

# W1-BeaconX Pro Datasheet



**MOKO TECHNOLOGY LTD.**

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# 1. Description

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The W1-BeaconX Pro is a portable tag with **3-axis accelerometer sensor**<sup>①</sup>, which can advertise iBeacon, Eddystone and Sensor datas.

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

All the parameters of W1-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.

<sup>①</sup> 3-axis accelerometer Sensor: *STMicroelectronics® LIS3DH*

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## 2. Features

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### 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

- Support 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 +4dBm.
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### Long Range

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

### Security

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

### Connection Mode

- Advertising mode, non-connectable;
- Configuration mode, connectable.

### Custom made mounting

- 3M sticker;
- Logo and color customizable;
- Provided with your own configuration.

### OTA and DFU

- Supported upgrade via Over-The-Air;
- Nordic<sup>®</sup> official Device Firmware Upgrade(DFU);
- Reserved J-Link port on the board for programming.

## 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 <sup>②</sup> and without selfdischarge factor |
| Operation Voltage     | 1.8~3.6V     | DC  |
| Average Current       | 27.52 uA     | At default settings <sup>③</sup>                                  |
| Transmission Range    | 40m(+4dBm)   | Maximum, in the open space  |
| Antenna               | 50ohm        | On board/PCB Antenna  |
| Size                  | Φ26x7.1mm    | Refer to <b>mechanical draws</b> for details                      |
| Net Weight            | 5.4g         | With battery  |
| Operating Temperature | -25 to +60°C | -   |
| Storage Temperature   | 20 to +30°C  | -   |
| Certifications        | FCC/CE       | -   |

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

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## 4. Configurable Parameters

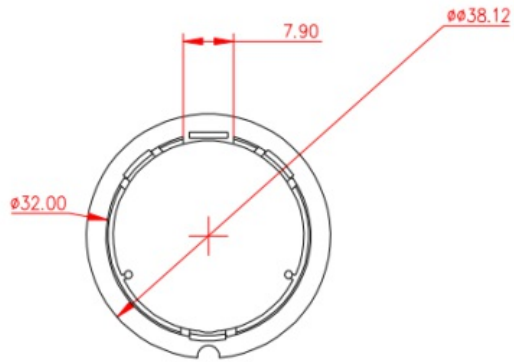
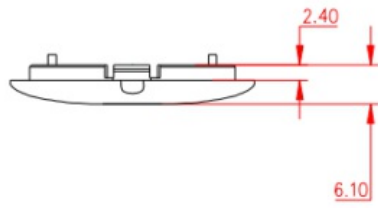
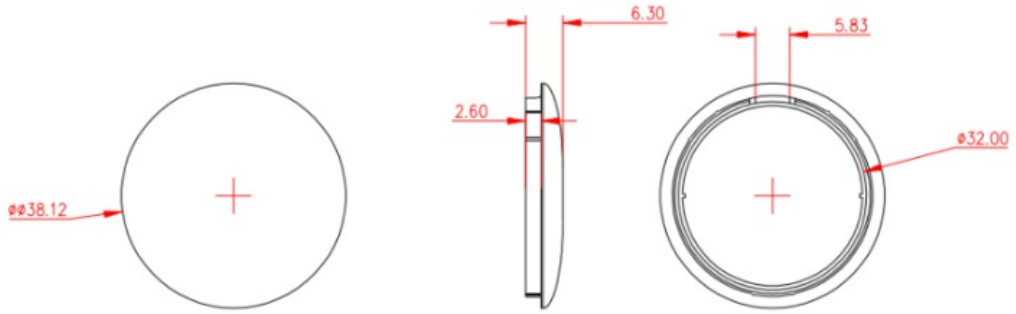
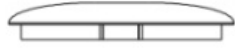
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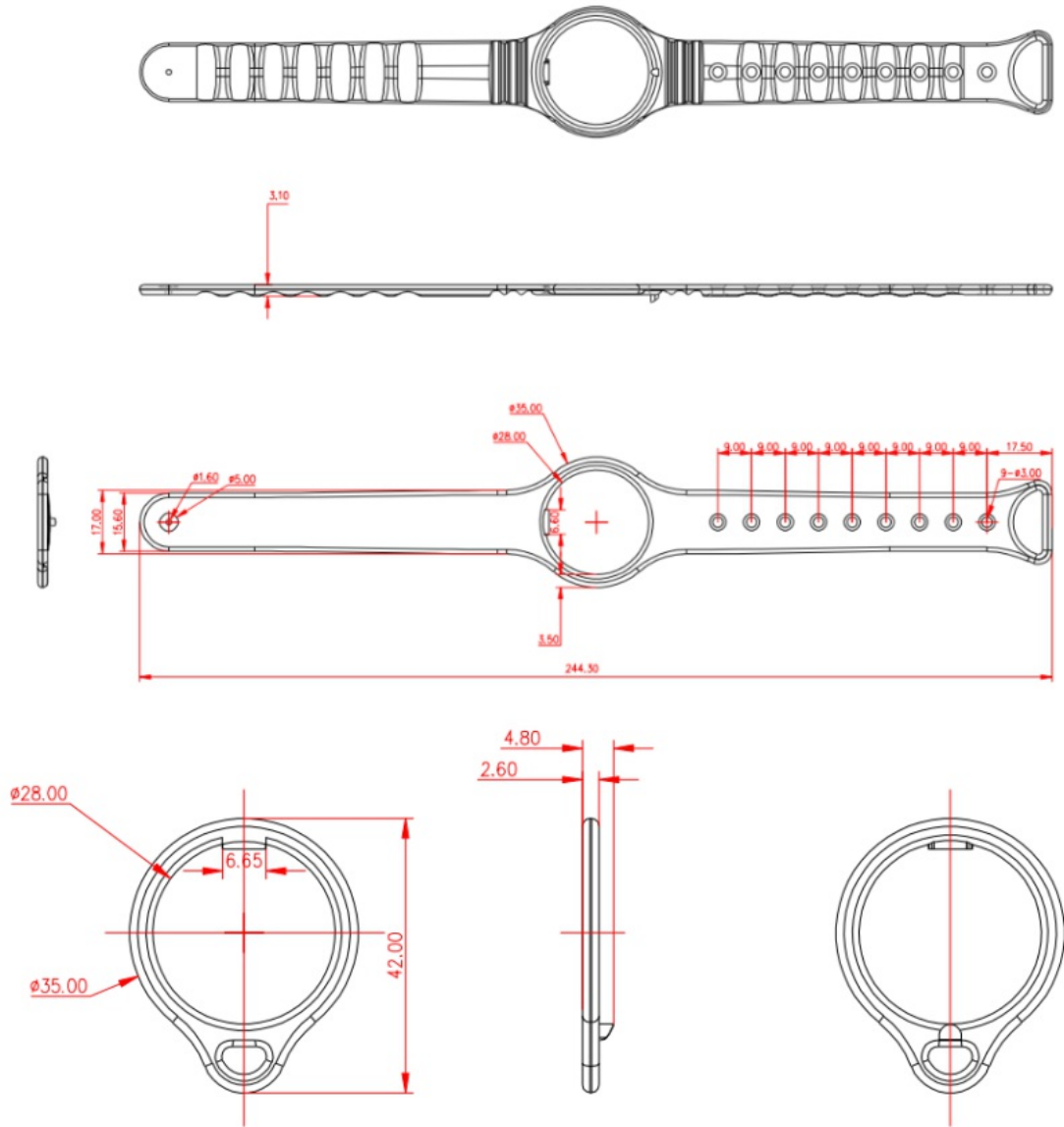
| Item                        | Value                 | Default Setting | Range and Remarks                                       |
|-----------------------------|-----------------------|-----------------|---|
| iBeacon                     | UUID                  | -               | 16bytes   |
|                             | 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 4dBm, 9 adjustable grades                     |
| Password                    | -                     | Moko4321        | 1-16 characters or NO password                          |
| Connection Mode             | -                     | Connectable     | Connectable/Unconnectable                               |
| Trigger                     | 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  |

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## 5. mechanical draws

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\*\*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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

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## 7. Declaration

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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.

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## 8. Contact Information

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## Revision History

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| Revision | Description     | Approved | Date    |
|----------|-----------------|----------|---------|
| V1.0     | Initial Release | Hannah   | 2020.04 |