

AnkhMaway iBeacon Specification

V2.0

● Introduction

AnkhMaway offers complete indoor Bluetooth BLE solutions for indoor navigation with beacon tag hardware and open interface to support any indoor navigation deployment. We offer stand-alone tags and services or complete professional services, engineering, and custom beacon tag designs. You can do everything you want to without any limit of us. For the development documents matters, please contact us.

● Products Details

iBeacon can work as an independent system, and lithium batteries supply power for these models. It has 3 different working modes, sleep mode, connectable mode and non-connectable mode. It makes the best use of the battery power. For example, it can standby over 5(CR2032) or 16(CR2450) years when work in sleeping mode, much longer than the life of the battery. For developers, we provide the Android and IOS SDK, and all the interface developed completely by us, all of the parameters can be reconfigured, including Proximity UUID, Major, Minor and Power. In order to meet different customers' needs, interval rate can also be configured, which ranges from 100 ms to 10 s. Besides, hardware TX power can be configured, and configurable range is 4 dBm to -40 dBm. Low cost customizing housing would be provided to potential customers.

● Features

- 3 working modes: Sleeping, Connectable, and Non-connectable. The modes can be switched freely.
- Built-in Beacon firmware. Compatible with BLE 4.0.
- Built-in a coin battery (CR2032 or CR2450).
- Accurate digital RSSI. Excellent link budget (up to 97 dB).
- High performance and low power, an available time for 5 years or more.
- Enable remote application, AES security coprocessor.
- Unique power management pattern

- Ultra wide range transmission power: 4Db to -40Db.
- Stable performance and controllable state.
- All the interface completely can be communicated and programmed. Developers do not need to rely on the SDK for development. The requirement of hardware interface can be customized (achieved a certain number).
- All the parameters can be configured (UUID, Major, Minor, Measured Power, TX Power, etc.).
- Encrypted Parameter: A password is needed when access to configure.
- Provide IOS and Android SDK.
- Apple iBeacon certified.
- Support 'Sleep' and 'Wake-up'.

● iBeacon Parameter Default Setting

- UUID: EBEFD08370A247C89837E7B5634DF524
- Major and minor identifier: 0x0001, 0x0001
- Default pairing password: 0x666666
- Power Value: 0xCB
- Broadcast Interval: 0x0A
- It can be rang when starting or wake-up
- The default mode is sleepingg

● Working Mode Detail

There are 3 types working mode of Beacons, the first is sleeping mode, the second is connectable mode, and the third is non-connectable mode.

Sleeping Mode

Beacon default stays as sleep mode, and this model waits for being waken-up.

Connectable Mode

Beacons can only be connected in this mode, which needs to be triggered by tapping it, and it will last for 45 seconds. It means this Beacon can be connected in 45 seconds after being triggered, and Beacon will restore to sleeping mode or non-connectable mode if it is not connected in 45 seconds.

Non-Connectable Mode

Beacons can broadcast its data properly in the non-connectable mode. Beacon will begin to work normally when configured to this mode and it cannot be connected.

If want to connect it again, you must tap it 5 times, and then it will turn to connectable mode, and it must be connected within 45 seconds. Once timeout, it will restore to non-connectable mode.

● Electronic Parameters

Item	Test Data	Remarks
Chip	nRF51822	Nordic
Battery model	CR2032 or 2450	Coin battery, 3.0Vdc, 1pc
Operation Voltage	2.0-3.6V	DC
Operation Frequency	2400-2483.5MHz	Programmable
Frequency Error	+/- 20KHz	Null
Modulation	Q-QPSK	Null
Standby current	12uA	Null
Output Power	4 dBm - -40dBm	Programmable
Receiving Sensitivity	-93dBm	High gain mode
Transmission distance	40 or 70 meters	BER<0.1%, Open space
Antenna	50ohm	Onboard
Size	27 x 27 x 7.6 mm 40 x 40 x 13.6 mm	Null

● Operation state and power consumption (interval rate 1s)

State	Operation Current (uA)
Sleeping Mode	3.6
Connectable Mode	142
Non-Connectable Mode	22.5

● Important Notice

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