

Bluetooth LE Temperature Humidity Sensor Datasheet

Model No.: JW1407HT

V1.0

Model	Description
JW1407HT-9001A	Temperature, humidity, waterdrop shape, IP67 waterproof, strong case with 4 screws, 2 years battery life, white/black/blue/pink, includes 1pc CR2477 / CR2450 coin battery, CE & RoHS & FCC-ID certification

The Bluetooth LE Temperature Humidity Sensor JW1407HT is a low energy Bluetooth® 4.2 digital broadcasting device, it collects high accurate sensor values and advertises to Android phone, Android pad, iPhone, iPad, Bluetooth LE gateway. It could be used for house, office, warehouse, cold-chain vehicle, refrigerator, etc.

JW1407HT measures Temperature (-40~60°C), Humidity(0~100%RH).

FEATURES

- Open data protocol
- 2 years battery lifetime at default settings
- Support changing working parameters:
Transmitting Power, Advertising Interval, Measuring Interval.

CERTIFICATIONS

- RoHS
- CE Regulations (Included EN300328/301489/60950/62479)
- FCC-ID



SPECIFICATION

JW1407HT Bluetooth LE Temperature Sensor

Compatibility

- Supported iOS 7.0+ and Android 5.0+ system;
- Compatible with all Bluetooth® 4.2 (BLE) devices;

Replaceable battery and Battery Level

- Replaceable coin battery;
- Easy to get the real-time battery level notification;

Soft Reboot

- Not supported;

OTA and J-Link

- Upgrade via Over-The-Air not supported;
- Reserved J-Link port on the board for programming;

Configurable Parameters

- Transmitting Power, Advertising Interval, Measuring Interval.

- App Name 'T-Sensor';

Transmission Power Levels

- 8 adjustable levels.
- Transmission power range: -30, -20, -16, -12, -8, -4, 0, +4dBm.

Measuring ability:

Humidity range 0-100%, accuracy $\pm 3\%$ RH
Temperature range -20-60°C, accuracy $\pm 0.3^\circ\text{C}$

Security

- No password;
- AES HW encryption

Wearable

- Key chain.

Connection Mode

- Advertising, connectable;
- Connected, can not be scanned, can configure working parameters.

ACTIVATE JW1407HT

- JW1407HT activates once battery is installed. - Reinstall battery to reboot;

WORKING PARAMETERS

Item	Description	Default value
Transmitting Power	Range: -30, -20, -16, -12, -8, -4, 0, +4. -30 is the most weak signal. +4 is the strongest signal. Unit is dBm.	+4 dBm
Advertising Interval	Suggested parameters: 1000, 2000, 3000, 4000, 5000, Unit is milliseconds.	1000 ms
Measuring Interval	Suggested parameters: 1000, 2000, 3000, 4000, 5000, Unit is milliseconds.	5000 ms

HOW TO CONFIGURE WORKING PARAMETERS

1, Connect JW1407HT device by mobile app.

2, Service UUID: 6e400001-b5a3-f393-e0a9-e50e24dcca9e. You can communicate with device via this service.

TX Characteristic UUID: 6e400003-b5a3-f393-e0a9-e50e24dcca9e, you should enable its NOTIFY feature, otherwise mobile app can not receive data from sensor device.

RX Characteristic UUID: 6e400002-b5a3-f393-e0a9-e50e24dcca9e, you can write data/command to sensor device via this characteristic.

3, Communicate protocol

1) Query Transmitting power

A. Write RX: 'T', 'P', '?'

B. TX Notify: 'T', 'P', value_byte1, value_byte2, value_byte3, value_byte4. You should combine the last 4 bytes to a int value. Example: $\text{int transmitPower} = ((\text{int})\text{value_byte1}) \ll 24 \mid ((\text{int})\text{value_byte2}) \ll 16 \mid ((\text{int})\text{value_byte3}) \ll 8 \mid ((\text{int})\text{value_byte4}) \ll 0;$

2) Query Advertisement interval

A. Write RX: 'A', 'I', '?'

B. TX Notify: 'A', 'I', value_byte1, value_byte2, value_byte3, value_byte4. You should combine the last 4 bytes to a int value. Example: $\text{int advInterval_milliseconds} = ((\text{int})\text{value_byte1}) \ll 24 \mid ((\text{int})\text{value_byte2}) \ll 16 \mid ((\text{int})\text{value_byte3}) \ll 8 \mid ((\text{int})\text{value_byte4}) \ll 0;$

3) Query Measurement interval

A. Write RX: 'M', 'I', '?'

B. TX Notify: 'M', 'I', value_byte1, value_byte2, value_byte3, value_byte4. You should combine the last 4 bytes to a int value. Example: $\text{int measureInterval_milliseconds} = ((\text{int})\text{value_byte1}) \ll 24 \mid ((\text{int})\text{value_byte2}) \ll 16 \mid ((\text{int})\text{value_byte3}) \ll 8 \mid ((\text{int})\text{value_byte4}) \ll 0;$

4) Configure Transmitting power

A. Write RX: 'T', 'P', value_byte1, value_byte2, value_byte3, value_byte4

Example to prepare value bytes:

```
int transmitPower = +4;
Byte value_byte1 = (Byte) (transmitPower << 0 >> 24);
Byte value_byte2 = (Byte) (transmitPower << 8 >> 24);
Byte value_byte3 = (Byte) (transmitPower << 16 >> 24);
Byte value_byte4 = (Byte) (transmitPower << 24 >> 24);
```

B. TX Notify: 'P', 'R'. Means Parameters are already received by device.

5) Configure Advertisement interval

A. Write RX: 'A', 'I', value_byte1, value_byte2, value_byte3, value_byte4

Example to prepare value bytes:

```
int advInterval_milliseconds = 2000;
Byte value_byte1 = (Byte) (advInterval_milliseconds << 0 >> 24);
Byte value_byte2 = (Byte) (advInterval_milliseconds << 8 >> 24);
Byte value_byte3 = (Byte) (advInterval_milliseconds << 16 >> 24);
Byte value_byte4 = (Byte) (advInterval_milliseconds << 24 >> 24);
```

B. TX Notify: 'P', 'R'. Means Parameters are already received by device.

6) Configure Measurement interval

A. Write RX: 'M', 'I', value_byte1, value_byte2, value_byte3, value_byte4

Example to prepare value bytes:

```
int measureInterval_milliseconds = 2000;
Byte value_byte1 = (Byte) (measureInterval_milliseconds << 0 >> 24);
Byte value_byte2 = (Byte) (measureInterval_milliseconds << 8 >> 24);
Byte value_byte3 = (Byte) (measureInterval_milliseconds << 16 >> 24);
Byte value_byte4 = (Byte) (measureInterval_milliseconds << 24 >> 24);
```

B. TX Notify: 'P', 'R'. Means Parameters are already received by device.

* Previously produced devices does not support configuration, please reinstall battery to reboot if device hangs when configure failed.

ELECTRONIC PARAMETERS

Item	Value	Remarks
Case Color	Black/Blue/White/Pink	Customize color if ≥ 3000 pcs
Battery Model	1 x CR2477 / CR2450	1pc CR2477 / CR2450 coin battery, 3.0V
Operation Voltage	1.8~3.6V	DC
Transmission Current	9.5mA(Max.)	Test at 0dBm transmission power
Transmission Range	50 meters	Maximum
Antenna	50ohm	On board / PCB Antenna
Net Weight	17.5g	With battery
Size	49.5x30x13.5 mm	Null

TECHNICAL SUPPORT

Item	File Name
Datasheet	Sensor_JW1407HT_BLE_Temperature_Humidity_Sensor_Datasheet_V1.0.1.pdf
SDK-Android	JoywayLib.Android.zip
SDK-iOS	JoywayLib.iOS.zip
App	T-Sensor.apk

* Joyway sales team will send you these documents after the sample arrived.

PACKING INFORMATION

Details	PP Bag	Carton
Quantity(JW1407HT)	1 pc	200 pcs
Net Weight	17.5 g	3.5 kg
Gross Weight	17.9 g	3.84 kg
Size	60x90x13.8 mm	260x150x180 mm

DECLARATION

The contents of this datasheet are subject to change without prior notice for further improvement. Joyway team reserves the right to explain all the terms of this datasheet.

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Last Modified at 2023-7-19

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