sentrax

Smart Badge/card BLE AoA Tag with Multi-Sensors

VERSION 1.2

PINIX TOP-5 User Guide

Contents

1. Introduction:

The PINIX TOP-5, a cutting-edge Bluetooth Low Energy 5.1 beacon tailored for innovative business applications. This smart badge, functioning as a BLE AoA Tag, stands out for its ultra-low power consumption. Its downloadable SDK and extensive library ensure smooth integration into various location-based and indoor navigation applications, supported by a user-friendly tool for easy setup.

More than just a beacon, the PINIX TOP-5 transforms into a portable sensor device. Ideal for indoor positioning, asset tracking, scenic navigation, patrol check-ins, advertising pushes, asset management, and project tracking, it runs on the NRF52820 chip. Boasting Bluetooth 5.0 and above protocols, its exceptional ultra-low power consumption is highlighted by a distinctive red LED light.

2. Physical characteristics:

3. Usage:

- PINIX TOP-5 is designed to be an portable high precision tag, which can be wear by human as well as attached to an asset via double sided tape where it can be easily detectable by nearby smartphones.
- PINIX TOP-5 is intended to be used in indoor navigation applications.
- PINIX TOP-5 also includes a wide range of tools facilitating optimal setup, installation and health-checks.
- Long button presses allow the beacons to configured/restart/wake-up (if sleeping) and show indication on the front LED.

4. Features:

Bluetooth Radio

- **Type**: Bluetooth: Low Energy 5.x
- **Advertisement**: iBeacon, Eddystone & sBeacon (Sentrax Proprietary).
- **Advertisement Interval**: 100ms to 10 seconds in 100ms steps.
- **Frequency**: 2.4GHz.
- **Transmit Power**: +4dBm to -20 dBm.
- **Antenna Type**: PCB Trace antenna, Omni Directional.

Sensor

- **Motion sensing**: 3 Axis Accelerometer.

Battery

- **Battery type**: CP224147, 800mAh, Replaceable.

Enclosure

- **Material**: ABS.

Operating Environment

- **Temperature Range**: -30°C to 65°C.
- **Operating Humidity**: 90%.

- **User interface**
  - User interact-able button.
  - User indication LED.

5. Quick Start:

After unpacking the PINIX TOP-5 units, we have the following steps to check the device functionality.

- **Power up Test**

After powering up (connecting batteries), flashing tells in which mode beacon is:

- Rapid blinking for 2 seconds means the beacon is going to **Sleep mode**.
- Single pulse of 2 second long means the beacon is going to **Active mode**.

Generally, beacon is configured is in sleep mode to minimize the power consumption.

To remove beacon from sleep mode, press the button for 5 sec and observe LED slow blinking in front of PINIX TOP-5. The device will now wake up from sleep mode.

- **Advertisement Packets**

PINIX TOP-5 support following Advertisement packets,

- **iBeacon Advertisement:**
  - UUID: {0x56ef1f00d8a84d5c8b371e20375f2ae7}
  - Major: {2000}
  - Minor: {2005}
  - Calibrated RSSI at 1m: {-60dB}
- **Eddystone UID Advertisement:**
  - Namespace: {0x56ef1f00d8a84d5c8b37}
  - Instance: {0x1e20375f2ae7}
  - Calibrated RSSI at 0m: {-19dB}
- **SBeacon Advertisement:**
  - Beacon Color: {White}
  - Firmware Information: {V1.0}
  - Hardware Information: {V1.0}
  - Battery Life (months): {34}
  - Beacon Orientation: {Vertical, Horizontal}
  - Button Value: {Pressed, Released}
  - Beacon Movement: {Moving, Static}

- Beacon Connectability : {Connectable, Not Connectable}
- Beacon Transmit Power Level: {0dbm}
- Beacon Transmit Interval: {300ms}
- Beacon Battery Voltage: {3.0V}
- Beacon Accelerometer Sensor (gravity raw): {0,0,0}

- **Eddystone TLM Advertisement:**

  - Beacon Battery Voltage: {3.6V}
  - Beacon Temperature: {26°C}
  - Beacon Advertising Count: {999}
  - Beacon Time Since Reboot(centisecond) {100000}

All the advertisement packets are configurable with respect to selection and transmission interval, also the information inside the UID packets can be configured using Sentrax Beacon Manager Application

Eddystone UID and ibeacon are both Unique Identification Packets, and their minimum transmission interval 0.1 seconds. While Eddystone TLM and Sbeacon are Health Packets, and their minimum transmission interval 1 seconds.

Although the battery consumption will be increased with increase in number of advertisements, the change in battery life depends upon the rate of transmission of packets.

- **Transmission Test**

PINIX TOP-5 has a QR-Code printed on the side, which maps to the Beacon MAC address. To verify the PINIX TOP-5 is transmitting packets we can scan the Barcode via Sentrax Beacon Manager application. Once Beacon Manager has been installed in the smartphone, select Scan option. After that click the filter on the top of screen then click QR Code button, scan the QRCode on PINIX TOP-5 and press apply, if PINIX TOP-5 is turned on it will show on the list on the screen.

6. Configuration Setting:

Configuration of beacon can be done just by downloading and using Beacon Manager Application. In advertisement mode when beacon button is pressed for 5 seconds the red light will blink five times and the six blink will be rapid and then if the button is unpressed the beacon will go in configuration mode. During configuration mode led light will blink rapidly continuously and connect option will be displayed in the application for that respective beacon. The beacon can go from configuration mode to advertisement mode in two ways:

1. If the beacon is connected and then disconnected through mobile application.

2. If the beacon button is pressed for 5 seconds and upon first blink the button is unpressed.

7. Warning:

PINIX TOP-5 contains electronic elements and a battery which should be properly disposed of. If a beacon needs to be disposed of or replacement battery is needed, please contact the manufacturer technical support first.

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