

Beacon B1 Instruction



Overview

Congratulations on your New Beacon device. To develop basic understandings and get the most out of your purchase, be sure to carefully read this manual and keep it on hand for future reference.

Features:

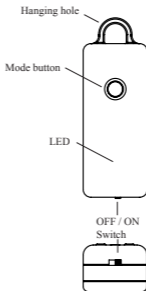
- Bluetooth SIG Qualified product
- Apple's iBeacon compatible
- Support Android 4.3 or later
- Security password setting
- Over-the-Air Firmware Upgradable
- Configurable to suit your Apps
- No Overhype
- Long battery life with 2pcs AAA battery

Specification:

Standard	Bluetooth 4.0 Low Energy
Chipset & Stack	Texas Instruments's CC254x SoC and BLE Stack
Antenna Type	Multilayer Chip Antenna
Physical Range	Up to 50 meters (Depends on environment)
Power Supply	Two triple-A (3A/AAA) batteries
Current Consumption (average)	0.25mA
Battery Life	4500+ hours; over 1 year (operating 12 hours/ day)
Dimension	(W)25mm x (H)70mm x (D)18.3mm
Net Weight	15gram

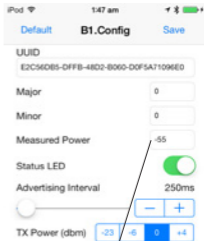
How to maintenance B1

- 1) Download our open sourced Sample Configuration App <http://www.redbear.net/support.html>
- 2) Compile & Run the App on iOS device, it will show "Searching for B1 in range".
- 3) Switch ON the Beacon: Green light turns on. (now in broadcasting mode)
by default the green LED is ON. It will broadcast iBeacon signal periodically.
- 4) Press mode button: Red light turns on. (now in maintenance mode)
- 5) App found B1, you can modify Beacon characteristics:
(See picture at right)



FCC ID: 2ABXJ-B-B1
BLE PRODUCT ID: 35176
MADE IN P.R.C.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Tip: Adjust the value of iBeacon signal "Measured Power" to aid iOS determining more accurate distance estimation, check out our support page.

Beacon B1 Instruction



Bluetooth Services

Under maintenance mode, there are four Bluetooth Low Energy services available.

RedBear Beacon Service UUID: **B0702980-A295-A8AB-F734-031A98A512DE**

Device Information Service UUID: **180A**

There are two characteristics you should pay attention to.

1. UUID: **2A28**, Software Revision String

- this represents the software revision for the Beacon software within B1, the latest version is "20131128"

2. UUID: **38837046-FE96-4335-B751-D4826198F337**, Device Name String

- you can rename the broadcasting device name of your B1

Battery Service UUID: **180F**

- showing the remain battery life as a percentage

- please noted that the Red LED light on B1 will keep flashing when battery level fall to 30% or below

Firmware Upgrade Service UUID: **E6775403-F0DD-40C4-87DB-95E755738AD1**

- reserved for Over-The-Air firmware upgrade

RedBear Beacon Service

Under RedBear Beacon Service, there are seven Bluetooth Low Energy characteristics.

1. iBeacon UUID UUID: **0xB0702881-A295-A8AB-F734-031A98A512DE**

- a unique 16-bytes value in HEX for advertising

2. iBeacon Major identity ID UUID: **0xB0702882-A295-A8AB-F734-031A98A512DE**

- a 2-bytes value, ranging from 0 to 65535 (0xFFFF)

3. iBeacon Minor identity ID UUID: **0xB0702883-A295-A8AB-F734-031A98A512DE**

- a 2-bytes value, ranging from 0 to 65535 (0xFFFF)

4. iBeacon Measured Power UUID: **0xB0702884-A295-A8AB-F734-031A98A512DE**

- a 1-byte signed value, ranging from -100 to 0

- This is an average RSSI (Received Signal Strength Indication) of the beacon measured at approximately one meter from an iOS device. This is a reference value in order for iOS to determine the distance between an iOS device and a beacon.

- Please refer to Apple's AirLocate sample about how to obtain Measured Power for your iBeacon

5. LED Switch UUID: **0xB0702885-A295-A8AB-F734-031A98A512DE**

- a 1-byte value used to control the on-board green LED, either OFF (0x00) or ON (0x01)

- default is ON

6. iBeacon Advertising Interval UUID: **0xB0702886-A295-A8AB-F734-031A98A512DE**

- a 2-bytes value, ranging from 100ms (0x0064) to 10000ms (0x2710) on a incremental of 5ms unit

- default is 250ms

- the time between each iBeacon signal broadcasted; shorter time will have better response time and accuracy, however this will increase the power consumption due to more broadcasting in the same period of time.

7. iBeacon Output Power UUID: **0xB0702887-A295-A8AB-F734-031A98A512DE**

- a 1-byte value, four available settings: -23dBm (0x00), -6dBm (0x01), 0dBm (0x02) or 4dBm (0x03)

- default is 0dBm (*our beacon is optimized to run at 0dBm.)

- the output power setting of the Texas Instruments CC254x IC; higher power should mean longer range and higher power consumption.