



MOKO SMART



Product Specification

W7 Medical Wristband

Version 1.0

Revision History

Version	Data	Notes	Contributor(s)
V2.0	Dec 20, 2024	Initial version	Leo

About document

This **product specification** was designed to help users to know the hardware overview and feature instructions of **W7 Medical Wristband**. Through this document, users will be initial to understand the application scenarios, hardware specifications and basic instructions

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1. Overview

This *Product specification* is mainly applicable for MOKO **W7 Medical wristband**, and mainly contained below parts:

- [Product brief](#)
- [General specifications](#)
- [Basic instructions](#)

For more information about user guidance of product firmware functions and configuration APP, please contact our sales team directly for other official document.

2. Product brief

The **W7 Medical wristband**, a compact and portable identification tag powered by Bluetooth Low Energy technology.

The wristband features a single-use anti-removal strap and integrated NFC technology, enhancing the reliability and efficiency of personal security management.



Figure 1: Appearance overview of W7 Medical wristband

3. General specifications

3.1 Hardware specifications

Hardware specifications		
Item	Property	Specs
Physical	Dimension	32.4mm*24.5mm*4.5mm (PCBA area) 250*24.5*4.5 (for adult) 205*24.5*4.5 (for kids) 160*24.5*4.5 (for infant)
	IP rated	IP67
	Color	White
	Installation	Wrist wear
	Material	TPU
Connectivity	Bluetooth	BLE 5.0
	Maximum Tx Power	+4dBm
	Transmission range*	150m
Hardware	LED	Red
	RFID/NFC	13.56Mhz; IOS/IEC 14443-A
	Battery capacity	38mAh
	Replaceable battery	Not support
	Lifespan (default settings*)	5 months
	Operating temperature	-25°C ~ 55°C

Table 1: Hardware specifications of W7 Medical wristband

*Transmission range tested in the open area and no obstacles in the route.

*Default settings: 0dBm Tx Power | 3000ms ADV interval | Continuous broadcast

3.2 Lifecycle estimation

Here we have described battery consumption in some common configurations which refer to different use cases. You can refer to below table to create the use case and estimate battery lift time.

W7 Medical Wristband battery consumption			
Advertising interval	Tx Power	Consumption (uA)	Life time (days)
1000ms	0dBm	18	70
3000ms	0dBm	8	150 (default)
3000ms	4dBm	9.3	130
5000ms	0dBm	6.5	190
10000ms	0dBm	4.9	240

Table 2: W7 medical wristband lifecycle estimation

3.3 LED functionality

Here we have described the LED response status in some common situations.

LED response status		
Scenarios	LED color	Response
Power ON	Red	Blinking for 3 seconds
Device connect	Red	Blinking twice
Power OFF	Red	Solid for 3 seconds
Factory restore	Red	Solid for 3 seconds and then device reboot
DFU upgrade	Red	Blinking during DFU upgrade, and solid for 3 seconds after finished, then device reboot
Low battery	Red	Blinking twice every 10 seconds
LED notification	Red	Blinking once --- Trigger mechanism applied

Table 3: LED response status in various situations

4. Basic instructions

4.1 How to power ON/OFF device

Power ON: The product is powered off by default. Use an NFC-enabled scanning device, such as a smartphone with NFC functionality or an NFC card reader, and swipe it over the NFC area of the W7 for more than 3 seconds, and red LED will **keep blinking** for 3 seconds to indicate device power ON status.

Power OFF: Use an NFC-enabled scanning device and swipe it over the NFC area of the W7 for more than 3 seconds, and red LED will **keep solid** for 3 seconds to indicate device power OFF status.

Remark: The NFC area of the W7 device is at the location of the red dot in the figure below.



Figure 2: How to power ON/OFF the W7 medical wristband

4.2 How to restore factory settings

There have two ways to restore factory settings.

- **Software reset:** Connect with device through configuration APP and then execute “Reset Beacon” operations to finish the software reset.
- **Hardware reset:**
 - Step 1:** Keep the device power OFF.
 - Step 2:** Use an NFC-enabled scanning device and swipe it over the NFC area of the W7 for more than 10 seconds, during that device will power on and LED start flashing for 3 seconds.
 - Step 3:** After NFC-enabled scanning device and swipe over the NFC area of the W7 for more than 10 seconds, Move the NFC scanning device away from the W7 device, and then quickly re-approach the NFC scanning device to the NFC area of the W7 device within 2 seconds, then device will proceed on factory reset, along with the LED solid for 3 seconds.
 - Step 4:** Device will reboot and LED start flashing for 3 seconds to indicate the factory reset success.

Remark: Software reset won't reset connection password.

4.3 How to monitor cut-off event

The W7 Medical wristband is designed with a cut-off alert feature. If the wristband is cut, the device will trigger a rapid alarm broadcast. You can parse the **Bit3 of the Byte16** in the **Device info** frame in the broadcast format to display the alarm status.

Customized - Device info (Advertising packet)			
Byte offset	Field	Example Value	Description
0	Data length	0x02	AD length of Flags content
1	Data type	0x01	AD type: Flags
2	Advertising type	0x06	BR/EDR not supported / LE general discoverable mode
3	Data length	0x02	AD length of Tx Power Level content
4	Data type	0x0A	AD type: Tx Power Level
5	ADV type	0x00	1 byte signed integer, Tx Power, unit: dBm. Content parse: 0dBm
6	Data length	0x12	AD length of Service Data content
7	Data type	0x16	AD type: Service Data
08-09	Service UUID	0xAB FE	MOKO-Defined UUIDs
10	Frame type	0x40	MOKO-Defined advertisement frame type; 0x40: Device info frame.
11	Ranging data	0x00	Configuration range: -100~0dBm
12	Adv interval	0x0A	Slot advertisement interval, unit: 100ms
13-14	Battery voltage	0x0C AE	Battery voltage is the current battery charge in millivolt, expressed as 1 mV per bit. Example Content parse: 3246mV
15	Device property indicator	0x00	1 byte to indicate device property info in Beacon. Bit 0-1: Password verification status (00-Enabled; 10-Disabled) Bit 2: Ambient light sensor status (0-Not equipped; 1-Equipped) Bit 3: Hall Door sensor status (0-Not equipped; 1-Equipped) Bit 4-7: RFU
16	Switch status indicator	0x01	1 byte to indicate feature switch status in Beacon. Bit 0: Connectable status (0-Unconnectable; 1-Connectable) Bit 1: RFU Bit 2: Door status (1- Door open; 0 - Door closed) Bit 3: Cut-off status (1 - alert; 0 - normal) Bit4-7: RFU Example content parse: 09(HEX)>>>0000 1001(BIN)>>> Connectable & Door closed&cut-off alert
17-22	MAC address	0xEF 05 E1 B4 02 1A	Beacon MAC address
23-24	Version	0x11 00	Firmware version. Main version: 0x11 >>> V1.1.x; Sub version: 0x00 >>>Vx.x.0; 0x11 00 >>> V1.1.0 ; 0x11 0A >>> V1.1.10
Scan response packet			
Byte offset	Field	Example Value	Description
0	Data length	0x05	AD length
1	Data type	0x09	AD type: Complete local name
02-21	ADV type	0x4D 4F 4B 4F	1-20 bytes device name, comply with US-ASCII standard. Example content parse: MOKO

Table 4: Device info frame format description

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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.

RF warning statement:

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

Contact

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Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

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.

The device has been evaluated to meet general RF exposure requirement.