

ED20W

LoRaWAN Smart Watch User Manual

V1.0.0

Document Information

Version	Time	Description	Remark
V1.0.0	2020-05-07	Preliminary version	Mike

Table of contents

1. Description	- 1 -
2. Features	- 1 -
3. Interface	- 2 -
4. Specification	- 3 -
5. Operation guide.....	- 5 -
5.1 Power on	- 5 -
5.2 Join the Network	- 5 -
5.3 Check system menu.....	- 5 -
5.4 Switch screen	- 5 -
5.5 SOS.....	- 5 -
5.6 Charging	- 5 -
5.7 Device positioning	- 5 -
5.8 Motion detection.....	- 5 -
5.9 Power off	- 5 -
6. Package	- 5 -

1. Description

ED20W is a smart wristband based on LoRaWAN communication. Build in GNSS and Bluetooth module, can achieve indoor and outdoor real-time positioning combined with motion sensors. With wearing detection, it can realize real-time collection of health data such as heart rate, number of steps and sleep. The data will be transmitted to the platform through the LoRaWAN Network.



Application

- Smart safety solution for people working in industrial companies. Such as large oil&gas company, Power station company, chemistry company.
- Smart senior care, Isolating people from airport, hospital.

2. Features

- ✓ **Communication via LoRa** : communication range up to 1.5KM line-of-sight , 500 ~ 1000Meters in dense urban , compatible with any LoRaWAN™ network.
- ✓ Build in GNSS+ Bluetooth chip, Indoor & outdoor **real-time tracking**
- ✓ **Heart rate, number of steps**: the measurements are made at a configured frequency and automatically send to the LoRaWAN™ network.
- ✓ **Real-time Alarm**: When the heart rate exceeds the standard, an alarm is sent.
- ✓ **SOS in emergency**
- ✓ **Long Battery Life**: Battery life as long as 7 days @ 15mins uplink duty cycle, a notification is sent when the battery power falls below 10%.

3. Interface



Function	Description
Display	Display detection parameters
Power On	Press and hold button A 3 seconds
Power Off	Press and hold button A 10 seconds
Switch the screen	When the screen is off or in host interface, Press button A to switch the screen
Check system manual	Press button B to view the system menu and turn the page
SOS	Press and hold Button B 3 seconds to trigger SOS, the SOS alarm will display on host interface if sent successfully to the platform.
Charging	Use the standard magnetic charging cable to charge the device, can be fully charged within 2 hours

4. Specification

Parameters	Specification
Modem	ISM Band LoRa®
Frequency	AS923MHz, US915Mhz, EU868MHz
Tx Power	Max +20dBm
Communication range	500~1000M in dense urban,1.5KM los
Positioning	Build in GNSS, Bluetooth and accelerometer, Positioning accuracy:5~20 Meters (Indoor positioning accuracy varies depending on Beacon density)
Operating mode	<ol style="list-style-type: none"> 1、 The default positioning interval is 15mins, supports wear detection 2、 Automatically send a uplink message when power on the device, platform will send a downlink message. 3、 The default downlink interval $\geq 15s$ 4、 Trigger SOS will not change the positioning logic 5、 The wristband uplink positioning data, power information data and heart rate information according to the uplink cycle 6、 The watch automatically detects the heart rate when wearing the wristband and it' s on the heart rate detection page, It will displays the latest detection information after the detection is completed
Bluetooth	Low power consumption Bluetooth for indoor positioning
Display	240*204 TFT Display

Rubber strap	22mm standard size (Replaceable)
Buttons	Function button A and B
Battery capacity	Polymer battery, 400mAh, 3.8V
Charging	Magnetic charging cable
Operation time	7 days standby;
Enclosure	IP67(IP65 opt.)
Electronic tags	Support RFID& NFC (not equipped by default)
Health data	Heart rate,steps detection
SOS	Support
Alarm	SOS alarm, Low power alarm
Operation temperature	-20~60C°
Operation humidity	10% ~ 90%, Non-condensing
Dimensions	TYP. 48*52*14.5mm (W*L*H)
Weight	50g

Table 4.1 specification

5. Operation guide

5.1 Power on

- In the shutdown state, the device automatically turns on when connected to the charging cable.
- Press and hold button A 3 seconds to power on the device.

5.2 Join the Network

After turning on the device, it starts to search the LoRaWAN network and register to the network, when successfully connected to the LoRaWAN Network, the device will request UTC time synchronization from the server. The host interface will display the network signal, time and other information in the current environment.

5.3 Check system menu

Press button B to view the system menu and switch the page

Host interface-Message-Heartrate -Steps-Themes-System Version

5.4 Switch screen

When the screen is off or in host interface, Press button A to switch the screen

5.5 SOS

Press and hold Button B 3 seconds to trigger SOS, the SOS alarm will display on host interface if sent successfully to the platform. Press and hold again to exit. It will automatically quit after 20 minutes

5.6 Charging

Use the standard magnetic charging cable to charge the device, The smart wristband needs to be fully charged for the first time, and it takes about 2 hours.

5.7 Device positioning

The default GPS/Bluetooth positioning interval is 15mins, can be adjusted. You also can set the positioning interval in different period, no more than 4 period.

5.8 Motion detection

The equipment regularly detects the current position of the person, and when the movement is detected, the current location is updated to the platform in real time.

5.9 Power off

Press and hold button A 10 seconds to power off the device.

6. Package

Item	Model No.	QTY	尺寸	N.W	Accessories
Smart wristband	ED20W	1pcs/Box	109*75*59*MM	190g	charging cable*1, User manual*1, Warranty card*1