data collected can be monitored by the APP.

It supports both battery-powered and external power supply, with Bluetooth communication, easily configured parameters. The product using the world's first-class sensing element, transmitter application-specific integrated circuit and accessories. The product has characteristics of high precision, high quality, compact size, easy installation and high-cost performance. The product conforms to BLE4.2 protocol, can interact with terminal with mobile app.

2 Main design parameters

2.1 Main technical parameters

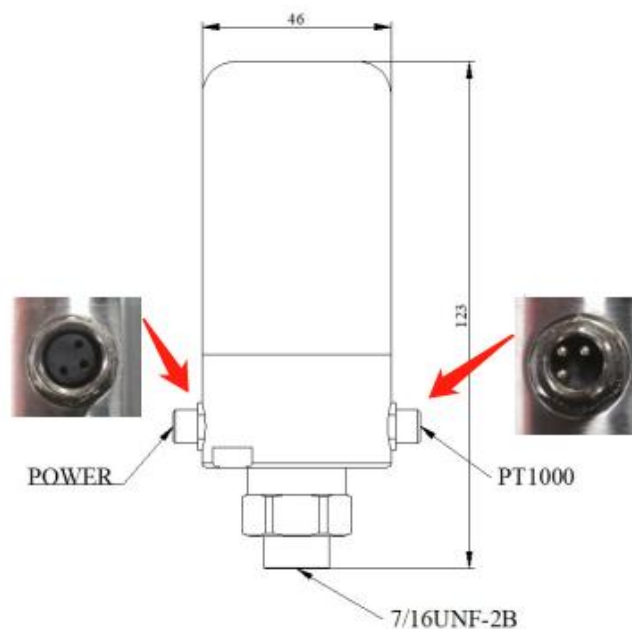
Main technical parameters chart

Name	Technical parameters	Remark
Pressure range	0 ~ 20bar	(Customizable)20bar default
Pressure accuracy	1%F.S	
Overload pressure	1.5X	
Insulation resistance	100MΩ@100VDC	
Testing medium	Liquid or gas compatible with stainless steel and fluororubber	
Temperature range	-50 ~ 150℃	
Temperature accuracy	±1℃/F.S	
Power supply	8 ~ 30VDC	External power supply
	3.6VDC	Non-chargeable lipo battery-powered
Transmission mode	Bluetooth 4.2	



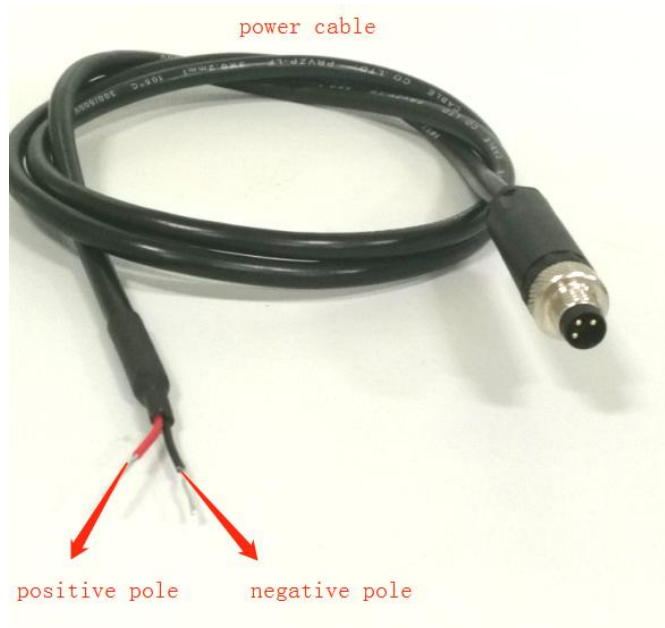
Pressure port	7/16-20UNF(internal thread)	customized
Protection rate	IP65	
Battery life	More than 12 months	
Compensated temperature	(-10 ~ +80)°C	
Operating temperature	(-40 ~ +85)°C	
Storage temperature	(-45 ~ +85)°C	

2.2 Outline dimensions and wiring definitions



Picture 2 actual product

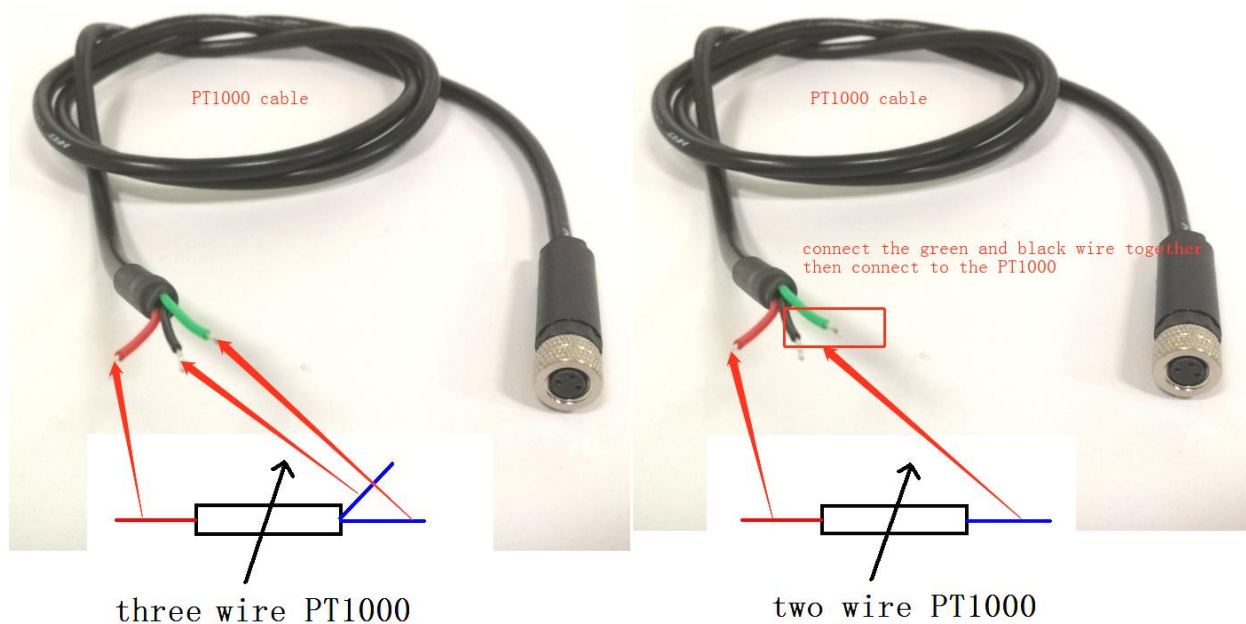
a. The wiring definitions of external power cable



Picture 3 wiring definitions of external power cable

Note: The cable of the three core male is match with the products, and it is supplied by the manufacturer

b. The wiring definitions of PT1000



Picture 4 wiring definitions of PT1000 cable

Note: the cable of the three core hole is match with the product, but the PT1000 is supplied by user.

Note:



- 1.The temperature transmitter PT1000 is connected to aviation plug mark with PT1000, and the external POWER is connected to aviation plug mark with POWER. Do Not Take the wrong position.
- 2.The wiring of this manual is for 3-wire. if need to connect with 2-wire temperature sensor. Customer need to use the factory supplied cable, screw the green and black wire together, then connect that with PT1000.

3. Operation instruction

The CS- iWPT-301 Bluetooth temperature and pressure transmitter, installed with a battery or connected to an external power supply of 8-30 VDC (anyone is ok). After power on,open the phone, run the APP, and Connect device via Bluetooth, where you can refresh the temperature, pressure, and battery level.

Refer to the documentation 《CS-iWPT-301-XY Bluetooth temperature and pressure transmitter BLE characteristic value discription.doc》 for BLE characteristic values.

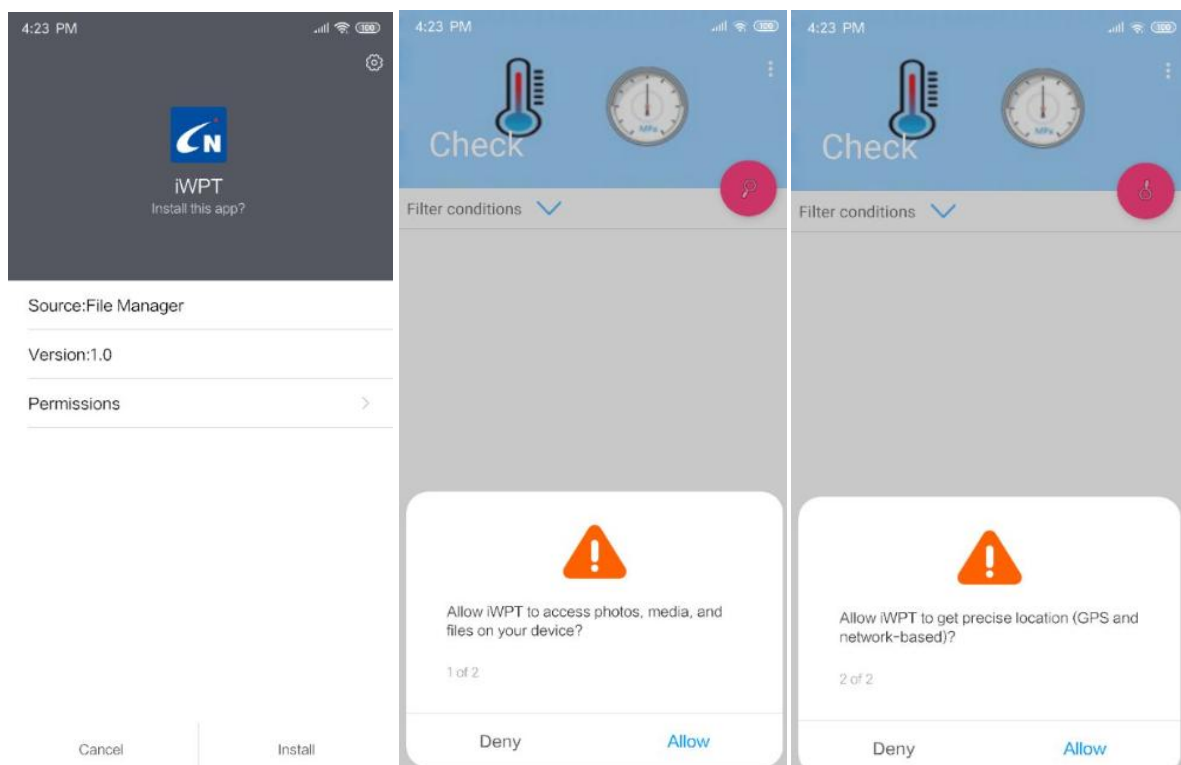
Paired password:123456.

3.1 Installation the battery

1.Battery model: Non-chargeable lipo battery ER18505M.

2.Battery installation: Unscrew the black plastic cap, you can see the battery's 2-core plug, insert the battery into the battery socket BT1 position.Installation and use of APP

3.2.1 Installation Procedure



1. Installation Source

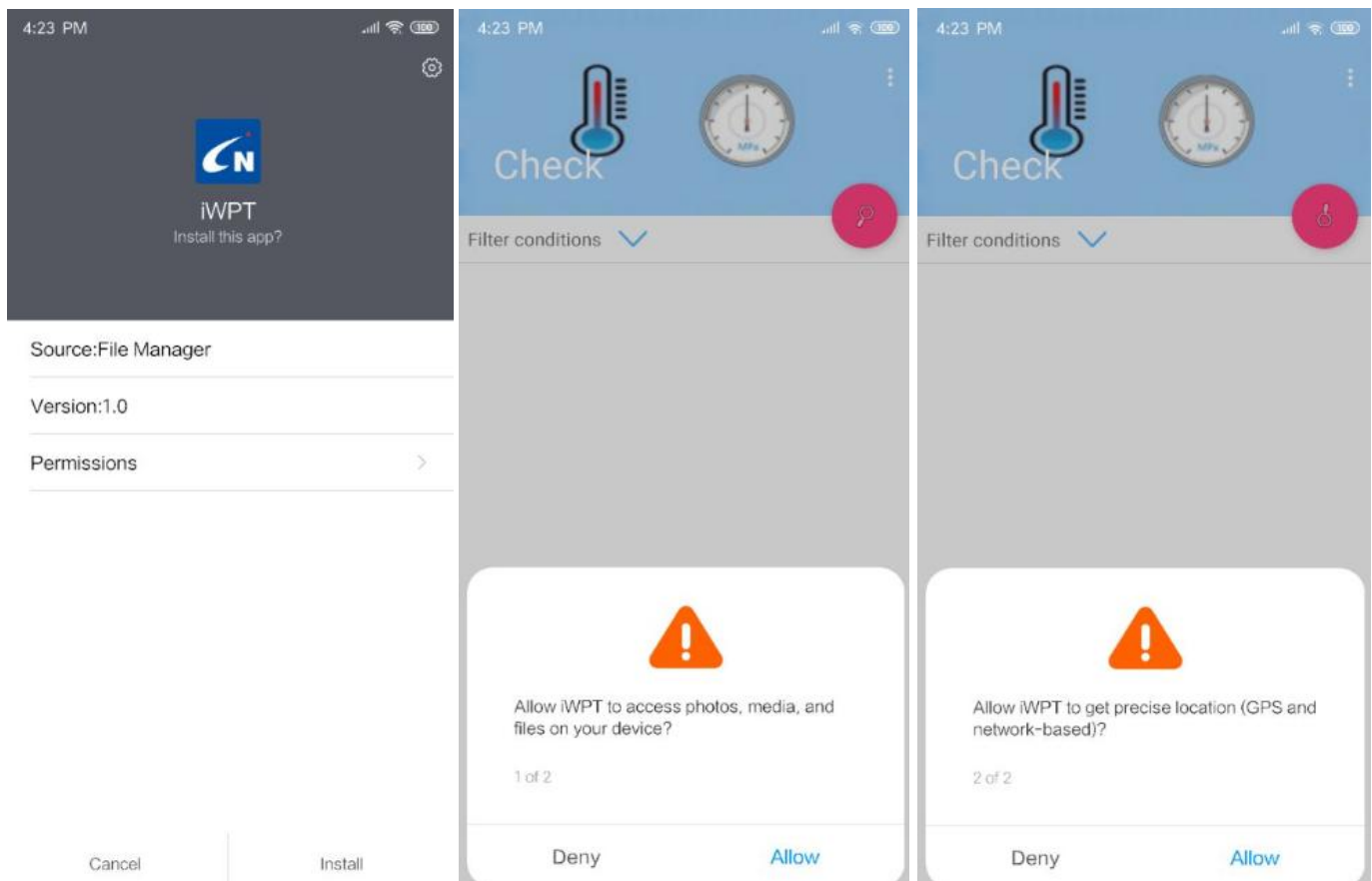
- Phone with APK package, the APP could be install directly.
- search iWPT301 in Google store to download and install.

2. Installation process

Directly install APK on your phone, when the first time the APP is opened during the installation process, allow storage permissions (for storing device aliases) and location permissions (for connecting Bluetooth devices).

3.2 Installation and use of APP

3.2.1 Installation Procedure



1. Installation Source

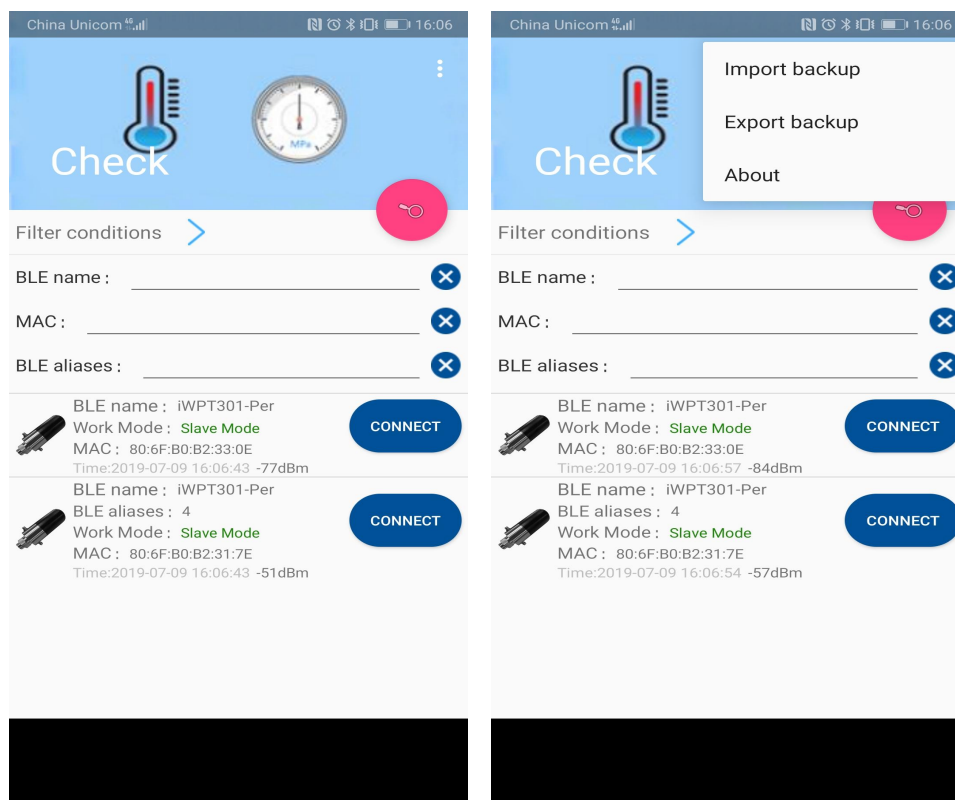
- Phone with APK package, the APP could be install directly.
- search iWPT301 in Google store to download and install.

2. Installation process

Directly install APK on your phone, when the first time the APP is opened during the installation process, allow storage permissions (for storing device aliases) and location permissions (for connecting Bluetooth devices)



3.2.2 Home



1. Opening the APP, it will automatically search for Bluetooth devices, or you can click on the button to manually re-search, When you search for a device, the last search list will be cleared.

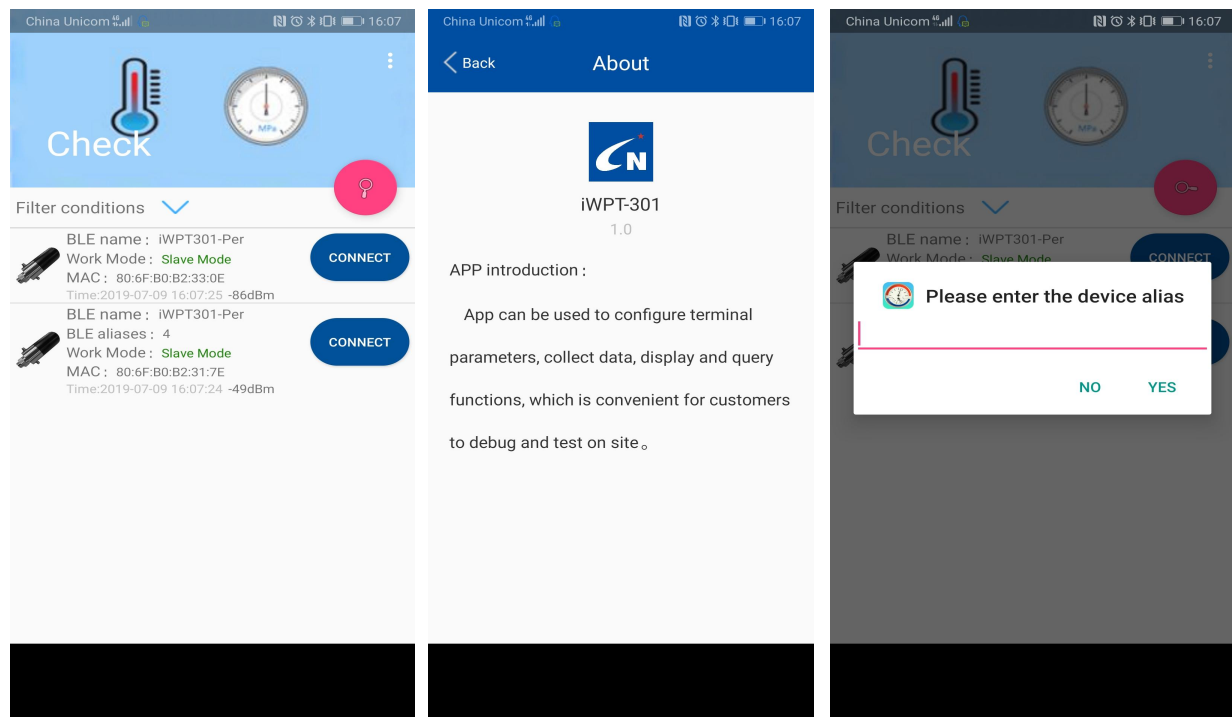
2. Bluetooth devices work in two modes: slave mode and broadcast mode.

The device in slave mode can be connected to Bluetooth host and display device's detail data on app. Devices in broadcast mode can not be connected to host, when the host receives the advertising data packet, it can analyze the temperature, pressure and power level of the device and display it on the app. The device list uses different colors to distinguish the two modes, Green is slave machine and orange is radio broadcast.

3. When filtering devices, all three conditions can be filtered. Bluetooth name, Mac address, alias. For example, if the Bluetooth name is iWPT-301-XXX , write the iWPT in the search box, the device can be found, as long as the name contains the write value.

4. Import device backup: Open the phone's storage file, select the correct "btDevicesName.txt" file to import, import other files invalid. This feature is used to ensure that the device alias continues to be used after the phone is changed.

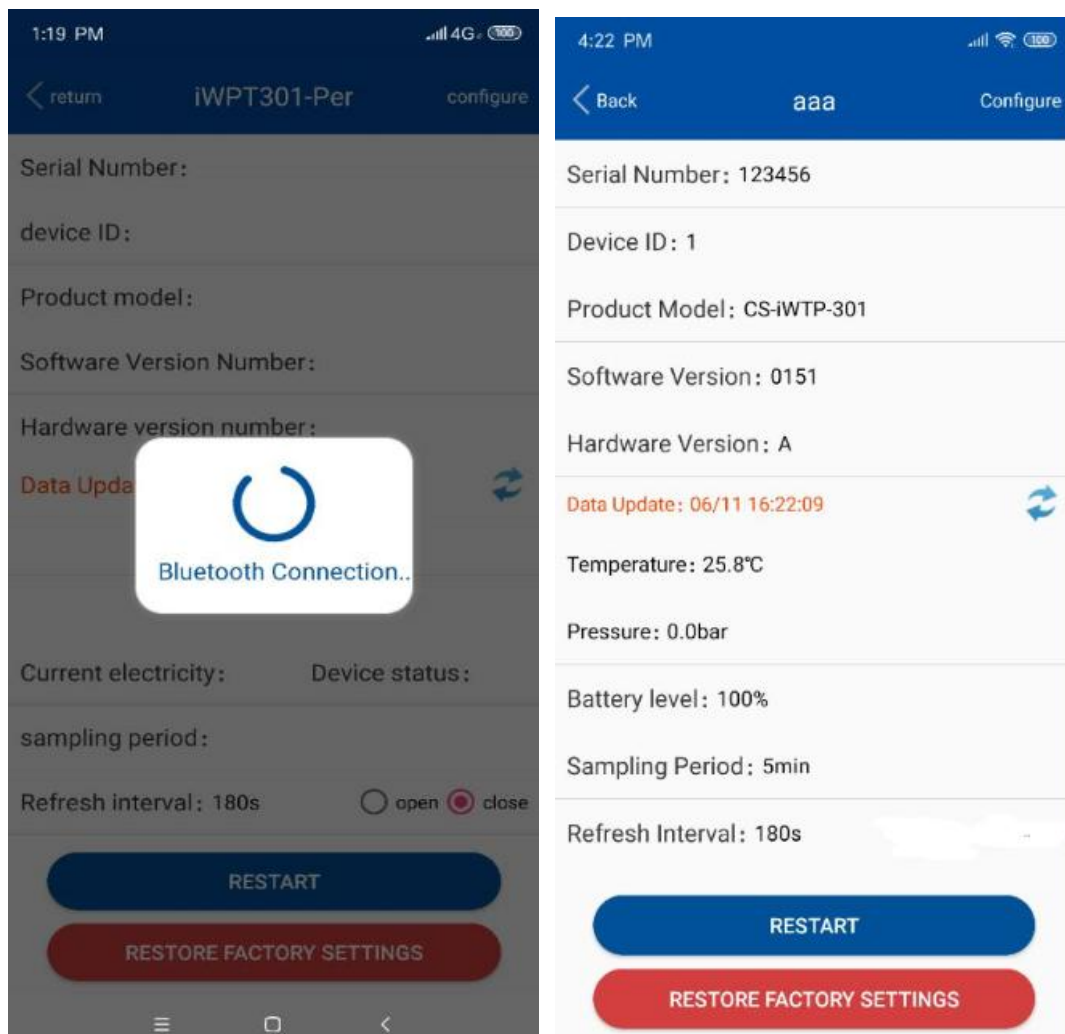




5. Export Device backup to: /sdcard/BtNames/btDevicesName.txt. (fixed path)
6. About: Store APP version number and APP introduction information.
7. Set alias: Long press list menu, will pop up the set alias box, enter device alias click ok, then set successfully, and will be in "btDevicesName.txt" File.
8. Click the connect button to make a Bluetooth connection and go to the device details screen.



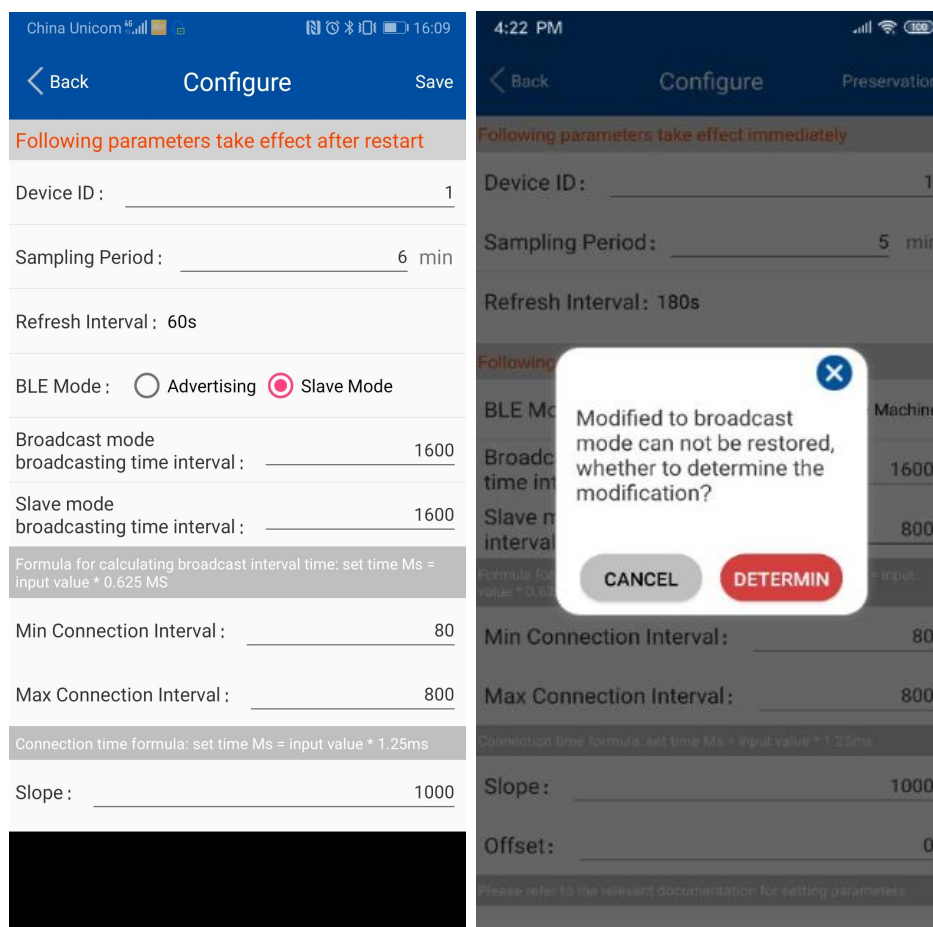
3.2.3 Device detail



1. When the Bluetooth connection is successful, the device details are got and displayed in the interface.
2. The interface refreshes at a default interval of 180 seconds, Reacquire the latest data from the device every 180 seconds, and refreshes the interface.
3. There is a refresh button on the right of the data updata. The function is to refresh the data manually.
4. Restart device: Send restart command to device, after successful execution, the terminal will restart.
5. Restore Factory settings, Send restore factory command to device, parameters are restored to factory settings. Click on the function, will pop-up a prompt box, to prevent the error click.
6. Click back, go back to the home page, clear the list, and search for Bluetooth devices again.
7. Click on the configuration parameters to enter the device configuration interface.



3.2.4 Configuration parameter



1. Parameters will not take effect until the device is restarted. The refresh interval is the time at which the app refresh device details interface automatically. The refresh interval immediate effect after modification.
2. The input value for the device ID ranges from 0-65535, after the input field is cleared, there will be relevant tips.
3. The input range of the sampling period is 0-1440, after the input field is cleared, there will be relevant tips.
4. Bluetooth mode switch will have a second confirmation reminder (as shown in figure) , since once the device change to Advertising, the APP can not be restored to slave machine, It can only be restored at the terminal.
5. Broadcast mode broadcasting time interval: 160-16000, after the input field is cleared, there will be relevant tips, parameters have the corresponding conversion formula.
6. Slave mode broadcasting time interval: 32-16000, after the input field is cleared, there will be relevant tips, parameters have the corresponding conversion formula.
7. Min connection interval: 6-3200, after the input field is cleared, there will be relevant tips, parameters have the corresponding conversion formula.



8. Max connection interval: 6-3200, after the input field is cleared, there will be relevant tips, parameters have the corresponding conversion formula.
9. Slope : 800-2000, after the input field is cleared, there will be relevant tips, calculation formula reference document.
10. Offset:-9999-9999, after the input field is cleared, there will be relevant tips, calculation formula reference document.
11. Click DETERMIN, If no changes are made to the parameters that will take effect after the restart , no pop up restart prompt box, Click DETERMIN to return to the device details screen. If you change the parameters, will pop up an additional restart prompt box, and then click restart, will return to the home page, please reconnect the device.

3.3 Battery Replacement Instructions

The transmitter is powered by a non-chargeable lipo battery. When the battery is low after a certain period of use (the transmitter will report a low-voltage alarm) , the same type battery should be replaced (MODEL:

ER18505M + MOLEX 264-2P plug, 12CM long) .

Battery replacement method

- 1) Unscrew the black plastic cap, disconnect the battery connector, and remove the battery;
- 2) Replace with same specification battery and connect the connector of the battery;
- 3) Cover with a black plastic cap and screw tight
- 4) Battery replacement complete.

3.4 Description of Bluetooth feature value

Refer to “CS-IWPT-301-XY Bluetooth temperature and pressure transmitter terminal characteristics description”.

4 Configuration Accessory

Client can select the accessories according to the content of the accessory selection table shown in Table 1.

Note: If you have any objections to the selection, please contact the supplier.

Table 1 Accessory selection table

Accessory's part no.	Description	Remark
PL2303	TTL TO USB converter, which is used when customers make products by themselves. One cable is issued by default for a batch of orders	



ER18505M	In order to fast delivery, the sample does not have the battery by default, if the battery is needed, please indicate when purchasing.	
3 core cable with aviation plug	Used to connect the PT1000 external temperature transmitter. 1 by Default	Picture 4
2 core cable with aviation plug	Used to connect the Power	Picture 3
PT1000 transmitter	External, customer - provided.	

5.Troubleshooting

When the phone does not communicate with the transmitter.

- 1) check if the phone is too far away from the transmitter.
- 2) check whether the battery is not plugged in well, the battery voltage is less than 2.8 v, then the power is insufficient, the battery should be replaced.
- 3) check if the Bluetooth receiver is working properly.

If you have any further questions, please contact the supplier.

6. Declaration

The company reserves the right to modify the specifications and contents of this specification without prior notice. Due to product update, some details of this document may not conform to the product. Please refer to the material object. We reserve the right to interpret this document.

