BC03 BLE Beacon

Specification

V1.0

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Content

1 Introduction

A BLE (Bluetooth Low Energy) Location Beacon is a small wireless device that transmits Bluetooth signals at regular intervals. These signals can be detected by Bluetooth-enabled devices, such as SenseCAP T1000 Tracker , SenseCAP T2000 Tracker , allowing them to determine their proximity to the beacon, building a location-based solution for indoor positioning, asset tracking and other applications.

1.1 Features

- **Bluetooth® LE 5.0**
- **Long battery life:** Replaceable lithium battery, more than 5 years (0dBm/500ms in default configuration).
- **Long-distance transmission:** Up to 130 meters in open areas.
- **High compatibility:** Compatible with iOS 7.0+ and Android 4.3+ systems

1.2 BLE Indoor Positioning System

GPS has proven its ability to locate outdoors. Now, we also tend to move to indoor positioning, and Bluetooth beacons make indoor precise positioning possible. Combine with SenseCAP T1000 Tracker or SenseCAP T2000 Tracker to build an indoor positioning solution.

SenseCAP T1000 is a compact LoRaWAN® tracker that utilizes GNSS/Wi-Fi/Bluetooth for precise indoor & outdoor location tracking. It's ideal for a variety of location-based applications.

Deploy Bluetooth beacons in your target area, the tracker receives the signal sent by the beacon, and the positioning accuracy is at the meter level (2-3 meters). It can realize functions such as asset tracking, route planning, reverse car search, etc., and can be integrated into applets and APPs.

SenseCAP T2000 Series is an industrial-grade LoRaWAN® asset tracker that supports GNSS, Bluetooth, and Wi-Fi (T2000-B) positioning, enabling reliable indoor and outdoor location tracking even in harsh environments. It is ideal for long-term asset monitoring and industrial location-based applications.

By deploying Bluetooth beacons in the target area, the T2000 tracker scans nearby BLE signals and uploads the beacon MAC addresses and RSSI values via LoRaWAN®. With proper beacon deployment, meter-level positioning accuracy (approximately 2–3 meters) can be achieved indoors. This enables use cases such as asset tracking, movement analysis, route monitoring, and indoor location assistance, and can be easily integrated with applications and management platforms.

Together, SenseCAP T1000 and T2000 provide a flexible and scalable BLE indoor positioning solution, covering both lightweight and industrial scenarios, and enabling continuous, reliable tracking across indoor and outdoor environments using a single LoRaWAN® infrastructure.

1.3 Button Description

Power on: Simply pull out the battery tab located on the back. The BC03 will power on automatically and the device's LED indicator will illuminate.

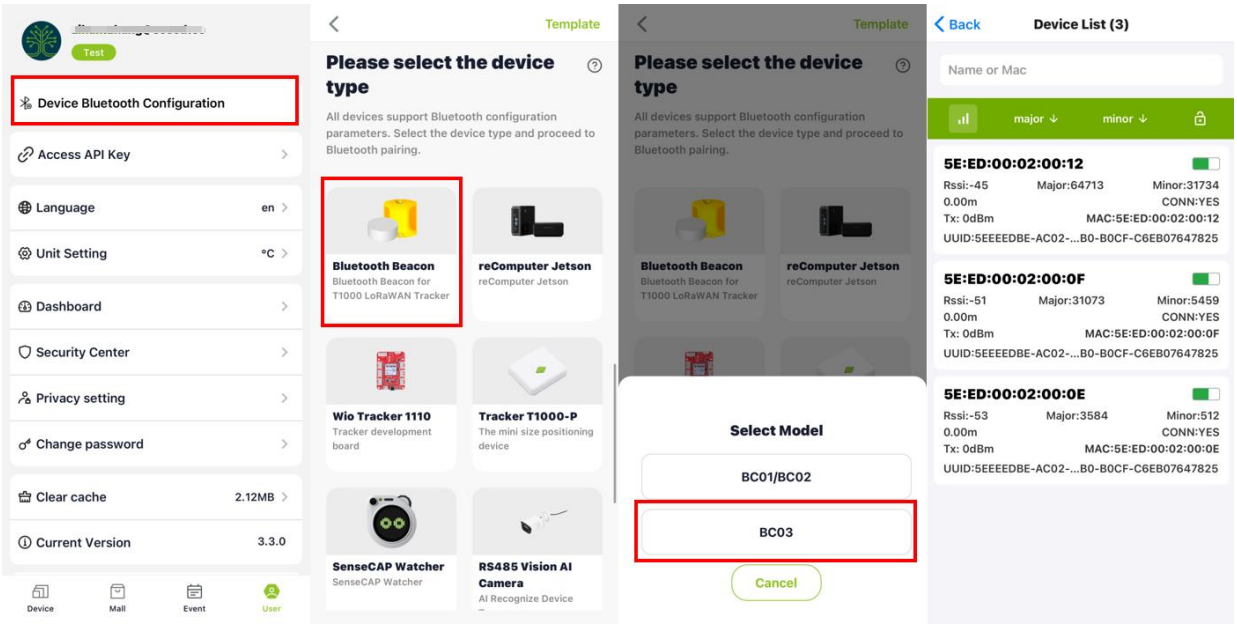
Power off: The device is designed for continuous operation and does not have a physical power button. To power off the device, the battery must be manually removed.

1.4 Configuration

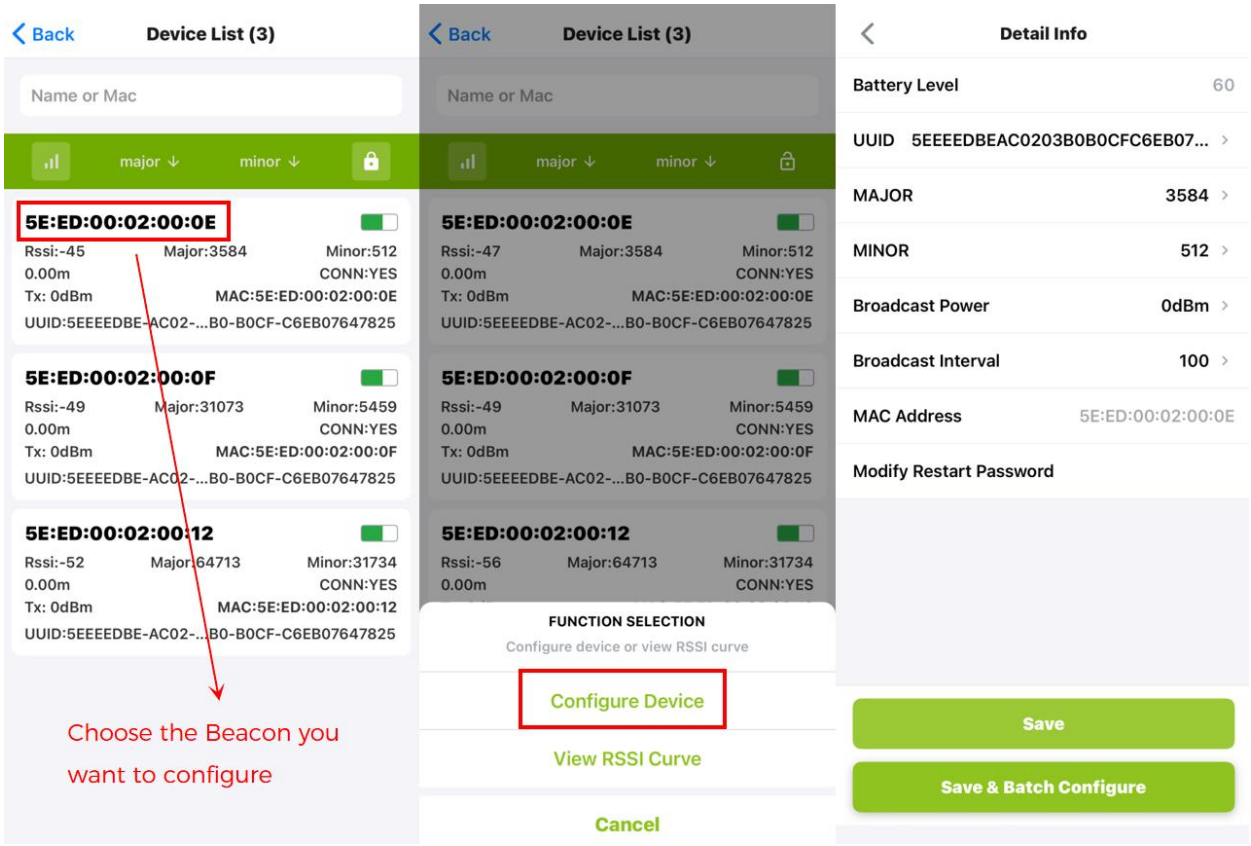
Parameter Viewing and Configuration with SenseCraft APP.

- **Device Bluetooth Configuration**

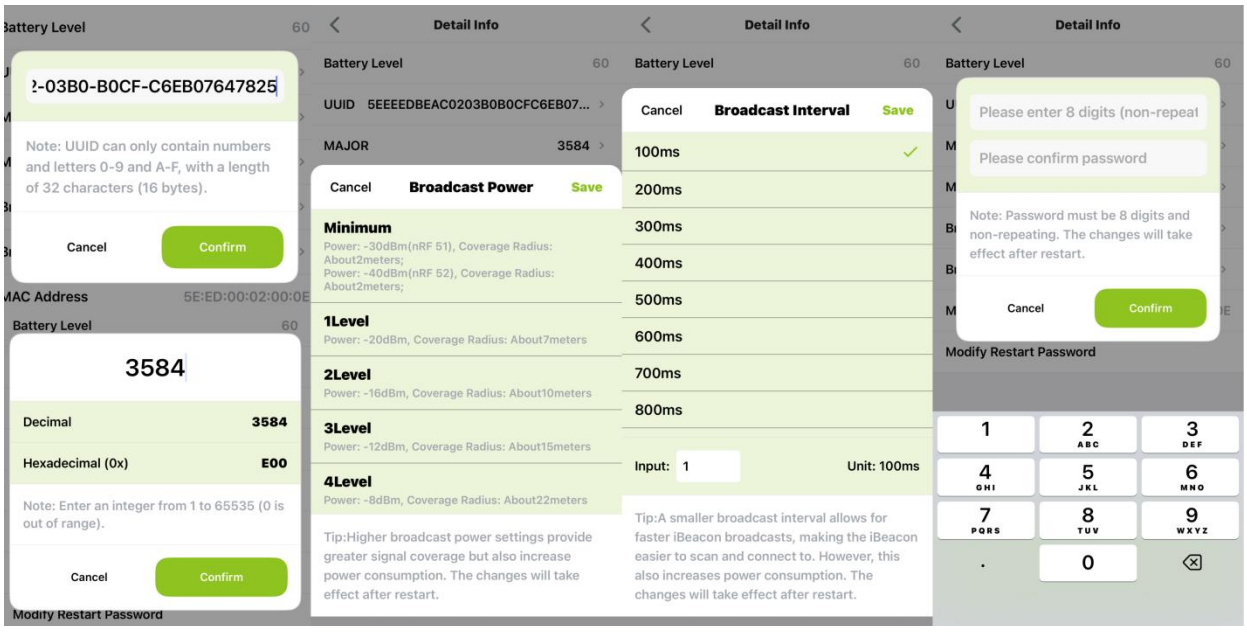
On the User page, click Device Bluetooth Configuration, then select Bluetooth Beacon and choose BC03. Then enter the Device List page.



Based on the device's MAC address, select the Beacon to be configured.

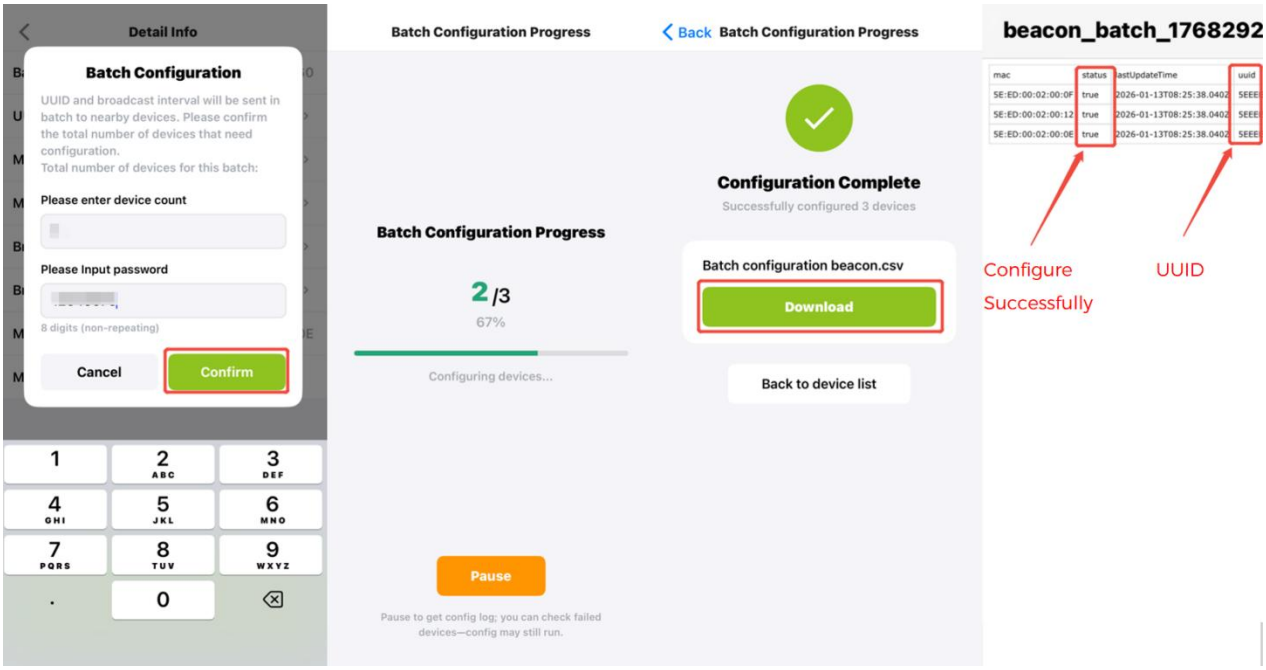


You can modify the device's UUID, MAJOR, MINOR, Broadcast Power, Broadcast Interval, and password.



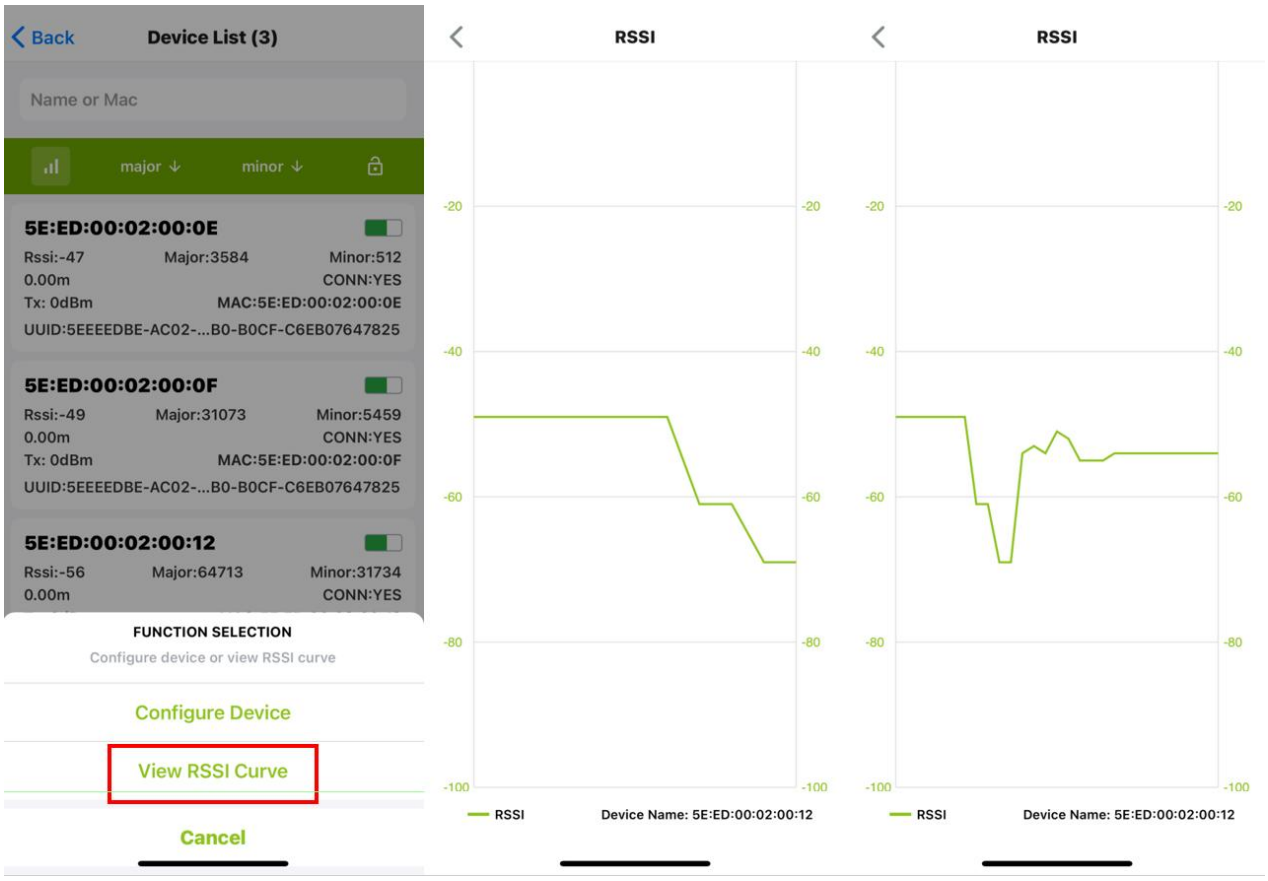
- **Batch Configuration**

Click Save & Batch Configuration, enter the number of devices and password, then begin the batch configuration. Once the progress bar completes, you can download the batch configuration beacon file and review the configuration status.



- **View RSSI Curve**

Choose the beacon, click RSSI Curve. You can view the dynamic RSSI curve.



2 Specification

2.1 General Specification

Material	ABS (anti-UV)
Color	White
IP rate	None
Dimension(L*W*H)	Φ50*20.5mm
Weight	45g(include battery)
Battery	Lithium-ion battery, 2400mAh
Chip	nRF52 series
Bluetooth Version	BLE 5.0
Bluetooth Protocol	iBeacon
Sensors	Support accelerometer, Option
LED	1 x Blue LED
APP	SenseCraft APP
Working temperature	-20~60℃
Battery life	More than 5 years (0dBm/500ms in default configuration).

2.2 Default broadcast parameters

Parameters	Default Value
UUID	5EEEDBCA-AC02-43B0-B0CF-C6EB07647825
Major	Automatically assigned from the device MAC address (lower 2 bytes)
Minor	Automatically assigned from the device MAC address (upper 2 bytes).
Measured power	-59 dBm
Tx Power	-40 ~ +4 dBm, default 0 dBm
Adv Interval	20ms ~ 30s,default 500ms
Password	12345678
Device Name	03
Battery Service	Battery icon display

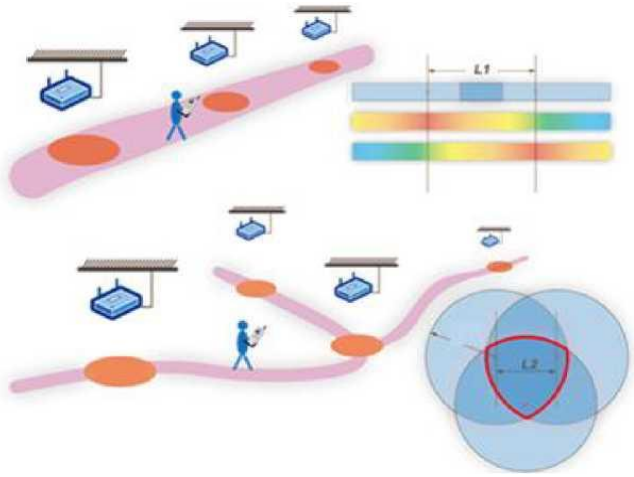
2.3 Compatibility information

System	Devices
BLE	BLE 4.2+
iOS 7.0+	iPhone 4S, iPhone 5/5C/5S, iPhone 6/6Plus/6S/6SPlus, iPhone 7/7Plus, iPad mini/mini2/4/Air/Pro,etc.
Android 4.3+	Samsung, XIAOMI, HUAWEI, ONEPLUS, vivo, OPPO ,etc.

3 Deployment

3.1 Deployment guidelines

- Bluetooth beacons are typically positioned 2.5-3m above ground level, with a horizontal spacing of 5-10m. These beacons can be deployed either in column formations or evenly distributed in triangular patterns, depending on the environment.



- Deployment strategies vary across scenarios. For instance, indoor settings might involve central (narrow) placement or triangular grid distribution (sparse). In indoor corridors, options include centerline deployment (for corridors around 3m wide) or dual-column arrangement (wider corridors). Avoid ceiling mounting in high-rise buildings (floor height > 4m). Opt instead for wall or low-level installation, approximately 5m apart. Outdoors, use a triangular grid pattern for open spaces.

The red ones are wrong examples and the blue ones are correct ones.

- In humid environments, factor in the product's waterproof rating during deployment to prevent prolonged water exposure.

- Maintain a distance from metallic, glass, or other obstructing elements when situating the product, should not be close to the corner.

***Note**: The deployment guidelines are for reference only. Actual deployment should be customized based on customer positioning algorithms, product installation surroundings, and testing conditions.*

3.2 3M glue/nail-free glue installation instructions

Installation conditions:

- The surface of the platform material on which the product is installed should be a flat, dry surface such as ceramics, glass/epoxy resin, acrylic, PBT, ABS, PC, and rigid PVC. Due to the differences in the viscosity and installability of different double-sided adhesive models, it is not recommended to use the default double-sided adhesive on walls with gray texture, incomplete drying, aging, and humidity (such as cement, gypsum board, etc.). There is a risk of shedding;
- Recommended installation temperature range: 20~40℃;
- The product should be installed away from metal, glass shielding or other obstructions; the product should not be deployed close to the corner.

Installation steps:

- Before installation: clean the surface of the application platform or tool to be pasted, and ensure that the pasted surface is dry and dust-free;
- When pasting, stick the double-sided tape to the device with your hands or tools and press it for 1-2 seconds. Repeat the pressing several times to make the double-sided tape or nail-free glue of the product and the application paste surface better bonded.

Note: If you need to install the product in a low temperature environment or in a harsh environment, it is recommended to use double-sided adhesive + strong nail-free adhesive to install the product for the best effect. Please contact our sales staff for more information on nail-free glue.

FCC Certification

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.

