

# Bluetooth LE

## Air Pressure Temperature Altitude Sensor

### Datasheet

Model No.: JW1407PTA

V1.0

<b>Model</b>	<b>Description</b>
JW1407PTA-9001A JW1407HT-9001A	Temperature, humidity, air-pressure, altitude, 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 Air pressure Temperature Altitude Sensor JW1407PTA 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.

**JW1407PTA measures Temperature (0~60°C), Air-pressure, Altitude.**

## 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

JW1407PTA / 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

Air pressure range 300~1200mbar, accuracy  $\pm 1.5$ mbar  
Temperature range 0~60°C, accuracy  $\pm 0.6$  meter  
Altitude Resolution 0.1 meter

### Security

- No password;
- AES HW encryption

### Wearable

- Key chain.

### Connection Mode

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

## ACTIVATE JW1407PTA

- JW1407PTA 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 PARAMETERS

1, Connect JW1407PTA/HT 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: `int measureInterval_milliseconds = ((int)value_byte1) << 24 | ((int)value_byte2) << 16 | ((int)value_byte3) << 8 | ((int)value_byte4) << 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 >= 3000pcs
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_JW1407PTA_BLE_AirPressure_Temperature_Altitude_Datasheet_V1.0.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(JW1407PTA / 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.

## CONTACT JOYWAY

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