

W3/W3B-BeaconX Pro Datasheet



MOKO TECHNOLOGY LTD.

MOKO TECHNOLOGY LIMITED

www.mokosmart.com

1. Description

The W3/W3B-BeaconX Pro is a portable tag with **3-axis accelerometer sensor**^①, which can advertise iBeacon, Eddystone and Sensor datas.

It has a **portable case shape, accurate hardware and robust firmware**.

All the parameters of W3/W3B-BeaconX Pro can be modified and all the sensor datas can be checked. Please check out our BeaconX Pro app, available for iOS and Android.

Note: The difference between W3-BeaconX and W3B-BeaconX is that W3B has a push button, while W3 does not have.

^① 3-axis accelerometer Sensor: STMicroelectronics® LIS3DH

2. Features

Firmware and chipset

- Programmed MOKO standard MkBeaconX firmware;
 - Ultra-low power consumption chipset NORDIC® nRF52 series with 32 bit ARM® Cortex-M4 CPU.
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Compatibility

- Compatible with **Apple iBeacon** and **Google Eddystone**;
 - Compatible with standard Eddystone Configuration GATT Service;
 - Compatible with all Bluetooth® 5.0 devices.
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Replaceable Battery and Battery Level

- High quality replaceable CR2032 coin battery(225mAh);
 - Up to 1 year battery lifetime (at default settings);
 - Easy to get the real-time battery level notification.
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Configurable SLOTS and parameters

- Up to 6 configurable SLOTS;
 - Each SLOT can be set to iBeacon, UID, URL, TLM, Device Info and 3-axis Sensor data;
 - Device Name, Password, Connection Mode, Advertising Interval, Tx Power and 3-axis Sensor Parameters all are configurable;
 - Special Configuration APP (**BeaconX Pro**), available for iOS and Android.
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Flexible sensor function

- 3-axis accelerometer has dynamically user-selectable full scales of $\pm 2g/\pm 4g/\pm 8g/\pm 16g$ and the parameter is configurable ;
 - 3-axis accelerometer is capable of measuring accelerations with output data rates from 1 Hz to 100 Hz and the parameter is configurable;
 - User can get the raw data of the 3-axis sensor sampling data from the device in real time;
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Trigger function

- -BeaconX Pro Supports button trigger and motion trigger, while W3-BeaconX Pro only supports motion trigger;
 - Control the device to start advertising all the time, stop advertising, or advertise for a while.
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Transmission Power Levels

- 9 adjustable grades;
 - Transmission power range: -40dBm to -0.61dBm.
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Long Range

- The max. Range 40 meters in the open space;
 - The range depends on the physical environment.
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Security

- Configurable password (1-16 characters);
 - With or without password (Lock/Unlock parameters);
 - AES-128-ECB. encrypt.
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LED reminder

- Press and hold the button for 3s, the red LED flashes for 3s, indicating that the device is turned on, and the red LED stays on for 3s, indicating that the device is turned off.
 - LED flashes every 10 seconds if the battery capacity is under 5%;
 - LED lights up indicate successful button trigger;
 - LED flashes when the device is connected;
 - LED flashes when the device is upgraded.
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Connection Mode

- Advertising mode, non-connectable;
 - Configuration mode, connectable.
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Custom made mounting

- Keychain / neck chain;
 - 3M sticker;
 - Logo and color customizable;
 - Provided with your own configuration.
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OTA and DFU

- Supported upgrade via Over-The-Air;
 - Nordic® official Device Firmware Upgrade(DFU);
 - Reserved J-Link port on the board for programming.
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3. Physical Characteristics

Item	Value	Remarks
Case Color	White	Other colors can be customized
Main Material	ABS	-
Battery Model	CR2032	Coin battery, 1pc, 225mAh
Battery Lifetime	Up to 1 year	At default settings ^② and without selfdischarge factor
Operation Voltage	1.8~3.6V	DC
Average Current	24.2 uA	At default settings ^③
Transmission Range	40m(-0.61dBm)	Maximum, in the open space
Antenna	50ohm	PCB Antenna

Size	40.42 x 29.05 x 8.63mm	Refer to mechanical draws for details
Net Weight	7.6g	With battery
Operating Temperature	-25 to +60°C	-
Storage Temperature	20 to +30°C	-

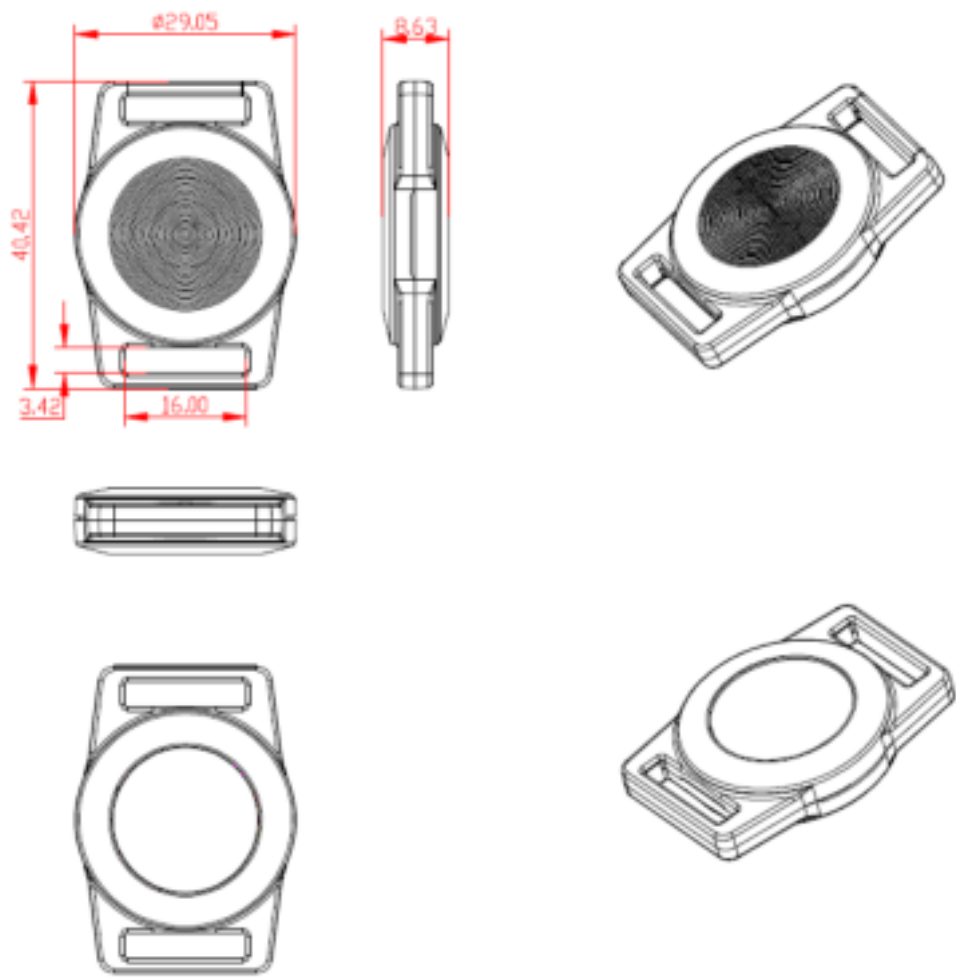
②③ Default setting: 1 Active SLOT(Device Info), 0dBm TX power and 1000ms Advertising Interval.

4. Configurable Parameters

Item	Value	Default Setting	Range and Remarks
iBeacon	UUID	-	16bytes
	Major	-	0~65535
	Minor	-	0~65535
UID	Namespace	-	10bytes
	Instance ID	-	6bytes
URL	Encoded Scheme Prefix	-	4types: http://www. https://www. http:// https://
	Encoded URL	-	2-17 bytes
TLM	-	-	TLM shows only one in the broadcast.
Device Name	-	BeaconX Pro	Up to 20 characters
Advertising Interval	-	1000ms	100~10000ms, Unit:100ms
Tx Power	-	0dBm	-40dBm to -0.61dBm, 9 adjustable grades
Password	-	Moko4321	1-16 characters or NO password
Connection Mode	-	Connectable	Connectable/Unconnectable
Trigger	1.Button double tap(W3-BeaconX Pro does not support this trigger)	-	Always advertise
			Start advertising for a while (1~65535s)
			Stop advertising for a while (1~65535s)
	2.Button triple tap(W3-BeaconX Pro does not support this trigger)	-	Always advertise
			Start advertising for a while (1~65535s)
			Stop advertising for a while (1~65535s)
	3.Device moves	-	Always advertise
			Start advertising after a static period

			time (1~65535s)
			Stop advertising after a static period time (1~65535s)
3-axis accelerometer Sensor	Scale	±2g	±2g, ±4g, ±8g, ±16g
	Output data rate	10 Hz	1 Hz, 10 Hz, 25 Hz, 50 Hz, 100 Hz
	Sensitivity	7	7 to 255

5. mechanical draws



**All units is mm **

6.FCC STATEMENT

1. 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. (2) This device must accept any interference received, including interference that may cause undesired operation.
 2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio

communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 5mm between the radiator & your body

7. Technical support

Item	File Name	Link
Configure APP for IOS&Android	BeaconX Pro	--
User Manual	BeaconX Pro User Manual	http://doc.mokotechnology.com/index.php?s=/page/56
SDK for Android APP	--	https://github.com/BeaconX-Pro/Android-SDK
SDK for iOS APP	--	https://github.com/BeaconX-Pro/iOS-SDK
Power Consumption Test	--	http://doc.mokotechnology.com/index.php?s=/page/85

8. Declaration

The contents of this datasheet are subject to change without prior notice for further improvement. MOKO team reserves all the rights for the final explanation. Please contact MOKO sales team or visit <https://www.mokosmart.com> to get more related information if needed.

9. Contact Information

MOKO TECHNOLOGY LTD. Address: 4F,Buidling2, Guanghui Technology Park, MinQing Rd, Longhua, Shenzhen, Guangdong, China E-mail: Support_BLE@mokotechnology.com Website: <https://www.mokosmart.com>

Revision History

Revision	Description	Approved	Date
V1.0	Initial Release	Hannah	2020.04