

TagBeacon User Manual

Model: JW1404BV118

V1.0.3

Model	Description
JW1404BV118	Tag Beacon, waterdrop shape, IP54 waterproof, 1 years battery life, white/black/green/pink, includes 1pc CR2032 coin battery, CE & RoHS & FCC-ID certification

The Tag Beacon JW1404BV118 is a low energy Bluetooth® 5.0 digital broadcasting device, it is designed for the commercial advertising, indoor location-based service, event monitor, asset tracking etc.

It broadcasts standard iBeacon data with configurable parameters. Its data can be scanned and interpreted by iOS and Android devices. BLE gateway can scan and communicate with it too.

FEATURES

- Programmed standard iBeacon/Eddystone firmware
- 1+ years battery lifetime at default settings
- The max. 50 meters advertising distance
- Small size, user-friendly and portable
- Easy to print the logo on the center of top case



CERTIFICATIONS

- iBeacon MFi License
- RoHS
- CE
- FCC-ID

SPECIFICATION

Compatibility

- (1) BLE 5.0
- (2) Supported iOS 7.0+ and Android 4.3+ system
- (3) Apple iBeacon standard

Power supply

- (1) Replaceable coin battery;
- (2) Advertise battery level in device name;

Soft Reboot, OTA and J-Link

- (1) Support soft reboot;
- (2) Support DFU/OTA;
- (3) Reserved J-Link/SWD port on the board for programming;

Interface

- (1) One Button.
- (2) One RGB led light.
- (3) One Buzzer (optional).
- (4) One Vibration motor (optional).

Configurable Parameters

- (1) Password, Device name, UUID, Major id, Minor id, TX power, Rssi at one meter, Advertising interval.

Transmission Power Levels

- (1) available values: -20, -16, -12, -8, -4, 0, +4
- (2) unit: dBm

Security

- (1) Need password while connecting;
- (2) AES HW encryption

Installation

- (1) Key chain;
- (2) Neck-string;

Connection Mode

- (1) Always connectable and configurable while advertising.

CONFIGURABLE PARAMETERS

Item	Default Value	Note
Device Password	(empty)	Maximum 12 characters
UUID	0x59,0x1f,0xcd,0x82,0xfd,0x55,0x46,0x0b,0x86,0xd5,0x29,0x6b,0x1b,0x1e,0x54,0x96	Total 16 bytes
Major	2025	Range 0~65535
Minor	1	Range 0~65535
TX Power	0dBm	Support values: -20, -16, -12, -8, -4, 0, 4 dBm
Transmission Interval	1000ms	Support values: 100~10000ms. Input value must be an integer multiple of 100 milliseconds.
Device Name	JW1409BV8	Maximum 12 characters

BUILD YOUR OWN APP TO COMMUNICATE WITH BEACON

Summary steps:

- 1, Scan and connect beacon, discover services, enable notify feature so that app can receive data from beacon.
- 2, Login beacon with password, otherwise beacon will disconnect soon.
- 3, Receive beacon data such as button events.

Detail steps:

1, Scan and connect beacon, discover services, enable notify feature so that app can receive data from beacon.

Scan for beacon name: JW1404BV118.

Once you connected beacon, you should discover service for UUID (6e400001-b5a3-f393-e0a9-e50e24dcca9e).

It has 2 Characteristics:

- (1) TX, beacon send data to app by it.

UUID: 6e400003-b5a3-f393-e0a9-e50e24dcca9e.

You should enable its NOTIFY feature.

- (2) RX, app write its value so that beacon can receive these data from app.

UUID: 6e400002-b5a3-f393-e0a9-e50e24dcca9e.

2, Login beacon with password, otherwise beacon will disconnect soon.

App write RX value with data, which contains password. Password max length is 12 chars.

Data format is:

0x00, 0x01, //Communicate code, means 'login beacon'

```
12,           // following byte count, password length is 12 bytes, so it is a const value.
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 //default password is empty but
                should be filled with 0x00.
```

Here is demo code to build data content with password '12345':

```
byte[] data = { 0x00, 0x01,
                12,
                0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00};
String passwordStr = "12345";
ArrayList<Byte> passwordBytes = new ArrayList();
char[] chars = passwordStr.toCharArray();
int charCount = chars.length;
for (int i = 0; i < charCount; i++) {
    int n = chars[i];
    passwordBytes.Add(Byte.parseByte(n.toString()));
}
System.arraycopy(passwordBytes, 0, data, 3, passwordBytes.length);
```

If password is correct, beacon will reply result:

```
0x00, 0x02, // Communicate code, means 'login beacon result'
0x01,       // following byte count
0x00        // password correct, other values means password not accepted.
```

3, Receive beacon data such as button events.

When beacon button event triggered, it will send data to app via TX characteristic. Data format is:

```
0x00, 0x0B, // Communicate code, means 'beacon button event'
0x01,       // following byte count
0x01        // button event type. 0x00=long press; 0x01=single click; 0x02=double clicks, etc.
```

ELECTRONIC PARAMETERS

Item	Value	Remarks
Case Color	Black/Blue/White/Pink	Customize color if >= 3000pcs
Battery Model	1 x CR2032	1pc CR2032 coin battery, 3.0V
Operation Voltage	1.8~3.6V	DC
Transmission Current	4.6 mA (peek current)	Test at 0dBm transmission power
Transmission Range	50 meters	Maximum
Antenna	50 ohm	On board / PCB Antenna
Net Weight	8.5 g	With battery
Size	52x31x11 mm	

TECHNICAL SUPPORT

Item	Version	Download	Description
Android SDK	V1.5.5	JoywayLib.Android.zip	1. Easy BLE programming interface. 2. Helper functions. 3. Demo app.
iOS SDK	V1.0.0	JoywayLib.iOS.zip	
Tool App	V1.4.9	JoywayBeacon.apk	1. Scan all BLE devices. 2. Configure Joyway iBeacon, Gateway, Sensors.

PACKING INFORMATION

Details	PP Bag	Carton
Quantity(JW1404)	1 pc	200 pcs
Net Weight	8.5 g	1.7 kg
Gross Weight	8.9 g	2.04 kg
Size	60x90x13.8 mm	260x150x180 mm

USER GUIDE

1. Change the battery

- **Remove old battery:** Anti-clock rotate battery cover in the backside of beacon, remove the cover, you can see the logo side of battery, remove the battery.
- **Install new battery:** Install the same model battery(CR2032), let logo side up. Install cover and clock rotate it.

2. Power On & Reboot

- **Automatic Startup:** The beacon will automatically power on and begin broadcasting (advertising) as soon as you install battery.
- **Device Name & Battery:** The advertised device name includes the current battery level at the end (e.g., JW1404BV118_100%).

- **Automatic Reboot:** The device will automatically reboot in the following situations:
 - Reinstall battery.
 - When the connection with the mobile app is disconnected.

3. Configuring the Device

- **Required Tool:** Use the 'JoywayBeacon' Android app to configure all working parameters.
- **Advertisement Modes (Adv1 & Adv2):** The beacon cycles between two advertising data packets. It broadcasts Adv1 first, followed by Adv2. Both advertisements are connectable.

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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