



MOKO SMART

Product Specification

B1 Panic Button

Version 1.0

Revision History

Version	Date	Notes	Contributor(s)
V1.0	April 8, 2022	Initial version	Daniel

About document

This **product specification** was designed to help users to know the hardware overview and feature instructions of **B1 Panic Button** product. Through this document, users will be initial to understand the application scenarios, hardware specifications, basic instructions as well as packaging information of product.

Table of Contents

- 1. Overview 4**
- 2. Product brief.....5**
- 3. Application scenarios6**
- 4. Hardware specifications 7**
 - 4.1 General specifications 7
 - 4.2 Battery consumption 7
 - 4.3 LED descriptions 8
- 5. Basic instructions9**
 - 5.1 How to wear/install B1? 9
 - 5.2 How to power ON/OFF B1? 9
 - 5.3 How to check battery status?9
 - 5.4 How to restore factory settings? 10
- 6. Package information 11**

1. Overview

This *Product specification* is mainly applicable for MOKO **B1 Panic Button** product, and mainly contained below parts:

- [Product brief](#)
- [Application scenarios](#)
- [Hardware specifications](#)
- [Basic instructions](#)
- [Package information](#)

For more information about user guidance of product functions and configuration APP, please ask our sales team directly for official document – “**MOKO Button APP User Manual**”.

2. Product brief

Quick, simple and individual !

The B1, also called Panic Button, is a portable and dual-button designed Bluetooth LE Beacon. It is compatible with Bluetooth® 4.2 standard and designed to give user ability to send different SOS advertisement alerts to gateway node or center control by simply pressing the SOS button, which can be widely used especially for anti-aggression alarms in hotel, hospital or school.

As well, thanks to its ultra-low power consumption and chargeable battery, the beacon performs un-surpassed battery life time up to 9 months under standard scenarios for a single charge cycle and guaranties the continuous usage.

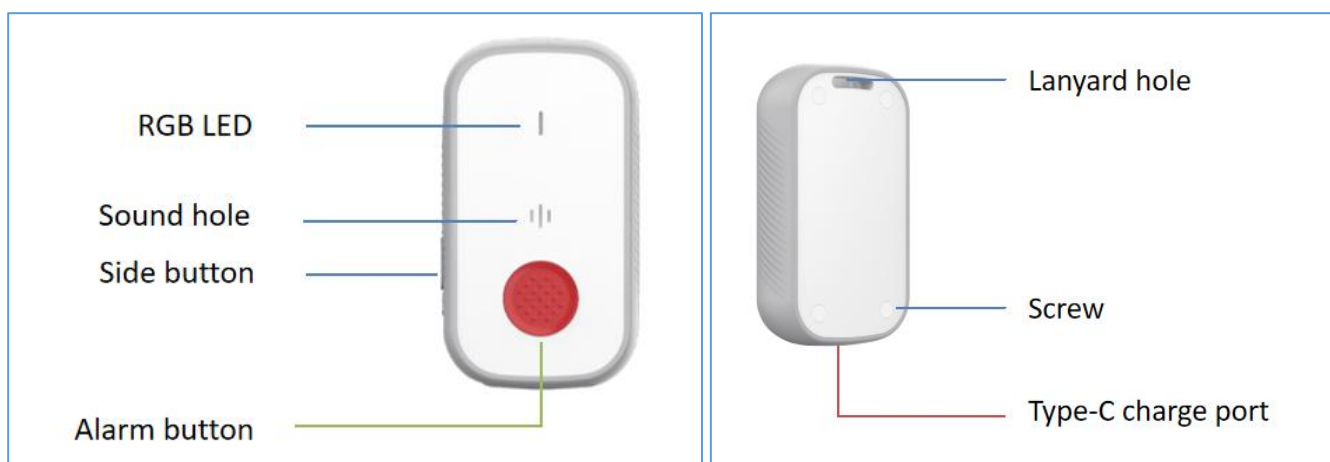
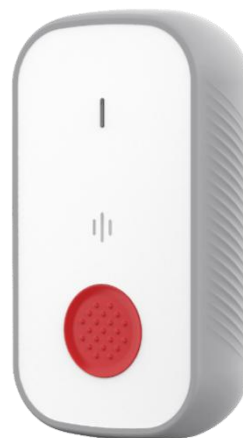
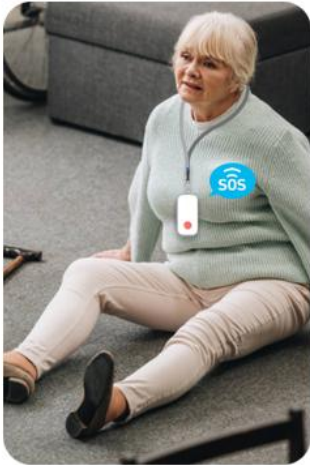


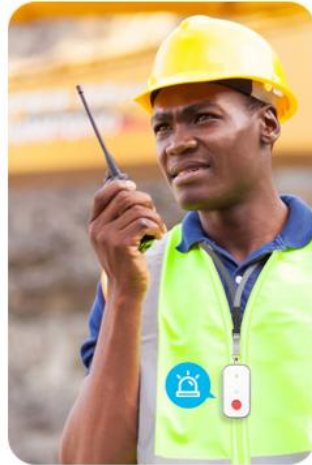
Figure 1: Appearance overview of B1 Panic Button

3. Application scenarios



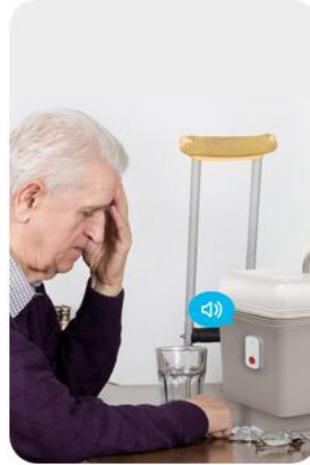
Smart Home care

Guarantee easy access to SOS button and obvious response for elderly person or patients at home. Or stick in the wall to press for notify gas leakage, fire alarm or smart lighting and etc.



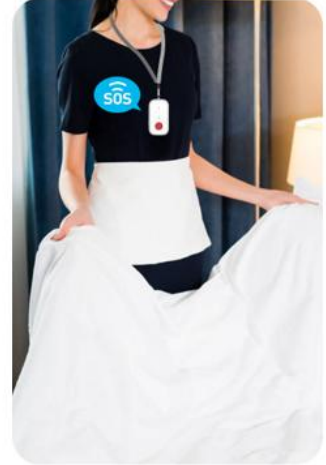
Construction safety

Offer quick access to SOS button at hand once accident occurred and automatic alarm when workers stay static over specified time, to monitor worker efficiency and guarantee lone workers' safety.



Treatment compliance

Deployed in the medical kit to follow at-home patients' treatment plans and enabling remote traceability of patients' adherence. Just press for compliance and in return remind patients localize elements of treatment via auditive notifications.



Smart Hotel

Offer discreet alarm mode to bring help without escalating the gravity of a nervous situation and without rely on smart phone. Pre-defined press mode to allocate room cleaning, service request or emergency call, to expand different application scenarios.

4. Hardware specifications

4.1 General specifications

General specifications	
Main chip	Nordic nRF52 series
Bluetooth	Bluetooth 4.2(Hardware compatible with Bluetooth 5.1)
Dimension	73.1mm x 40.6mm x 16.9mm
Range	Up to 140 meters (in the open area and no obstacles)
Material	ABS & TPU
Waterproof	IP65
Color	White
Installation	Sticker, Lanyard
Button	Side button – For power on/off, battery indication, reset Panic button – For alarm trigger
LED	RGB LED
Sensor	3-axis accelerometer sensor (optional) Buzzer – up to 85dB (optional) Motor (optional)
Operating temperature	-20°C / + 60°C
Storage temperature	-20°C / + 60°C (without battery) 10°C / + 25°C (with battery)
Humidity	0% ~ 95% (non-condensing)
Antenna type	PCB onboard
Power supply	Rechargeable 500mAh lithium battery
Charge port	Type-C port, 5V-1A

Table 1: General specifications of B1 Panic Button

4.2 Battery consumption

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.

3-axis sensor sampling rate	Single press mode			Consumption (uA)	Life time* (Single full charge)
	Alarm mode	Tx power	Advertising interval		
10Hz	OFF	0dBm	100ms	208.01	2 month
10Hz	OFF	0dBm	500ms	51.59	10 months
10Hz	OFF	0dBm	1000ms	29.09	18 months
10Hz	OFF	0dBm	2000ms	22.51	24 months
10Hz	OFF	4dBm	100ms	229.24	2 month
10Hz	OFF	4dBm	500ms	57.30	9 months
10Hz	OFF	4dBm	1000ms	33.21	16 months
10Hz	OFF	4dBm	2000ms	23.33	22 months
10Hz	OFF	-12dBm	100ms	176.49	3 months
10Hz	OFF	-12dBm	500ms	45.31	12 months

10Hz	OFF	-12dBm	1000ms	28.12	19 months
10Hz	OFF	-12dBm	2000ms	19.42	28 months

Table 2: Battery consumption in different conditions

By the way, the typical current consumption of *Motor* and *Buzzer* are as below:

- **Motor:** 80mA
- **Buzzer:** 30mA

So we can do a simple life time estimation in typical scenarios.

- **Pre-conditions:**
 - a) Advertisement: Single press mode, 0dBm Tx Power, 1000ms advertising interval.
 - b) Alarm mode: ON.
 - c) Alarm notification: Motor vibrating for 10 seconds, vibrating interval 500ms.
- **Application scenario:** Treatment compliance, and trigger alarm 10 times per day.
- **Current consumption (per day):** $5s * 80mA * 10 \text{ times} + 29\mu A * 24h = 1.8 \text{ mAh}$
- **Life time estimation:** $500mAh * 80\% \text{ (efficiency)} / 1.8mAh = 266 \text{ days}$.

Remark: The life time here refers to expected life cycle under the standard usage conditions after a single full charge.

4.3 LED descriptions

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

LED response status		
Scenarios	LED color	Response
Power ON	Green	Blinking for 3 seconds
Device full charged	Green	Solid
Device connect	Green	Blinking for 400ms
Power OFF	Red	Solid for 3 seconds
Hardware reset	Red	Solid for 3 seconds and then device reboot
Software reset	Red	Solid for 3 seconds and then device reboot
DFU upgrade	Red	Blinking during DFU upgrade, and solid for 2 seconds after finished, then device reboot
Low battery	Red	Blinking twice
Device charging status	Red	Solid
LED notification	Blue	Customized notification mechanism

Table 3: LED response status in various situations

Remark: The single blinking duration is 100ms by default.

5. Basic instructions

5.1 How to wear/install B1?



Figure 2: How to wear/install B1 Panic Button?

5.2 How to power ON/OFF B1?

Regarding of *B1 Panic Button*, there have two mechanical buttons to implement different functions. One is the “**Side button**” which is located on the side of the product; Another one is the “**Alarm button**” which is located on the front of the product as we have described in the [“Chapter 2 - Product brief”](#).

You can power on/off B1 through the “**Side button**” with below operations:

- **Power ON:** Long press “**Side button**” for more than 3 seconds, and Green LED will keep blinking for 3 seconds to power on.
- **Power OFF:** Long press “**Side button**” for more than 3 seconds, and Red LED will keep solid for 3 seconds to power off.

5.3 How to check battery status?

You can check the battery status of B1 Panic Button by *single pressing “Side button”*, and refer to below response to understand the battery status:

- **Remaining battery percentage > 60%:** Green LED blinking for 1 time.
- **20% ≥ Remaining battery percentage ≥ 60%:** Blue LED blinking for 1 time.
- **Remaining battery percentage < 20%:** Red LED blinking for 1 time.

5.4 How to restore factory settings?

There are two ways to restore factory settings.

- **MK Button APP (Software reset):** Connect B1 with "MK Button" APP and then execute "reset Beacon" operations to finish the software reset.
- **Side button (Hardware reset):** In power off mode, long press "Side button" for 10s or more, then release button and single press "Side button" again within 2s, device will proceed to factory reset.

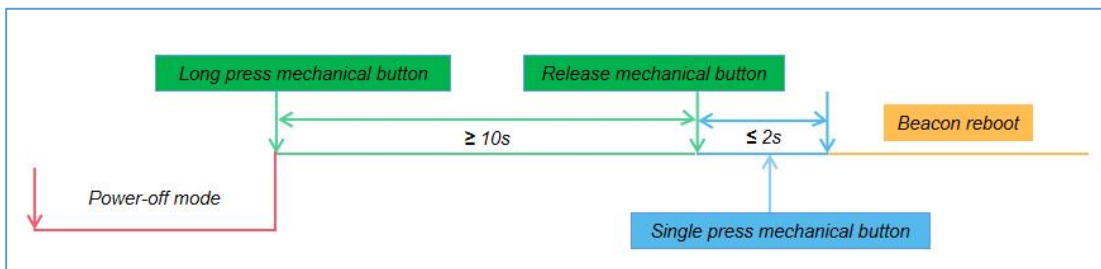


Figure 3: Hardware reset flowchart of B1 Panic Button

Remark: Software reset will not reset connection password.

6. Package information



Figure 4: Package information of B1 Panic Button

<i>Package information</i>		
<i>Item</i>	<i>Quantity</i>	<i>Remark</i>
<i>B1 Device</i>	<i>1</i>	<i>Main equipment</i>
<i>Type-C USB cable</i>	<i>1</i>	<i>Charging cable</i>
<i>Black lanyard</i>	<i>1</i>	<i>Used for hanging equipment</i>

Table 4: Package information of B1 Panic Button

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