Manuals+ — User Manuals Simplified.

RODSUMWIRELESS AC-BLE-T110G Wireless Beacon with Vibration Detection User Manual

Contents

RODSUMWIRELESS AC-BLE-T110G Wireless Beacon with Vibration Detection

Specification

AC-BLE-T110G:

Mechanics Data	
Size	Approx. 60.3 x 43.3 x 21.1 mm
Weight	Approx. 25 grams (without Battery) Approx. 34 grams (with Battery)
Casing	PC/ABS Case
Electrics Data	
Bluetooth Chip	Nordic nRF52840
Frequency	2.4GHz
Memory	256kB Ram, 1MB Flash
BLE Version	Bluetooth 5 compatible iBeacon compatible BT4.2 Advertise Mode supported Long Range (PHY Coded) Mode supported
G-force	Build-in 12-bits 3-Axis Digital Accelerometer

Input/ Output	1 Digital Input for Magnet Door Switch, Flood Detection 1 Digital Output reserved
Interface	I2C interface for external device
Battery	Non-rechargeable Battery CR2477 (3V 1000mAh)
Life Time	Base on different interval and power setting
Transmission Range	Up to 200m (with Long Range PHY Coded Mode)

Environmental Conditions

Operating Temperature	-25°C to +75°C
Waterproof Rating	IP68
Material Resistance	UV resistance

Extended Battery Compartment

Size	Approx. 81.8 x 61.3 x 36.6 mm
Weight	Approx. 54 grams (without Battery)
Casing	PC/ABS Case
Battery	2 x C-Type 1.5 Batteries Appr. 5000mAh
Waterproof Rating	IP68
Material Resistance	UV resistance

Function Description

LED Indicator Status

LED Status	Description
Stay Off	Beacon Power Off
Stay On	Beacon in Configuration Mode, connected with mobile
Flash 1600ms Off 400ms On	Beacon Under Configuring Mode, not connected with any mobile
Flash 4990ms Off 10ms On	Beacon Under normal Advertising Mode

LED Indicator description Table

Battery Level Reporting

User can enable/ disable the Battery Level Reporting by Aroco Beacon Config APP.
If the function is enabled, the upper 4 bits of Major will be covered by Battery Level in advertising data.
It will increase Beacon power consumption.
The Battery Level bits table is shown as below:

Battery Level	Upper Bits value
~10%	4096
~20%	8192
~30%	12288

~40%	16384
~50%	20480
~60%	24576
~70%	28672
~80%	32768
~90%	36864
~100%	40960

Battery Level bits value Table

Double Advertise Mode

User can enable/ disable the Double Advertise Mode by Aroco Beacon Config APP.
If the function is enabled, beacon will advertise same data packet twice to increase the data receiving stability.
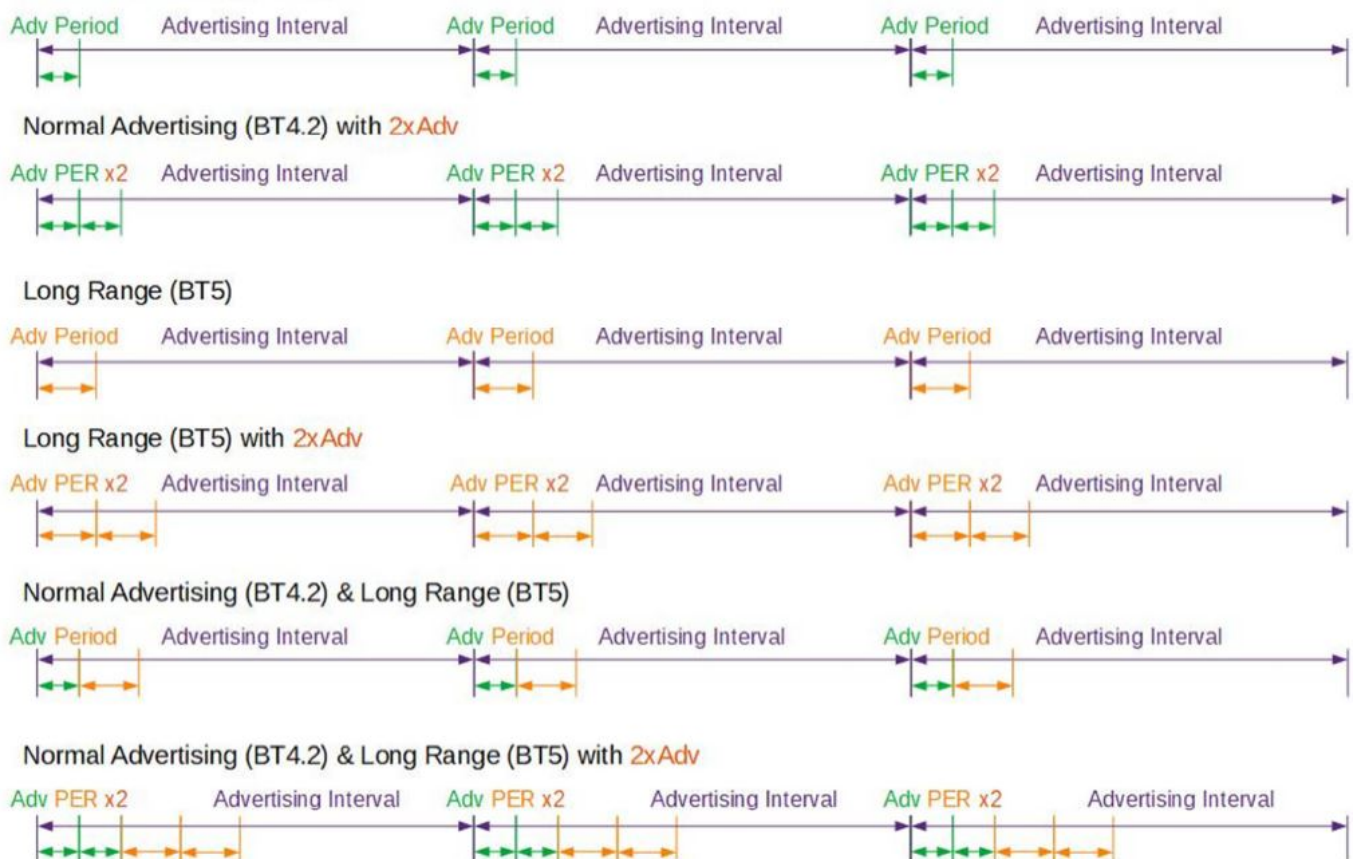It will increase Beacon power consumption.

BT4.2 Advertise Mode

Normal Advertise Mode with Bluetooth 4.2 for around 50 meters transmission range.
User can choose to advertise data by Normal BT4.2 Advertise Mode, Long Range (PHY Coded) Mode, or both
Normal and Long Range Mode by Aroco Beacon Config APP.

Long Range (PHY Coded) Mode

Advertise Mode with Bluetooth 5 for long range (around 200 meters) transmission range. It request more
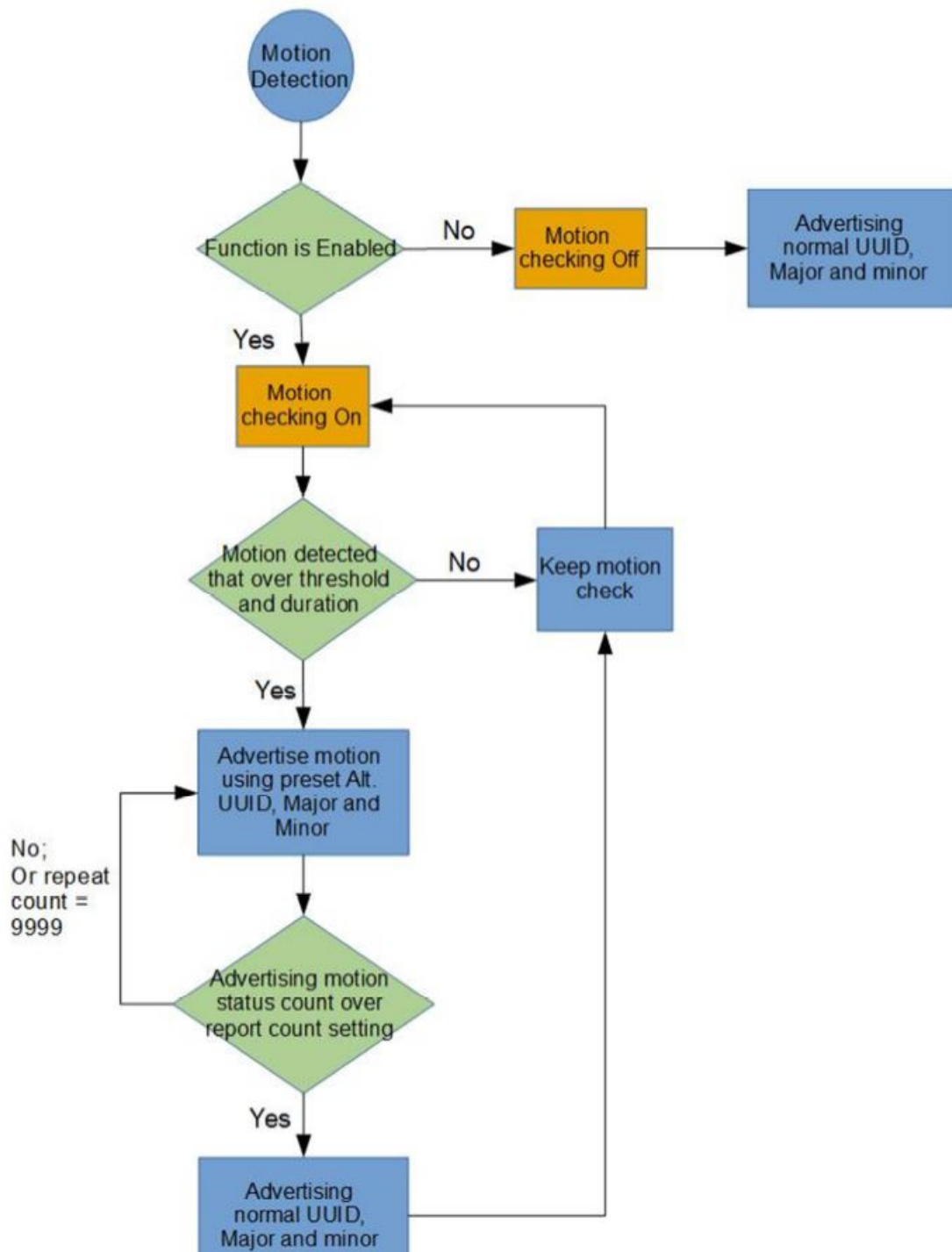transmission time per data and increase Beacon power consumption.

Advertising Timeline in a different mode

Motion Detection

Users can enable/ disable the Motion Detection by Aroco Beacon Config APP.
If the function is enabled, beacon will monitor the motion detection alarm from Accelerometer with the threshold
and duration setting. Alternative UUID, major and minor value will be reported instead of normal advertising.
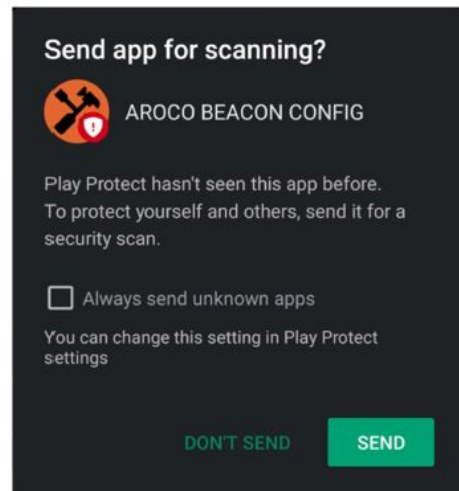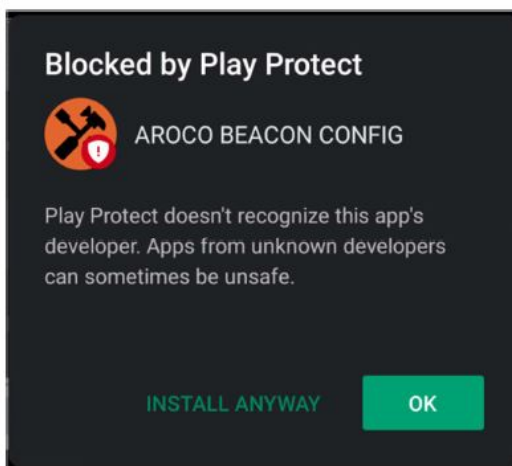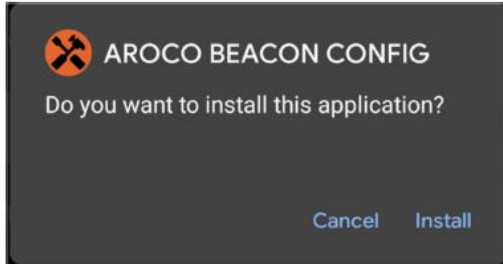
Motion Detection Function flow chart

Software Configuration

Android App Start up Instruction

1. Download and install the AROCO BEACON CONFIG Android App (version 1.4.10) from following QR Code
   URL:

Android version: 5.1 or upper

*Since the app is installed be APK, notice windows might appear while installation. Press **"INSTALL ANYWAY"** and **"DON'T SEND"** to finish the installation process.
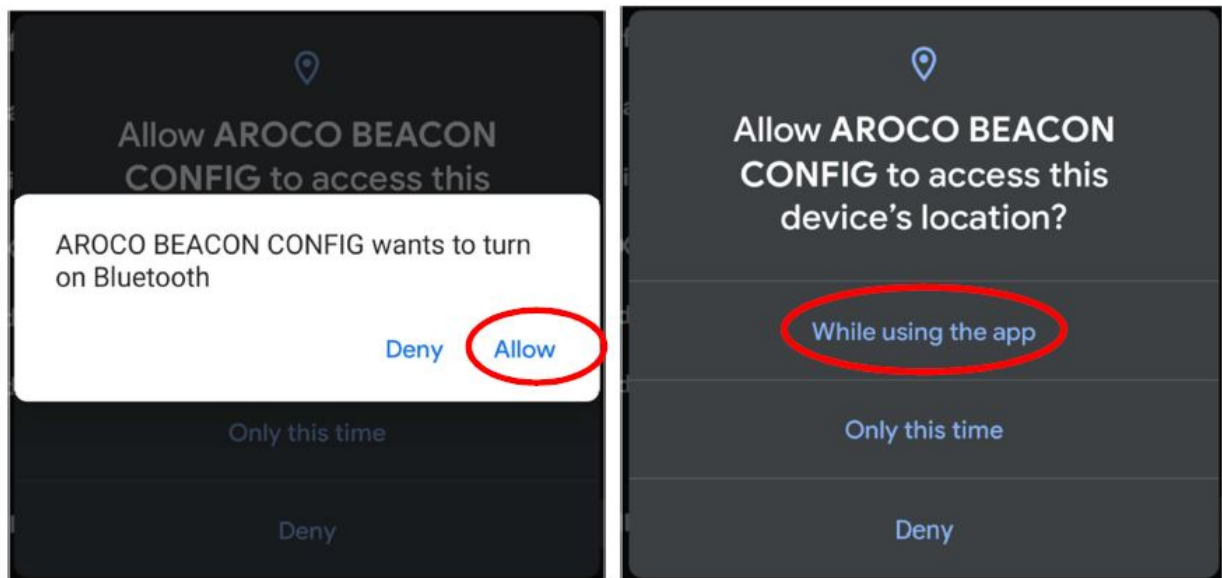
2. Unscrew the screw and open the cover. Fill in battery CR2477 to Turn On the Beacon.
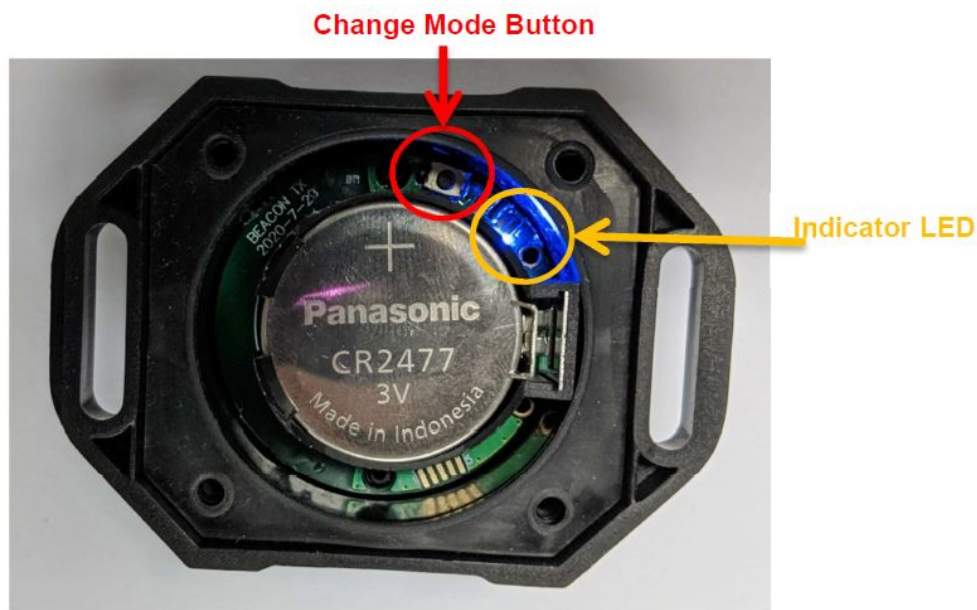

->

3. Start the App. Allow Device's Location permission, Enable Bluetooth and Location.

4. Press the Change Mode Button on the Beacon board. Beacon will enter configuring mode

Indicator Blue LED has different Flashing Rate in different Mode

iBeacon Mode: Indicator LED Flash 4990ms Off 10ms On Configuring Mode: Indicator LED Flash 1600ms Off 400ms On

- The Indicator LED will stay On when the Beacon in Configuring Mode and connected the Mobile App
- Beacon will back to iBeacon Mode for save energy while no any connection over 60 seconds; or press "Disconnect" Button in Mobile APP, press change mode button after Indicator LED flash.
- Press and Hold the Change Mode Button 5 seconds under iBeacon Mode to restore all above config to default.

5. Press Magnifier Icon button on the App to scan and connect the Beacon.

6. Select the Beacon and Tap to connect. All current parameter will be read.

Common Setting Configuration

UUID, Manufacturing Code, Major, Minor, Battery Level reporting, TX Power, Advertising Interval, Advertising type and PIN setting can be checked and updated in this Tab page.
All current setting will be shown on the app once the beacon connection is made.
Beacon will advertising with those setting in normal status.

UUID: Simple 16 characters in simple (simple check box ticked) or 16 Bytes hexadecimal UUID data can be changed. (Default UUID: aa55bb44cc33dd22ee11+6 bytes Beacon MAC address)

- Non-hexadecimal content will be blocked when Simple check box is un-ticked
- Simple allowed following characters **0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ-_/,.***
- If new simple UUID length less than 16 characters, app will fill full stop at the end of new UUID to 16 characters length and updated the parameter when "SET" button pressed.
- If new UUID length not 32 in non-simple status, the notice will be shown as below when "SET" button pressed. All parameter cannot be updated.

Manufacturing Code: 2 Bytes Code data can be changed. Non-hexadecimal content will be blocked. (Default: 0x004C)

- If new Mfg. Code is empty, the notice will be shown as below when "SET" button pressed. All parameter cannot be updated.

Major: Range 0 to 65535 (Default: 0)
Minor: Range 0 to 65535 (Default: 0)

- Major and Minor fixed to 0 if UUID is in simple

  Battery Level (Batt lvl): Tick box for choose the data advertising of Beacon Battery Level; Click Button to show the current Battery Level in mV

- Battery Level reporting will cover the upper 4 bits of Major

TX Power (dBm): Combo Box choice include -20, -16, -12, -8, -4, 0, 2, 3, 4, 5, 6, 7, 8 (Default: -12)

2 x Adv: Tick box for data advertising by Double Advertisement

Advertising Interval (ms): Range 50-3600000. (Default: 650)

- If new Adv. Interval is empty or less than 50, the notice will be shown as below when "SET" button pressed. All parameter cannot be updated.

Advertising Type: Tick Box to choice Normal Type (BT4.2) or/ and Long Range Type (BT5) (Default: Normal (BT4.2) Type only)

- Tick both box for choose the both type

  PIN: 4 digits PIN (Alphabet or number) for Login when every connection create (Default: 1234)

- If new PIN length not 4, the notice will be shown as below when "SET PIN" button pressed. PIN cannot be updated.
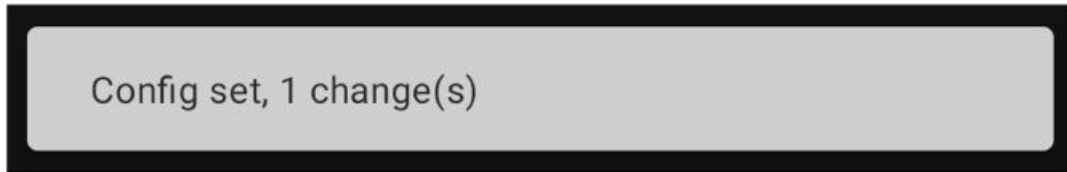
- If PIN value incorrect, the notice will be shown at the bottom as below when connecting the beacon. Those notice message will also be shown in the **"LOG"** Tab page.

Text notice box will be shown at the bottom if any CFG updated. Those notice message will also be shown in the **"LOG"** Tab page.

CONFIG APP will updated all the above parameter to Beacon by press **"SET"** Button. No any parameter will be updated individually if any input error notice appear.

GET: All current setting value will be shown on this page when press the **"GET"** button

REBOOT: Request beacon reboot when press the **"REBOOT"** button.

Connection between beacon and mobile will be lost. Beacon will start will iBeacon mode after reboot.

Trigger Setting Configuration

Only connected Beacon with G-force Accelerometer will show this Tab page.
Sensor ON/OFF, Threshold, Duration, Repeat Count, Alternative UUID, Alternative Major and Alternative Minor setting will be shown and can be checked and updated.
All current setting value will be shown on the app once the beacon connection is made.
Beacon will trigger the Motion Detection Alarm by advertising with Alternative UUID, Major and Minor according those setting.

Sensor: Combo Box for Motion detection function Off or On selection. Threshold, duration and repeat count setting will be shown when selected Movement. Motion Detection will be triggered where the threshold and duration higher than the setting value
Threshold (mg): Threshold value for trigger the Motion Detection
Range 63-8000
Duration (ms): Consecutive motion time for trigger the Motion Detection Range 160-20400
Repeat Count: Beacon advertise Alternative information times
Range: 1-5000, or 9999

- If one of the Threshold, Duration, Repeat Count out of range, the notice will be shown as below when "SET TRIG" button pressed. All TRIG parameter cannot be updated.

- If Repeat count = 9999, Beacon will keep advertise alternative information instead of normal information until the beacon reboot.

All current TRIG setting value will be shown when press the "GET TRIG" button
Text notice box will be shown at the bottom if any TRIG CFG (Motion Detection) updated. Those notice message will also be shown in the **"LOG"** Tab page.

Trigger set, 6 change(s)

Threshold setting will be auto-corrected to a nearest greater value of multiple of 63 when value set to beacon.
Duration setting will be auto-corrected to a nearest greater value of multiple of 80 when value set to beacon.

Alternative Information: Include UUID, Major and Minor. Beacon will advertise that alternative information instead of normal information when motion detection triggered.
Alt. UUID: Simple 16 characters in simple (simple check box ticked) or 16 Bytes hexadecimal UUID data can be changed. (Default alt. UUID: aa55bb44cc33dd22ee11+6 bytes Beacon MAC address)
Alt. Major: Range 0 to 65535 (Default: 0)
Alt. Minor: Range 0 to 65535 (Default: 0)

- Non-hexadecimal content will be blocked when Simple check box is un-ticked

- Simple allowed following characters **0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ-_/,.***

- If new simple UUID length less than 16 characters, app will fill full stop at the end of new UUID to 16 characters length and updated the parameter when "SET" button pressed.

- If new UUID length not 32 in non-simple status, the notice will be shown as below when "SET" button pressed. All parameter cannot be updated.

- Major and Minor fixed to 0 if UUID is in simple

All current Alternative information setting value will be shown when press the "GET ALT. UUID" button
Text notice box will be shown at the bottom if any Alt UUID CFG updated.
Those notice message will also be shown in the **"LOG"** Tab page.

Set Alt UUID, 1 change(s)

Finish Configuration

Please go to **"COMMON"** tab page and press **"REBOOT"** button when every setting is updated. Beacon will reboot immediately, disconnect with mobile APP, and ready to start the beacon normal operation.

Log

All activity will be logged with time and shown on this log tab page.

AROCO BEACON CONFIG

COMMON   LOG

2021-04-27 19:30:06: Not Connected
2021-04-27 19:30:04: request reboot
2021-04-27 19:29:55: ARO_5A6B4C - Config set, 3 change(s)
2021-04-27 19:29:55: set CFG
2021-04-27 19:27:52: ARO_5A6B4C - Alt UUID set, 2 change(s)
2021-04-27 19:27:52: set Alt.Uuid
2021-04-27 19:26:13: ARO_5A6B4C - Trigger set, 3 change(s)
2021-04-27 19:26:13: set Trigger
2021-04-27 19:25:56: ARO_5A6B4C - Trigger set, 6 change(s)
2021-04-27 19:25:56: set Trigger
2021-04-27 19:25:50: ARO_5A6B4C - Trigger set, 6 change(s)
2021-04-27 19:25:50: set Trigger
2021-04-27 19:24:44: ARO_5A6B4C - Trigger read
2021-04-27 19:24:44: ARO_5A6B4C - Alt UUID read
2021-04-27 19:24:44: ARO_5A6B4C - Config read
2021-04-27 19:24:44: ARO_5A6B4C - authenticated, sw=60
2021-04-27 19:24:43: ARO_5A6B4C - connected
2021-04-27 19:24:42: ARO_5A6B4C - connecting
2021-04-27 19:24:38: Log started, version 1.4.10

Rodsum Wireless Limited **www.rodsum.com**

Documents / Resources

Aroco AC-BLE-T110G iBeacon User Manual	**RODSUMWIRELESS AC-BLE-T110G Wireless Beacon with Vibration Detection** [pdf] User Manual AC-BLE-T110G, Wireless Beacon with Vibration Detection, AC-BLE-T110G Wireless Beacon with Vibration Detection, Beacon with Vibration Detection, Vibration Detection, Detection