Ankhmaway Wristband Beacon

User Guide V1.0

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 without any limit of us. For the development documents matters, please contact us.

Product Details

Ankhmaway Wristband Beacon is developed and produced based on BLE 4.0. With the battery is rechargeable battery design. For developers, we provide the open source for Android and IOS SDK, and our firmware API is opened for developers, so the developers can develop it without using our SDK. For iBeacon agreement, all of the parameters can be reconfigured, including Proximity UUID, Major, Minor and Power. In order to meet different customers' needs, broadcast interval can also be set, which ranges from 100ms to 10s. Besides, hardware transmitted power can be configured, configurable range is 4 dBm to -40 dBm. Low cost customizing housing would be provided to potential customers.

Features

- Always connectable.
- Built-in Beacon firmware.
- Compatible with BLE.
- Accurate digital RSSI. Excellent link budget (up to 97dB).
- Ultra wide range transmission power: 4dBm— -40dBm.
- Stable performance and controllable state.
- All the parameters can be configured (UUID, Major, Minor, Measured Power, TX Power, etc.). Encrypted parameter, a password is needed when access to configure.
- Apple iBeacon certified.
- Support the background management of battery.
-Work only when it is in motion.

Ankhmaway Wristband Beacon Parameter Default Setting

-UUID: EBEFD083-70A2-47C8-9837-E7B5634DF524

-Major and minor identifier: 0x0001, 0x0001

-Default pairing password: 0x666666

-Power Value: 0xCB

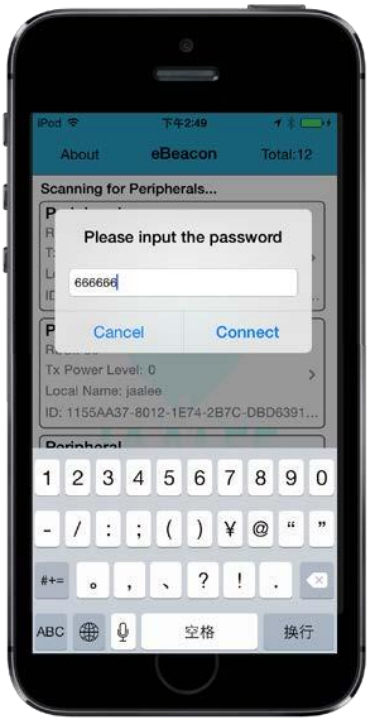
-Broadcast Interval: 0x0A

How to Start Using

Step 1: Download the latest version eBeacon software (version 2.8.6) from apple store.

Step 2: Open the Bluetooth and eBeacon application. Step 3: Shake the Beacon and then it can be connected.

Step 4: Click on the Beacon in the eBeacon software that need to configure, and enter the password to connect.Step 5: Now, you can configure and use Ankhmaway Beacon normally.



Working Mode Detail

There are two types working mode of Ankhmaway Beacon. The first is sleep mode, the second is working mode.

Sleep Mode

When Beacon stays asleep, this mode will wait for being wake-up.

Working Mode

When shake the beacon, the beacon will switch from sleep mode to working mode and stay in working mode for a period of time. The working period can be configured. Please refer to Service 0xFF70. Under working mode, the beacon will broadcast the information and stay connectable.

Services Introduction

Service 0xFFF0

Characteristic	Property	Value Length	Function	Write example
0xFFF1	Read/Write	2 Bytes	Input Password	0x666666
0xFFF2	Read/Write	16Bytes	Configure UUID	0xEBEFD08370A247C89837E7B5634DF52
0xFFF3	Read/Write	2 Bytes	Configure Major value	0x0001
0xFFF4	Read/Write	2 Bytes	Configure Minor value	0x0001
0xFFF5	Read/Write	1 Bytes	Configure Power value	0xC5
0xFFF6	Read/Write	3 Bytes	Configure Broadcast Interval	0x0A
0xFFF7	Read/Write	2 Bytes	Configure Mfgr	0x0059
0xFFF8	Read/Write	3 Bytes	Change Password	0x123456

Note: The default configuration password is 0x666666, broadcast interval in units of 100 milliseconds, 0x0A is equivalent to 10 * 100 (ms) = 1(s). When connected, the user must input the password to 0xfff1 port within 1 minute, otherwise the Beacon will disconnect with your phone.

Service 0xFF80

Characteristic	Property	Value Length	Function	Write example
0x2A90	Read/Write	18 Bytes	Configure Device Name	0x6A61616C6565

Note: The value needs to be input the port should be converted to hexadecimal ASCII characters. For example, the corresponding hexadecimal ASCII for Jaalee is{0x6A,0x61,0x61,0x6C,0x65,0x65}, then the value should be input is 0x6A61616C6565.

Service 0x1804

Characteristic	Property	Value Length	Function	Write example
0x2A07	Read/Write	1 Bytes	Configure TX Power	0x01

Note: The relationship between the value input and its corresponding TX Power is as the following table.

Write Value	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09
TX Power(dBm)	4	0	-4	-8	-12	-16	-20	-30	-40

Service 0xFF70

Characteristic	Property	Value Length	Function	Write example
0x2A80	Read/Write	1 Bytes	Configure Beacon State	0x02: iBeacon channel enable. 0x08: Custom channel enable 0x0A:Both enable
0x2A81	Read/Write	1 Bytes	configure the broadcast rate	0x0A
0x2A83	Read/Write	1 Bytes	Configuring the intensity value of the motion detection	0x09
0x2A86	Read/Write	2 Bytes	Configure working time when motion detected	0x0003(0x0001-0x1 C20) Unit is one Minute.

Note: Working Time is the period of that the beacon will broadcast after it detects motion. If it does not detect any motion during working time, Beacon will turn to sleep mode. Contrary to the first situation, the beacon will keep in working mode.

Service 0x1802

Characteristic	Property	Value Length	Function	Write example
0x2A06	Read/Write	1 Bytes	Call Beacon	0x01

Note: When put in value 0x01 to this port, it will shake.

Service 0xAA10

Characteristic	Property	Value Length	Function	Write example
0xAA12	Read/Notify	1 Bytes	Detect motion	0x01
0xAA16	Read/Write	1 Bytes	Button press state	0x01

Service 0xFFD0

Characteristic	Property	Value Length	Function	Write example
0xFFD1	Read/Write	20 Bytes	The former 20 bytes of user-define channel data	0x0303d8fe0d16d8fe0021006a61616c656500
0xFFD2	Read/Write	8 Bytes	The latter 8 bytes of user-define channel data	0x0000000000000000
0xFFD3	Read	1 Bytes	The length of user-define channel data	0x12

Note: the data of user-define channel is 28 bytes at the most. If the data is less than 20 bytes, user only needs to write the data in Characteristic 0xFFD1. If not, user needs to write the former 20 bytes of the data in Characteristic 0xFFD1 and write the latter bytes in Characteristic 0xFFD2.

Service 0x180F

Characteristic	Property	Value Length	Function	Write example
0x2A19	Read/Notify	1 Bytes	Battery level	0x64(100%)

Note: Read the battery level.

Key Words

Power Value: This value represents the power value mobile scanned when the distance between Beacon and phone is within a meter.

TX Power: This value represents the Beacon's firmware Transmit Power

RSSI: The value is the signal strength of the scanned device which can be used to measure the distance

Electronic Parameters

Item	Test Data	Remarks
Chip model	nRF51822	Nordic Semiconductor 256k
Battery model	Rechargeable battery	3.0Vdc, 1pc
Operation Voltage	1.8-3.6V	DC
Operation Frequency	2400-2483.5MHz	Programmable
Frequency Error	+/- 20KHz	Null
Modulation	Q-QPSK	Null
Sleep current	Around 3.6uA	Null
Output Power	4 dBm--40dBm	Programmable
Receiving Sensitivity	-93dBm	High gain mode
Transmission distance	15meters	BER<0.1%, Open space
Antenna	50ohm	Onboard
Size	23*2* 0.8cm	Null

Operation State and Power Consumption

State	Operation Current (μA)
Sleep Mode	Around 3.6
Working Mode(Broadcast Interval: 1s)	Around 25

Contact Us

We have been trying to provide better services and products! Ankhmaway Beacon makes life more simple and cheerful! If you are interested in our product, please contact us in following ways. We will provide the best service wholeheartedly for you!

Shenzhen AnkhMaway Electronics Technology Co., Ltd.

www.ankhmaway.com.cn

kylie@ankhmaway.com
vivien@ankhmaway.com

Tel: +86 755 2834 1116
Mob: +86 18942418755

Address:
3rdFloor, Building 4, LiangtangIndustrial Area, NanwanStreet, Longgang, Shenzhen, China, 518000