



MeshPocket

Beyond Charging,

Unleashing a New Wireless Connectivity Experience



Document version

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1. Overview

1.1 Introduction

Tired of traditional power banks with limited functionality? MeshPocket will exceed your expectations! It's not just a powerful **Qi2** compatible power bank — but also an intelligent device equipped with **Bluetooth/LoRa** long-range communication and E-ink display, which making it a perfect companion for open-source projects like **Meshtastic** and opening new possibilities for wireless connectivity.

MeshPocket is powered by a **5000mAh/10000mAh** high-capacity battery, ensuring long time usage. It supports the Qi2 wireless charging protocol, making it compatible with mainstream wireless charging devices. Offering 5W, 7.5W, 10W, and 15W wireless charging options, it meets the diverse power needs of various devices. The USB-C port supports 9V-2.22A / 5V-3A input or output, allows simultaneous charging and discharging, and enables both wireless and wired discharging at the same time.

Equipped with the nRF52840 chip and high-performance SX1262 LoRa RF chip, offers a transmission range of up to 10 kilometers. The 2.13-inch e-ink display ensures clear visibility even under sunlight, with minimal power consumption.

With these features, MeshPocket is the ideal solution for Meshtastic users, combining reliable power delivery with outstanding connectivity, making it is not just a power bank, but perfect for outdoor adventures and emergency communication.

1.2 Features

Powerful Charging Capabilities

- 5000mAh/10000mAh battery.
- Wireless Charging Support 5W, 7.5W, 10W, and 15W.
- Qi2 compatibility.
- Features robust USB-C ports with input and output capabilities of 9V-2.22A and 5V-3A, providing rapid charging both ways.
- Protocol Compatibility: Supports industry-standard protocols like PD, AFC, and Huawei adapter protocols.
- Supports input overvoltage and undervoltage protection, output overcurrent and short circuit protection, battery undervoltage protection, NTC temperature protection, chip temperature protection, and charging timeout protection.

Advanced Wireless Communication

- Integrates the nRF52840 chip for BLE.
- Features the SX1262 LoRa module with 10km line-of-sight communication range.

Innovative Display & Customization

- Equipped with a 2.13-inch e-ink display, providing clear, power-efficient information updates even in direct sunlight.
- Offers full custom firmware support, allowing developers to adapt it for specialized applications.

Perfect for Meshtastic Users

Seamlessly compatible with **Meshtastic**, MeshPocket is an excellent choice for those seeking a powerful yet compact solution for long-range wireless communication.

2. Specifications

2.1 Generic Parameter

Table 2.1 General specification

Parameters	Description
Battery capacity	5000mAh/3.87V(19.35Wh) 10000mAh/3.87V(38.7Wh)
Rated capacity	3500mAh(5V-2A) 7000mAh(5V-2A)
Battery type	Lithium Cobalt Oxide Polymer Battery
Battery charging limit voltage	4.4V
Charging temperature	0°C~45°C
Discharging temperature	-10°C~45°C
Storage temperature	-20°C~55°C
USB-C input	9V-2.22A, 5V-3A
USB-C output	9V-2.22A, 5V-3A
Wireless Charging output	5W, 7.5W, 10W, 15W
Charge+Discharge	USB-C output (10W) + Wireless charging (5W)
Shell material	ABS, Tempered glass
Weight	140g(5000mAh) 220g(10000mAh)
Dimensions	102.00*74.10*10.80 (unit: mm)
RF chip	nRF52840(BLE), SX1262(LoRa)
E-Ink	2.13 Inch(Learn more)

2.2 Power Consumption

Table2.2 Power consumption

Mode	Condition		Typical
LoRa_TX	Test firmware	5dBm	93mA
		10dBm	122mA
		15dBm	151mA
		20dBm	164mA
BT	Test firmware	UART	93mA
		Scan	132mA
Standby Mode	Meshtastic firmware	Meshtastic shut down	< 200uA

2.3 LoRa RF Characteristics

2.3.1 Receiver Sensitivities (dBm)

Note: Wireless charging operation will significantly degrade Receiver Sensitivities, which will restore to normal after deactivation.

Table2.3.1 Receiver sensitivities

Signal Bandwidth/[KHz]	Spreading Factor	Sensitivity/[dBm]
125	SF12	-135
125	SF10	-130
125	SF7	-124

2.3.2 Transmitter Power (dBm)

Table2.3.2 Transmitter power

Operating frequency band	Maximum power value/[dBm]
863~870	21 ± 1
902~928	21 ± 1

2.4 RGB Indicator Description

Table2.4 RGB Status Indicator Description

Status		Indicator
Remaining battery	71%-100%	Green light on steadily
	31%-70%	Yellow light on steadily
	11%-30%	Red light on steadily
	5%-10%	Red light flashing slowly at 0.5Hz
Over-discharge/no power	≤5%	The red light flashes rapidly at 2Hz. Extinguishes after 5 seconds ^①
	1-30%	Red light flashing slowly at 0.5Hz
	31-70%	Yellow light flashing slowly at 0.5Hz
	71-100%	Green light flashing slowly at 0.5Hz
Fully charged		Green light on steadily
Standby (button triggered) ^②		The current battery level color flashes
Foreign Object Detection (FOD)		Yellow light flashes rapidly at 2Hz
Fault		Indicator light extinguishes, output shuts down

① It extinguishes and the wired/wireless charging output is turned off, but power can still be supplied to the wireless communication section.

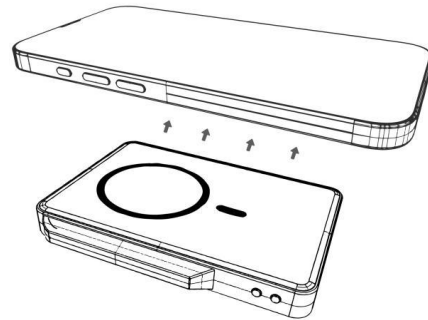
② After touch sensing, if the wireless charger is not connected to a load, the light will not illuminate.

3. Get Started

Note: For first-time use, fully discharge the power bank, then recharge the device to 100%.

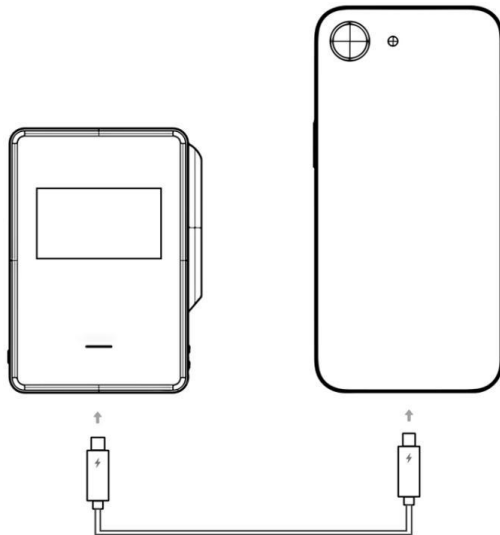
3.1 Wireless output

This product supports the automatic induction charging function of magnetic mobile phones. You only need to place the magnetic mobile phone on the magnetic wireless charging area of the mobile power supply to charge normally. Click “CTRL” button to turn on wireless output. Double click “CTRL” button to turns off wireless output.



Wireless charging

3.2 Wired output

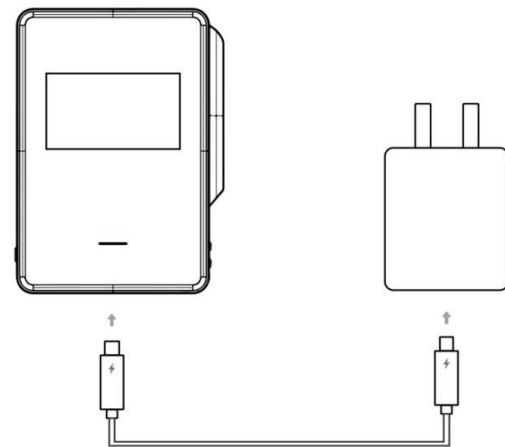


Wired charging

Use the USB-C data cable to connect the device to be charged and the magnetic power bank to charge the device to be charged. Long press “CTRL” to turns off wireless output and wired output.

3.3 DC input charging

Connect one end of the USB-C data cable to the USB-C interface of the mobile power supply, and then connect the other end to the charger to charge the mobile power supply. During charging, the corresponding power indicator light flashes and the remaining power is displayed.



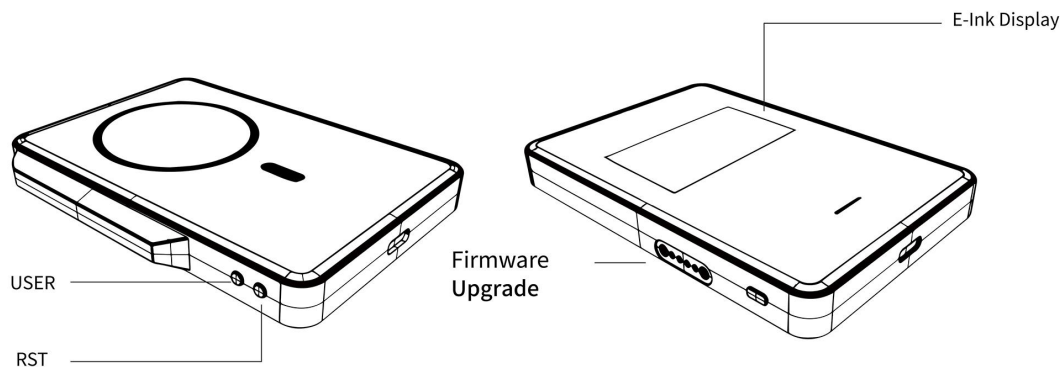
Charging power bank

3.4 Meshtastic

The device comes preloaded with Meshtastic firmware. Firmware updates/flashing can be performed via the side-mounted magnetic programming interface.

When battery level falls below 5%, external charging functions will be disabled while maintaining power supply to Meshtastic.

When you do not need to use Meshtastic, long press the USER button on the side to turn off this function. To enable this function, simply press the RST button.



4.Button Description

Table4.0.0 Button

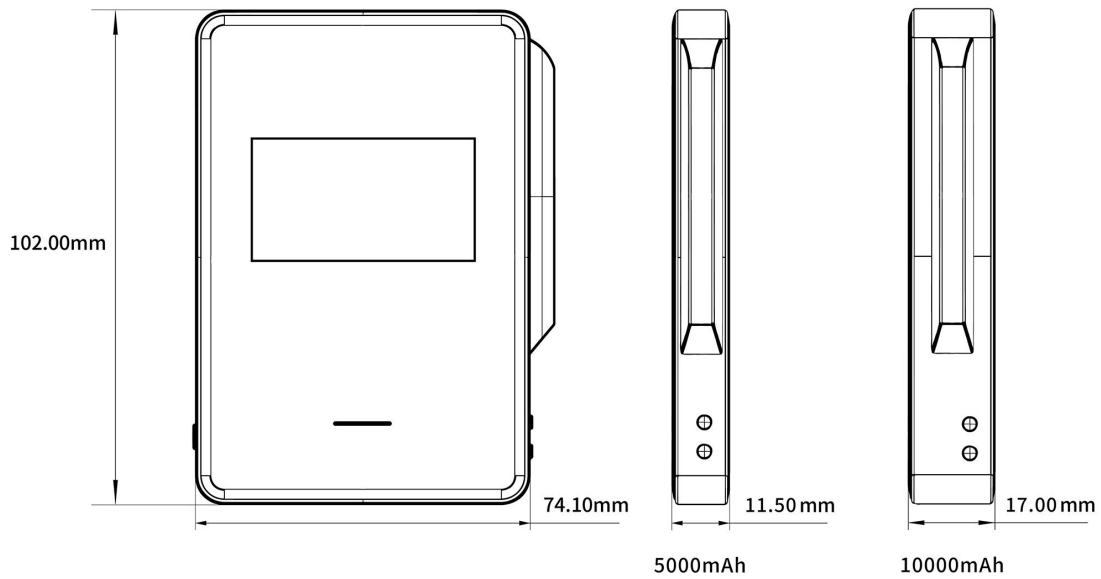
Button	Status	Description
CTRL	Single click	Turns on output. Displays the current battery level via LED indicator.
	Double click	Turns off wireless output
	Long press	Turns off wireless output and wired output
USER	Single click	Toggle Meshtastic options
	Long press	Select Meshtastic option, Turn off Meshtastic
RST	Single click	Reset/wake-up Meshtastic

Note:

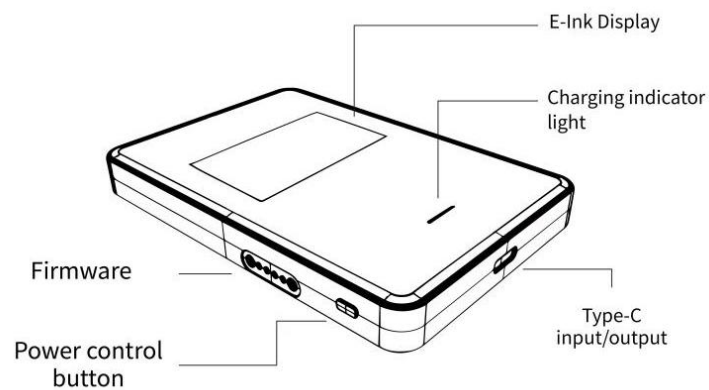
- **Default Charging Mode:** All charging modes are enabled by default. If charging options are disabled, click **CTRL** to activate.
- The **USER/RST** function is affected by the **Meshtastic firmware version**. For specific usage instructions, please refer to the [official Meshtastic documentation](#).

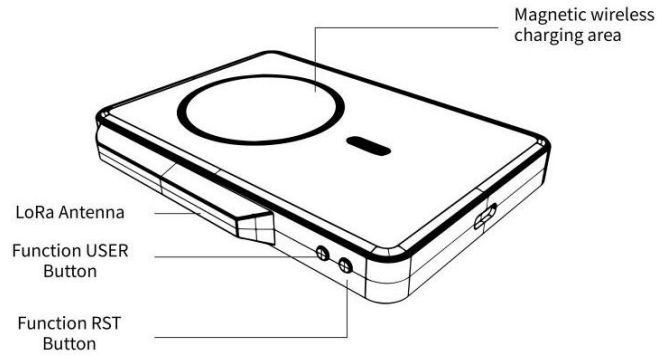
5. Hardware

5.1 Dimensions



5.2 Components





6. Precautions

1. For **first-time use**, fully discharge the power bank, then recharge the device to 100%.
2. Wireless charging operation will significantly degrade RF performance, which will restore to normal after deactivation.
3. When the wireless charging output is abnormal or a foreign object (FOD) is detected, the wireless charging indicator light flashes yellow and recovers within 5S after it is released.
4. You can manipulate the Meshtastic interface with the RST and USER button.
5. To ensure battery life, please charge it at least once every three months.
6. Do not expose this product to high-temperature environments or around heating equipment, such as cars, sunlight, heaters, microwave ovens, ovens and other high-temperature environments, as it may cause an explosion.
7. It is strictly prohibited to use unapproved or incompatible power adapters, charging cables, etc., which may cause fire, explosion or other dangers. Please use original or certified data cables.
8. Do not leave this product in an unventilated space for a long time, such as a handbag, etc. Confined spaces can easily cause fire and other dangers.

9. This product contains lithium-ion batteries. It is strictly prohibited to disassemble the product casing without permission to avoid damage to the battery core or fire hazard.

10. Do not drop, squeeze, puncture, short-circuit this product, or put it into water or fire to avoid fire hazards. Please dispose of this product in accordance with local regulations. Do not dispose of this product as domestic waste. Improper disposal may cause explode.

11. Please do not use this product during thunderstorms to avoid product failure or click hazards.

12. Do not come into contact with liquids and avoid dropping the product. If it has battery swelling, leakage, deformation, etc., please stop using it.

13. Please keep this product out of reach of children.

7. Resource

- User guide: [Heltec Products Operation Documentation](#)
- RF schematic: [MeshPocket_nRF52840+SX1262](#)
- Resource station: resource.heltec.cn
- E-INK datasheet: [LCMEN2R13ECC1](#)

8. Heltec Contact Information

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Documents

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Heltec Automation © Limited standard files