LW004-PB

User Manual

MOKO TECHNOLOGY LTD.

Version 1.2

www.mokosmart.com

CONTENT

1 About this Manual

The purpose of this manual is to outline how to apply LW004-PB in suitable scenarios, as well as how to configure and join into LoRa network.

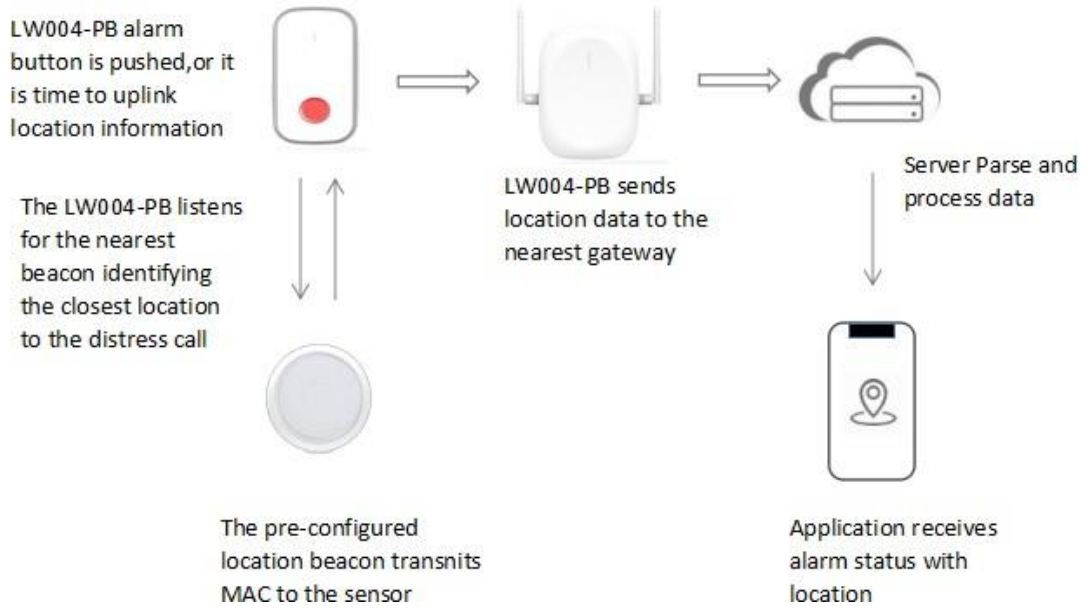
2 Product Introduction

2.1 Overview

The LW00-PB is a long-range panic button device for Class A type devices based on the LoRaWAN open protocol and is compatible with the LoRaWAN protocol. It is small, compact, and easy to use. The LW004-PB has Bluetooth and GPS for positioning and can be used for both indoor and outdoor tracker objects.
LW004-PB also has built in RFID and 3-axis accelerometer sensor. It can be used to employee attendance, access control, identity identification and motion detection.

2.2 Application

2.2.1 Working Principle



2.2.2 Track people's movements

LW004-PB can be used with BLE Beacons and GPS system. In general, the beacons position is fixed. No matter what mode the device is, the device will scan the beacons for at least 10 seconds(up to 600s) and turn on GPS for 3minutes at the end of each reporting interval .Then device will select

the closest MAC beacon(up to four closest MAC beacon) which is based on your filter conditions before sending the data to the server. Finally, the beacon's information and gps data will be uploaded to server at the reporting timing.
Through the beacon information and GPS data, we can roughly know the position and moving trajectory of the people who wear the device.

Note: *GPS data is only available outdoors.*

2.2.3 Emergency button

There is a red button on the front of the device. When people who wear the lw004-pb are in emergency, they can press the red button for alert, the device will come into alarm mode. In alarm mode, the yellow led of device will keep on blinking and the device motor will vibrate unless the device exit alarm.
Meanwhile, the device will report the GPS data and surrounding beacon's information. Through the beacon information and GPS data, we can roughly know the position and moving trajectory of the people who are in emergency and find and help the people faster.

Note: *GPS data is only available outdoors.*

2.2.4 Motion Detect

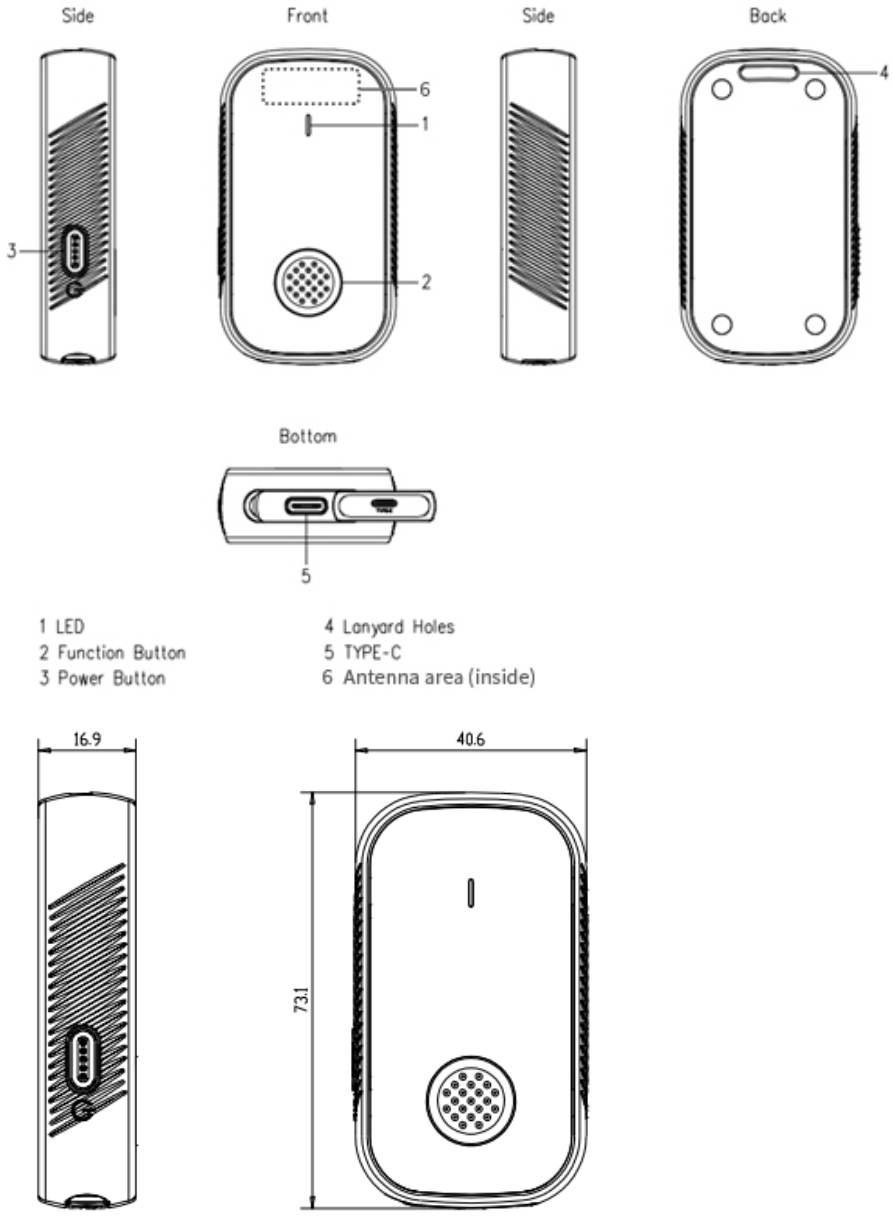
LW004-PB built in 3-axis. There is 3-Axis sensor data in every uplink payload. It includes the acceleration value of X,Y,Z axis and the angle of relative to the X-axis and the Y-axis . Based on the value, user can judge the motion status and relative direction of device.

2.2.5 RFID Function

LW004-PB built in RFID, it can be applied to access control, attendance applications, such as office buildings, residential areas, etc.

2.3 Product Specifications

2.3.1 Appearance



2.3.2 LED Indicators and Button

Items	Indicator	Operation	Remark
Turn ON	Solid blue and keep 3S	Press and hold the power button for 5 seconds till the LED indicate blue and release. The LED will indicate blue for 3 seconds to show the LW004-PB is turned on.	
Turn OFF	Red LED Blink 3S	Press and hold the	

		power button for 5 seconds till the red indicator flashes quickly and release. The indicator will flash red for 3 seconds to show the LW004-PB is turned off.	
Join LoRa Network	Solid green and keep 3S	If the device had never Joined any network, after turning on, the device automatically sends join request	It will send join request automatic after power on the device or send "connect" request in APP
Login in	Green LED Blink 1S	Connect to the device via APP successfully	
Login out	Red LED Blink 1S	APP disconnect to the device	When the device in alarm status the indicator may be not visible
Trigger Alarm	Yellow LED Blink	Double click the alarm button	Either enters the alarm mode or send alarm message to server, there will also have vibration reminder
Exit Alarm	Alarm indicator LED turn off	Press alarm button and hold on 15S or send downlink command to exit alarm	
Firmware Upgrade	Green LED Blink during the upgrade	Firmware upgrade via OTA in DFU mode	
	Solid Blue and keep 3S after upgrade successfully		
	Solid Red and keep 3S after upgrade failed		
Charging	Blue LED blink	Plug in type-c charger	
Full Charged	Solid blue	Plug in type-c charger	
Low Battery Reminder	Red LED blink	Battery level lower than the set value	

2.3.3 Product Datasheet

Please refer to the *LW004-PB Datasheet* for more details.

3 Set up Instruction

3.1 Turn on /off

Items	Operation
Turn ON	Press and hold the power button for 5 seconds till the LED indicate blue and release. The LED will indicate blue for 3 seconds to show the LW004-PB is turned on.
Turn OFF	Press and hold the power button for 5 seconds till the red indicator flashes quickly and release. The indicator will flash red quickly for 3 seconds to show the LW004-PB is turned off.

3.2 Join Into Lora Network

To join LW004-PB into LoRa network to communicate with LoRa gateway. The network operation is as following:

1) If LW004-PB had never joined any network:

First, turn on the device.

Second, use Mokolora APP to connect the device then get required ID and Keys.

Default join ID and Keys as following:

DevEUI: BLE MAC+ FFFF,example:MAC:112233445566 DevEUI:112233FFFF445566
AppEUI: 526973696e674846
AppKey: 2b7e151628aed2a6abf7158809cf4f3c
DevAddr: The last four bytes of BLE MAC address
AppSKey: 2b7e151628aed2a6abf7158809cf4f3c
NwkSkey: 2b7e151628aed2a6abf7158809cf4f3c

Third, register the device on Lora server

Forth, click connect on Mokolora APP to send a join request to Lora server, it will search an available LoRa network to join. The green indicator will stay on for 5 seconds to show it joins into the network, otherwise, the indicator will be off.

(2) If LW004-PB had been joined into a LoRa network, turn off and turn on the device, the green indicator will stay on for 5 seconds to show it joins into the network.

Note: *About MokoLora APP details, please check the instructions in* *Chapter 9 Moke Lora APP*

3.3 Gateway Setup

Before the gateway communicate with the LW004-PB Panic Button, please refer to your

gateway's user manual. If you use Moko LoRaWAN gateway MKGW2-LW, please refer to the *MOKO LoRaWAN Gateway MKGW2-LW Configuration Guide.*

3.4 Parameters Configuration

Before you start configuring, prepare MokoLora APP.
1. To configure parameters through MokoLora APP, follow the instructions in *Chapter 9 Moke Lora APP*
2. To configure parameters through downlink command, follow the instructions in *Chapter 8 Downlink Command*

4 Standby mode

After joining the network, the device will upload the device location information to the server within three minutes. The device will then be placed in standby mode or non-alarm mode, and the device location information can be uploaded according to the configured reporting interval.

In each cycle, the device will check the network connection via *LinkcheckReq Command*. If the LoRa network detects that it is disconnected, the device will first join the LoRa network and then send the device location information.

The longest battery life is more than one month in standby mode when the reporting interval is 720min and GPS search satellite time is 1min.

LinkCheckReq: Used by an end-device to validate its connectivity to a network.It is from LoRaWAN standard protocol stack.

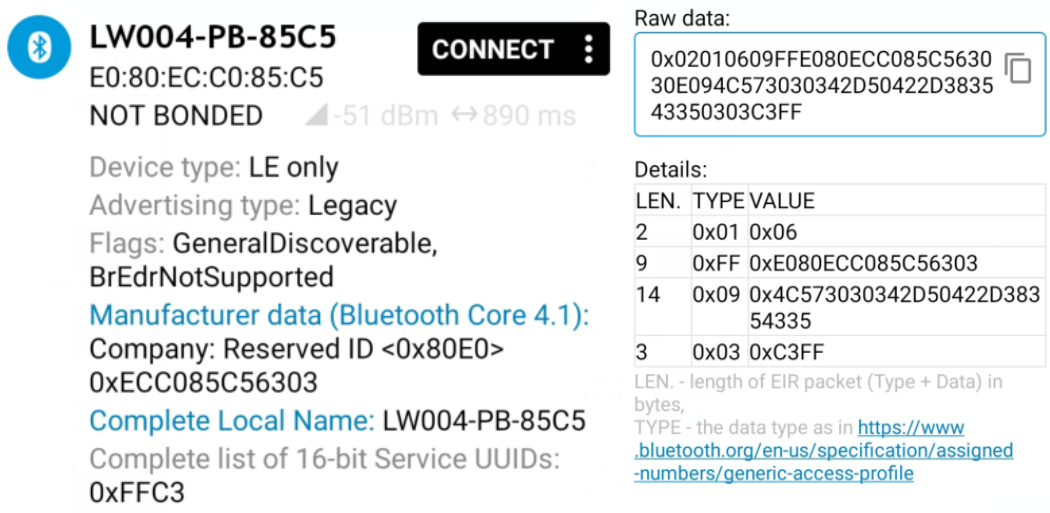
5 Alarm Mode

After the device is turned on and the alarm is triggered, the device motor will vibrate and Yellow indicator LED Blink. The alarm mode will remain until the "stop alarm" command is received, or the user presses and hold the alarm button for 15 seconds to exit the alarm mode.

In the alarm mode, the device uploads location information to the server every 10 seconds by default., and the user can configure the alarm mode reporting interval through the APP and downlink commands.

The shortest battery life is about 14hours in alarm mode when reporting interval is 10s, GPS and vibration are turn on.

6 Advertising Packet



- MAC address-0XE0 80 EC C0 85 C5
- Battery level-0X63 (99%)
- Device type-0x03
- Device advertising name-0x4C 57 30 30 34 2D 50 42 2D 38 35 43 35(LW004-PB-85C5)
- server UUID-FFC3

7 Uplink Payload

The uplink data packet includes battery levels, alarm status, GPS data, and the nearest MAC beacon, 3- axis data. 3-axis data can be used to judge the status of the device.

Byte Index	Type	Data Type	Value	Description
1	Battery Level	Unit	0X00-0X64	
2	Alarm Status	Unit	0X00,0X01	00： alarm off, 01:alarm on
3-6	GPS Latitude	Int	0X000000-0XFFFFFF	The data format is little-endian. After the hex data converts to decimals, the calculation formula is (decimal value)x90/8388607 degree. Positive Value indicates northern latitude, Negative Value shows southern latitude
7-10	GPS Longitude	Int	0X000000-0XFFFFFF	The data format is little-endian, after the hex data converts to decimals, the calculation formula is (decimal value)x180/8388607 degree. Positive Value indicates eastern longitude, Negative Value shows western longitude

11-16	1st MAC Beacon Address	Unit	0X000000000000-0XFFFFFFFFFFF	If need
17	1st MAC Beacon RSSI	Unit	0X00-0XFF	If need, convert the hex data to decimals, and then Minus 256
18-23	2nd MAC Beacon Address	Unit	0X000000000000-0XFFFFFFFFFFF	If need
24	2nd MAC Beacon RSSI	Unit	0X00-0XFF	If need, convert the hex data to decimals, and then Minus 256
25-30	3rd MAC Beacon Address	Unit	0X000000000000-0XFFFFFFFFFFF	If need
31	3rd MAC Beacon RSSI	Unit	0X00-0XFF	If need, convert the hex data to decimals, and then Minus 256
32-37	4th MAC Beacon Address	Unit	0X000000000000-0XFFFFFFFFFFF	If need
38	4th MAC Beacon RSSI	Unit	0X00-0XFF	If need, convert the hex data to decimals, and then Minus 256
39-40	X-axis acceleration	Int	0X0000-0XFFFF	The data format is big- endian. After the hex data converts to decimals, the calculation formula is (decimal value)x2/32768,unit:g
41-42	Y-axis acceleration	Int	0X0000-0XFFFF	The data format is big- endian. After the hex data converts to decimals, the calculation formula is (decimal value)x2/32768,unit:g
43-44	Z-axis acceleration	Int	0X0000-0XFFFF	The data format is big- endian. After the hex data converts to decimals, the calculation formula is (decimal value)x2/32768,unit:g
45-46	Angular	Unit	0X0000-0XFFFF	The angular is relative to the X-axis and the Y-axis. The data format is a big-endian unit: degree

Example:2F 01 79 51 2B 00 77 66 51 00 D9 19 4D 75 0B 33 BF 00 D0 00 6C 03 A2 00 0E

2F: battery level 47%

01: alarm status on

79 51 2B 00: GPS Latitude, the normal byte order is 00 2B 51 79, the first byte 00 is sign bit, it is the convert to decimal is 2838905, the actual latitude is 2838905*90/8388607=30.45814996458888 degree

77 66 51 00: GPS Longitude, the normal byte order 00 51 66 77,the first byte 00 is sign bit, it is the convert to decimal is 5334647,the actual latitude is 5334647*180/8388607=114.4691198431396 degree

D9 19 4D 75 0B 33: the 1st Beacon MAC

BF: convert BF to 191, the 1st Beacon RSSI is 191 - 256 =-65 dbm

00 D0: X-axis acceleration, it is the convert to decimal is 208, the actual value is 208x2/32768=0.0126953125 g

00 6C: Y-axis acceleration, it is the convert to decimal is 108, the actual value is 108x2/32768=0.006591796875 g

03 A2: Z-axis acceleration, it is the convert to decimal is 930, the actual value is 930x2/32768=0.0567626953125 g

00 0E: The angular relative to the X-axis and the Y-axis, the actual value is 14 degree.

8 Downlink Command

For the commands used to configure and read device information, please refer to the following details.

Note： *LW004-PB supports downlink getting and configuring the device parameter in CLASS A.*

8.1 Get Device Information

8.1.1 Format

The response will be received after sending the message on LoRa server to get the device information.The response message has two types: get information success or failure.The message is sent in the downlink window, and the response information is displayed through the uplink window.

Message type	Direction	Header code	Command code	Data length	Data	End code
The message for getting device information	Downlink	0xED	See below 'Get device information code list'	none	none	0XEE
Response for getting device information success	Uplink	0XED	See below 'Get device information code list'	Read data length	Data value	None
Response for getting device information failure	Uplink	0XED	See below 'Get device information code list'	None	None	0XFF

Note: *The wrong command code sent or the system is busy may cause to get device information fails. If the device RX window is not opened, or the message sends failed, it will no response.*

8.1.2 Get Device Information Command Code List

Command code	Description	Data type	Data length	Example	Remark
0x05	Get BLE firmware version	String (ASCII)	max 17 bytes	Send:ED05EE Response:ED050656312E302E34 (Get BLE version V1.0.4)	
0x06	Get LORA firmware version	Unit	max 17 bytes	Send:ED06EE Response:ED060401000300 (Get LoRa version 1.0.3)	
0x07	Get DevAddr	Unit	4 bytes	Send:ED07EE Response:ED0704ECC085C5 (Get DevAddr ECC085C5)	
0x08	Get NwkSKey	Unit	16 bytes	Send:ED08EE Response:ED08102B7E151628AED2A6ABF7158809CF4F3C (Get DevAddr 2B7E151628AED2A6ABF7158809CF4F3C)	
0x09	Get AppSKey	Unit	16 bytes	Send:ED09EE Response:ED09102B7E151628AED2A6ABF7158809CF4F3C	

				(Get AppSKey 2B7E151628AED2A6ABF7158809CF4F3C)	
0x0A	Get DevEUI	Unit	8 bytes	Send:ED0AEE Response:ED0A08112233FFFF445566 (Get DevEUI 112233FFFF445566)	
0x0B	Get AppEUI	Unit	8 bytes	Send:ED0BEE Response:ED0B0870B3D57ED0026BE6 (Get AppEUI 70B3D57ED0026BE6)	
0x0C	Get AppKey	Unit	16 bytes	Send:ED0CEE Response:ED0C102B7E151628AED2A6ABF7158809CF4F3C (Get AppKey 2B7E151628AED2A6ABF7158809CF4F3C)	
0x0D	Get Region/Subnet	Unit	1 byte	Send:ED0DEE Response:ED0D0100 (Get Region/Subnet 00:EU868)	00:EU868 01:US915 03:CN779 04:EU433 05:AU915 07:CN470 08:AS923 0A:IN865
0x0E	Get LoRaWAN Class	Unit	1 byte	Send:ED0EEE Response:ED0E0101 (Get LoRaWAN Class 01:CLASS A)	
0x0F	Get activation mode	Unit	1 byte	Send:ED0FEE Response:ED0F0101 (Get activation mode 02:OTAA)	01:ABP 02:OTAA
0x10	Get GPS sleep time	Unit	4 bytes	Send:ED10EE Response:ED1004D0020000 (The data format is little-endian. Get GPS sleep time 02D0 convert to decimal is 720min)	Unit:min
0x11	Get network connection status	Unit	1 byte	Send:ED11EE Response:ED110101 (Get network connection status 01:connected)	00:disconnected 01:connected 02:connecting
0x32	Get uplink message type	Unit	1 byte	Send:ED32EE Response:ED320100 (Get uplink message type 00:unconfirmed message)	00:unconfirmed 01:confirmed
0x2B	Get BLE scan filter name	String (ASCII)	Max 11 bytes	Send:ED2BEE Response:ED2B00	

				(Get scan filter name empty)	
0x2C	Get BLE scan filter RSSI	Unit	1 byte	Send:ED2CEE Response:ED2C0164 (Get scan filter RSSI 64 convert to decimal is 100)	unit:-dBm
0xC0	Get alarm status	Unit	1 bytes	Send:EDC0EE Response:EDC00100 (Get alarm status 00:alarm off)	alarm on: 01 alarm off: 00,
0xC1	Get alarm report interval	Unit	2 byte	Send:EDC1EE Response:EDC1020A00 (Get alarm report interval 000A convert to decimal is 10)	unit:s
0xC2	Get alarm trigger mode	Unit	1 bytes	Send:EDC2EE Response:EDC20102 (Get alarm trigger mode 02:double click)	01:single click 02:double click 03:long press
0xC3	Get vibration sensor switch status	Unit	1 bytes	Send:EDC3EE Response:EDC30100 (Get vibration sensor switch status 00:off)	00:vibration off 01:vibration on
0xC4	Get GPS switch status	Unit	1 bytes	Send:EDC4EE Response:EDC40101 (Get GPS switch status 01:on)	00:GPS off 01:GPS on
0xC5	GPS search satellite time	Unit	1 bytes	Send:EDC5EE Response:EDC50103 (Get GPS search satellite time 03)	
0xC7	Get MAC Address filter condition	Unit	0-6 bytes	Send:EDC8EE Response:EDC70299E7 (MAC Filter : 99 E7)	
0xC8	Get Major filter condition	Unit	0/4 bytes	Send:EDC8EE Response:EDC8040A001E00 (Major Filter : 10-30)	Convert to decimal 0A00: 10 1E00: 30
0x C9	Get Minior filter condition	Unit	0/4 bytes	Send:EDC9EE Response:EDC9040A001E00 (Minor Filter : 10-30)	Convert to decimal 0A00: 10 1E00: 30
0xCA	Get UUID filter condition	Unit	0-16 bytes	Send:EDCAEE Response:EDCA04000A001E (UUID Filter : 00 0A 00 1E)	
0xCC	Get Low power prompt value	Unit	1 byte	Send:EDCCEE Response:EDCC010A (Low power prompt value : 10%)	Convert to decimal 0A: 10
0xCD	Get Motor vibration intensity	Unit	1 byte	Send:EDCDEE Response:EDCD010A (Motor vibration intensity : 10%)	Convert to decimal 0A: 10
0xCF	Get quantity of reported	Unit	1 byte	Send:EDCFEE Response:EDCF0101	Convert to decimal

	device			(Quantity of reported device : 1)	01: 1
0xD2	Get network check cycle	Unit	1 byte	Send:EDD2EE Response:EDD20104 (Network check cycle : 4 H)	Convert to decimal 04: 4

8.2 Configure Device Information

8.2.1 Format

The response will be received after sending the message on LoRa server to get the device information.The response message has two types: configure device parameter success or failure.But the format is same.The message is sent in the downlink window, and the response information is displayed through the uplink window.

Message type	Direction	Header code	Command code	Data Length	Data
The message for configuring device information	Downlink	0xED	See below configure command code list	The total length of the configure data	Data value
Response	Uplink	0XED	See below configure command code list	0X01	0XAA: configure success 0XFF: configure failed

Note: *The wrong command code sent or the system is busy may cause to configure device information fails. If the device RX window is not opened, or the message sends failed, it will no response.*

8.2.2 Configure Device Information Command Code List

Command code	Description	Data type	Data length	Example	Remark
0x37	Configure DevAddr	Unit	4 bytes	Send:ED370401959CF3 Response:ED3701AA	
0x38	Configure NwkSKey	Unit	16 bytes	Send:ED38102B7E151628AED2A6ABF7158809CF4F3C Response:ED3801AA	
0x39	Configure AppSKey	Unit	16 bytes	Send:ED39102B7E151628AED2A6ABF715	

				8809CF4F3C Response:ED3901AA	
0x3A	Configure DevEUI	Unit	8 bytes	Send:ED3A08526973696E674846 Response:ED3A01AA	
0x3B	Configure AppEUI	Unit	8 bytes	Send:ED3B08526973696E674846 Response:ED3B01AA	
0x3C	Configure AppKey	Unit	16 bytes	Send:ED3C102B7E151628AED2A6ABF7158809CF4F3C Response:ED3C01AA	
0x3D	Configure Frequency plan	Unit	1 byte	Send:ED3D0101 Response:ED3D01AA	00:EU868 01:US915 03:CN779 04:EU433 05:AU915 07:CN470 08:AS923 0A:IN865
0x3F	Configure activation mode	Unit	1 byte	Send:ED3D0101 Response:ED3D01AA	01:ABP mode; 02:OTAA mode
0x40	Configure GPS sleep time	Unit	4 bytes	Send:ED40043C000000 Response:ED3D01AA	The data format is little-endian, Unit: min
0x6A	Configure scan filter name	String(ASCII)	Max. 11 bytes	Send:ED6A044D4F4B4F Response:ED6A01AA	If no need filter name, send data ED6A00
0x6B	Configure scan filter RSSI	Unit	1 byte	Send:ED6B013C Response:ED6B01AA	Unit:-dBm
0x6F	Configure uplink message type	Unit	1 byte	Send:ED6F0101 Response:ED6F01AA	00: Unconfirmed 01: Confirmed
0x74	Configure to stop alarm	Unit	1byte	Send:ED740100 Response:ED7401AA	01: stop alarm
0x75	Configure alarm report interval	Unit	2 bytes	Send:ED75023C00 Response:ED7501AA	Unit :s
0x76	Configure alarm trigger mode	Unit	1 byte	Send:ED760101 Response:ED7601AA	01:single click 02:double click 03:long press
0x77	Configure vibration status	Unit	1 byte	Send:ED770100 Response:ED7701AA	00:vibration off 01: vibration on
0x78	Configure GPS status	Unit	1 byte	Send:ED780100 Response:ED7801AA	00:GPS off 01: GPS on

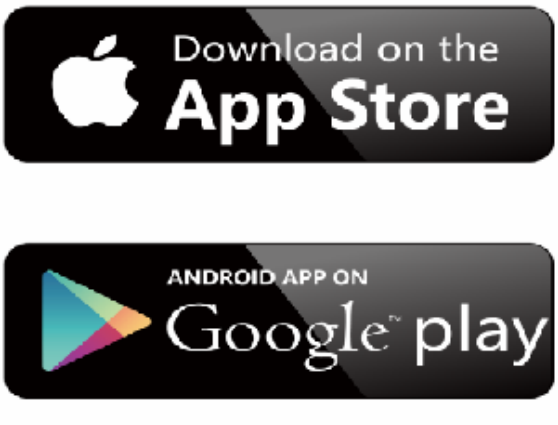
0x79	Configure GPS search satellite time	Unit	1 byte	Send:ED790101 Response:ED7901AA	Range:1-10 Unit :min
0x81	Configure mac address filter condition	Unit	0-6 bytes	Send:ED810299E7 Response:ED8101AA	MAC filter :99 E7
0x82	Configure major filter condition	Unit	0/4 bytes	Send:ED82040A001E00 Response:ED8201AA	Little-Endian Convert to decimal 0A00: 10 001E: 30 Range: 10 - 30
0x83	Configure minor filter condition	Unit	0/4 bytes	Send:ED83040A001E00 Response:ED8301AA	Little-Endian Convert to decimal 0A00: 10 001E: 30 Range: 10 - 30
0x84	Configure UUID filter condition	Unit	0-16bytes	Send:ED84040A0B0C1D Response:ED8401AA	UUID filter: 0A 0B 0C 0D
0x86	Configure low power prompt value	Unit	1	Send:ED86010A Response:ED8601AA	Convert to decimal 0A:10 low power prompt value :10%
0x87	Configure motor vibration intensity	Unit	1	Send:ED870132 Response:ED8701AA	Convert to decimal 32:50 Motor vibration intensity: 50%
0x89	Configure quantity of reported device	Unit	1	Send:ED890101 Response:ED8901AA	Quantity of reported device: 1
0x8B	Configure network check cycle	Unit	1	Send:ED8B0104 Response:ED8B01AA	Convert to decimal 04: 4 Network check cycle:4H

9 MOKO LoRa APP

For the detailed operation of the Moko Lora app to configure and read device information, please refer to the following instructions:

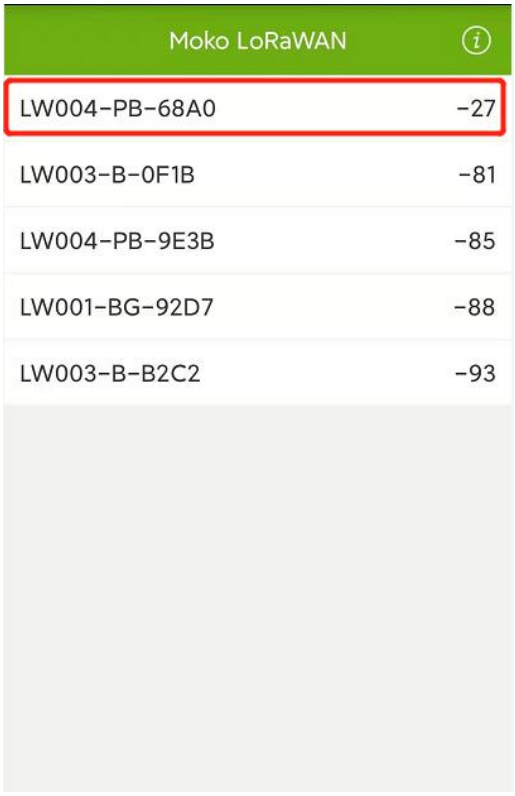
9.1 Install MokoLora APP

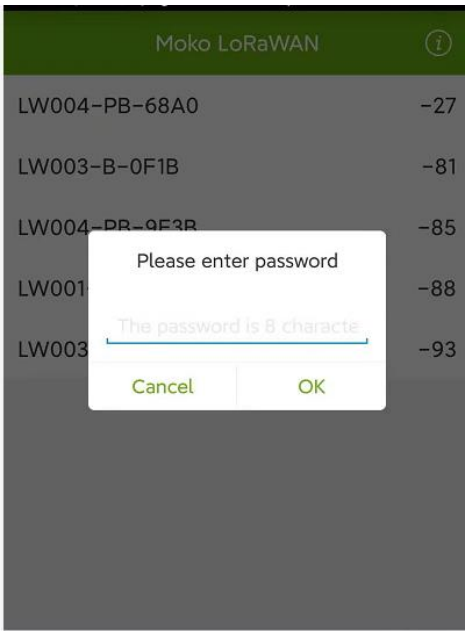
User can get the APP download link from below QR code,or search “MokoLora” in your phone APP store： Please allow bluetooth to be enabled during the installation process.This APP communicates with the device through bluetooth,and it only supports above android4.4 and IOS9.0 system.



9.2 Scan and Connect LW004-PB

After the device is turned on, the device Bluetooth starts broadcasting. Open the APP, and you can search the LW004-PB device by pulling down the APP screen. The distance between the phone and the device should be kept within 10m without wall obstruction. Otherwise, the device will not be searched. After searching for the device, click the device name to connect the device. The default broadcast name of the device: LW004-PB-XXXX, XXXX is the last 4 bits of device MAC addresses.



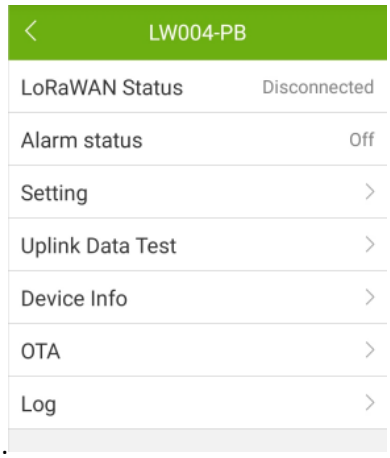


click the device name to connect the device that you want to configure. Then you should enter the password, the default password is “Moko4321”.

Noted: *If a password is not entered within one minute, the login box will disappear, you should click “CONNECT” again.*

9.3 Main Page

The APP main page will be displayed as below after the APP connects with the device successful.



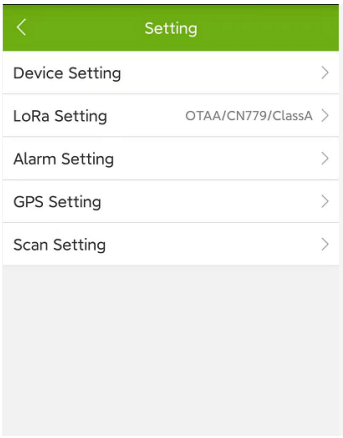
LoRaWAN Status: There are three different network status Disconnected,Connecting and Connected

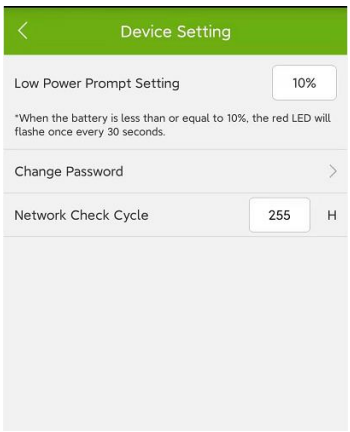
Alarm status: On or Off

Function menu bar: Setting,Uplink Data Test,Device Info,OTA,Log

Noted: *If there is no action within two minutes after login, the system will automatically login out.*

9.4 Get and Configure General Device Parameter





Come into setting interface. In the Device Setting page we can get and configure some general parameter.

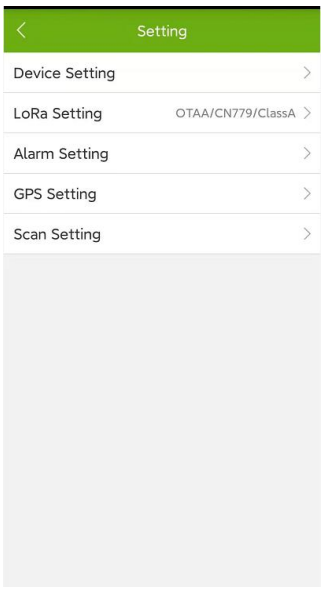
Low power prompt setting: The default value is 10%. There are 6 options：10%,20%,30%,40%,50%,60%

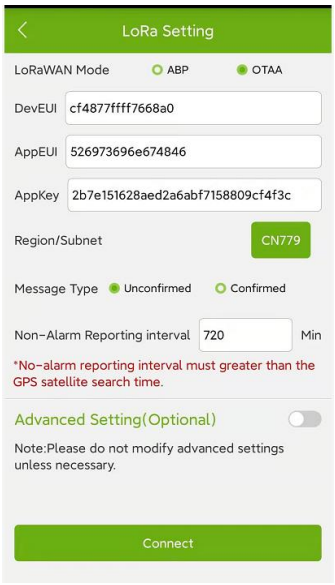
Change password: The default password is ‘‘Moko4321’’.Length of password: 8 characters (ASCII visible characters).Users need to enter the same contents twice to modify password.

Network check cycle: The default is 255. The value ranges from 0-255. 255 means that the device will check the network connection before every message is uploaded.0 means that the device will never check the network connection. 1-254 means that the device will check the network connection every （1-254） hours.

Noted: *Some LoRa Server platforms did not support this network check function,for example TTN server, if you want use device in these platforms, should set the network check cycle to 0.*

9.5 Get and Configure LoRaWAN Data

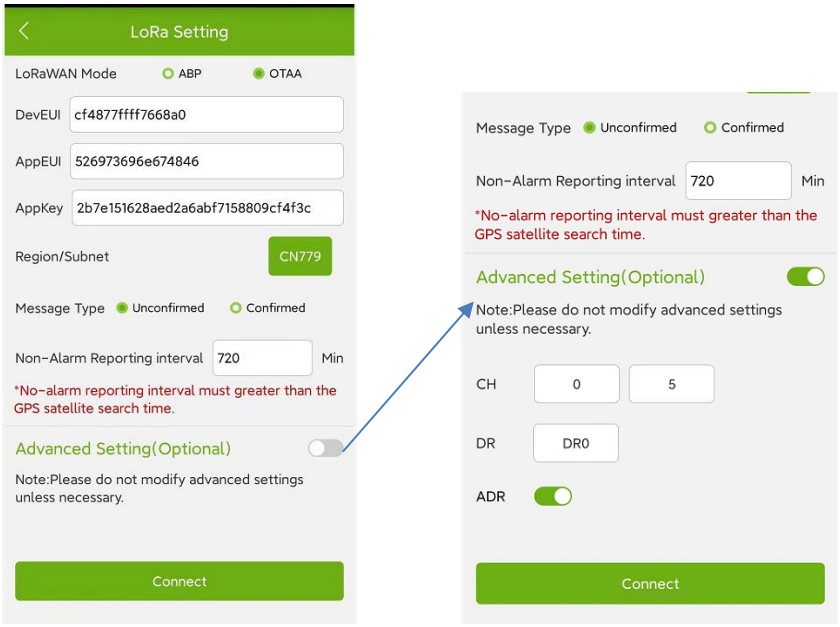




Come into set interface. In the LoRa setting page we can get and configure the LoRaWAN Mode,DevEUI,AppEUI,AppKey,DevAddr,AppSKey,NwkSKey,Region/Subnet,Message Type,Reporting interval.

Please notes the reporting interval in this page is no-alarm mode reporting interval. And it must greater than the GPS satellite search time.

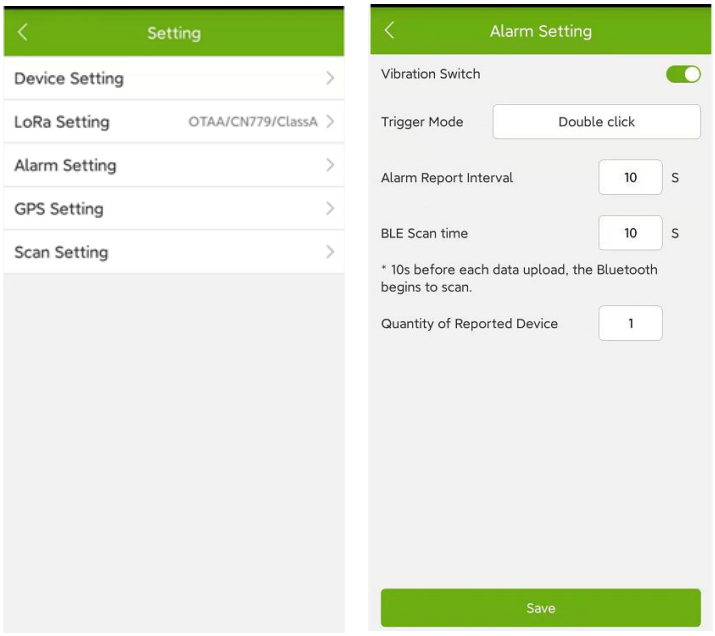
The default non-alarm reporting interval is 720min.The value ranges from 1-14400mins



Click the Advanced Setting (Optional) button, you can set some advanced parameters(CH, DR, ADR).

Noted: *Please do not modify advanced settings unless necessary.*

9.6 Get and Configure Alarm Parameters



Come into setting interface. In the Alarm Setting page we can get and configure some alarm parameter.

Vibration Switch: configure the vibration on or off in alarm mode. The default setting is on.

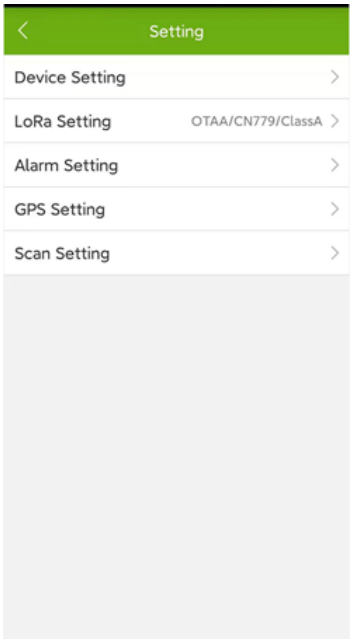
Trigger Mode: configure the alarm button trigger mode single click, double click or long press. The default setting is double click.

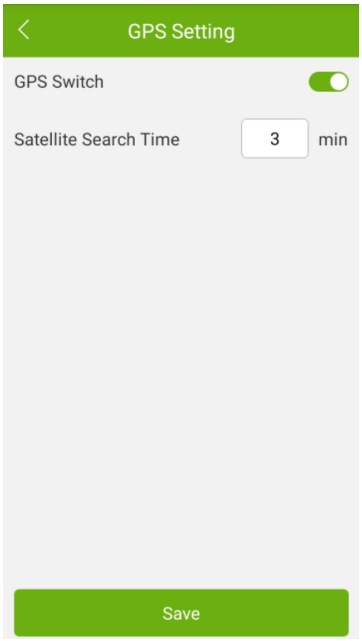
Alarm Report Interval: configure the report interval in alarm mode. The default setting is 10s, the range is 10-600s.

BLE Scan time: The default setting is 10s, 10s before each data upload, the Bluetooth begins

Quantity of reported device: The number of devices reported in a single scan cycle can be configured from 1 to 4, and the default is 1.

9.7 Get and Configure GPS Parameters



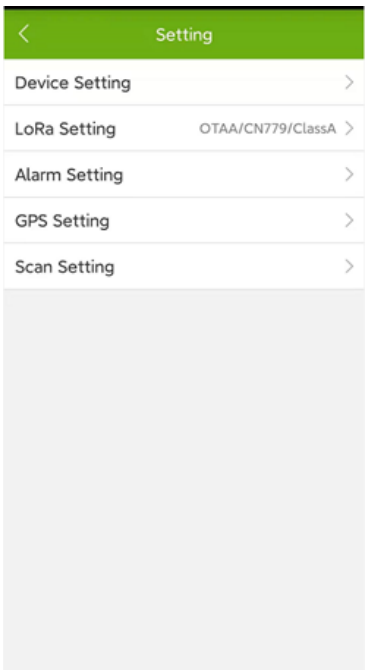


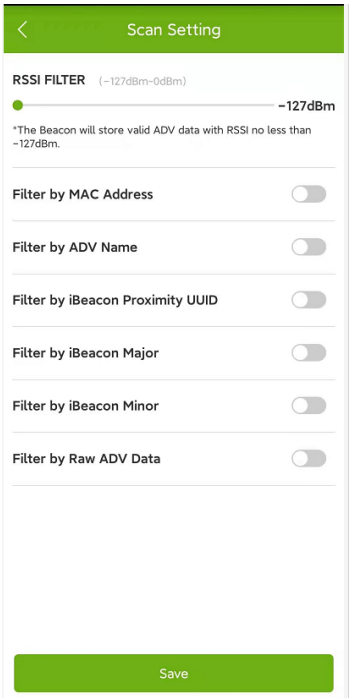
Come into setting interface. In the Alarm Setting page we can get and configure some GPS parameter.

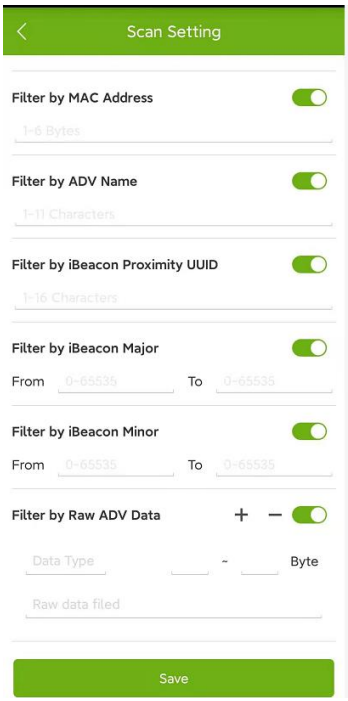
GPS Switch: configure the GPS function on or off. The default setting is on.

Satellite Search Time: Configure the GPS search satellite time, it is also the time of GPS turn on in one no-alarm report interval.
It is recommended to configure GPS search satellite time

9.8 Get and Configure Scan Parameters







Come into setting interface. In the Alarm Setting page we can get and configure some scan parameter.

RSSI FILTER: The default value is -127 dBm, the range of this value is from -127dBm to 0 dBm. For example, if user set this value to -100dBm, the device will store valid ADV data with RSSI from 0 to -100dBm.

Filter by MAC Address: The default status is off. When we click the button on the right, the status will be on and user can edit the Keyword that include part or all of MAC Address. The device will store valid ADV data that meets the filter conditions.

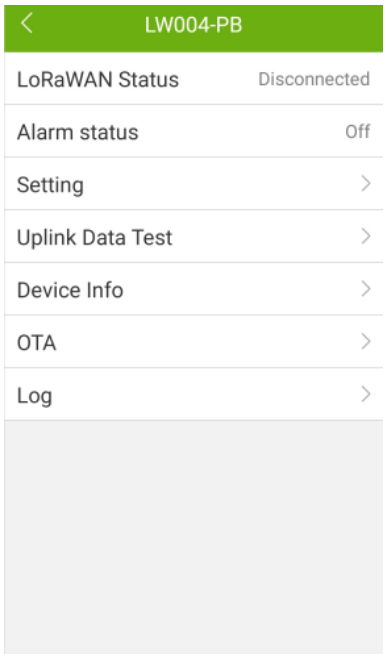
Filter by ADV Name: The default status is off. When we click the button on the right, the status will be on and user can edit the Keyword that include part or all of ADV name. The device will store valid ADV data that meets the filter conditions.

Filter by iBeacon major: The default status is off. When we click the button on the right, the status will be on and user can set the min value and max value of iBeacon Major. Both of these values range from 0-65535, and the max value must be no less on the min value. The device will store valid ADV data whose major value meets the scope requirements.

Filter by iBeacon minor: The default status is off. When we click the button on the right, the status will be on and user can set the min value and max value of iBeacon Minor. Both of these values range from 0-65535, and the max value must be no less on the min value. The device will store valid ADV data whose minor value meets the scope requirements.

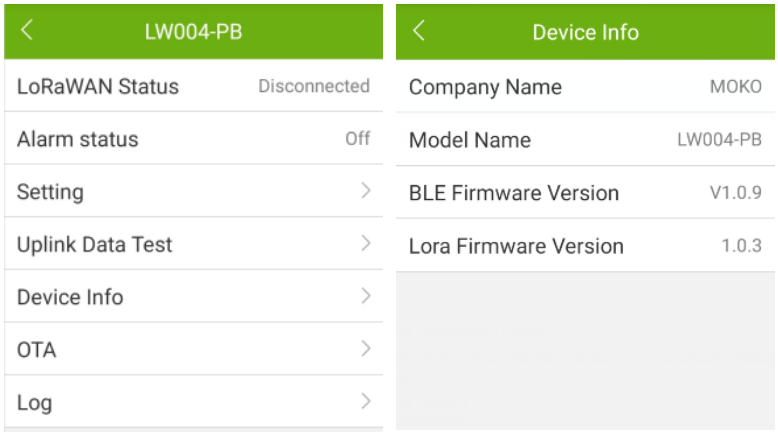
Filter by Raw ADV Data: The default status is off. When we click the button on the right, the status will be on, and it can add five different filter data types in total when click “+”.
Data Type: 1byte, the data type value should meet Bluetooth Generic Access Profile.Data type definitions please refer to https://www.bluetooth.com/specifications/assigned-numbers/generic-access-profile/.
Byte: the byte range under the data type, the max range is 29 bytes.
Raw data field: the length should match with the byte range.

9.9 Uplink Data Test



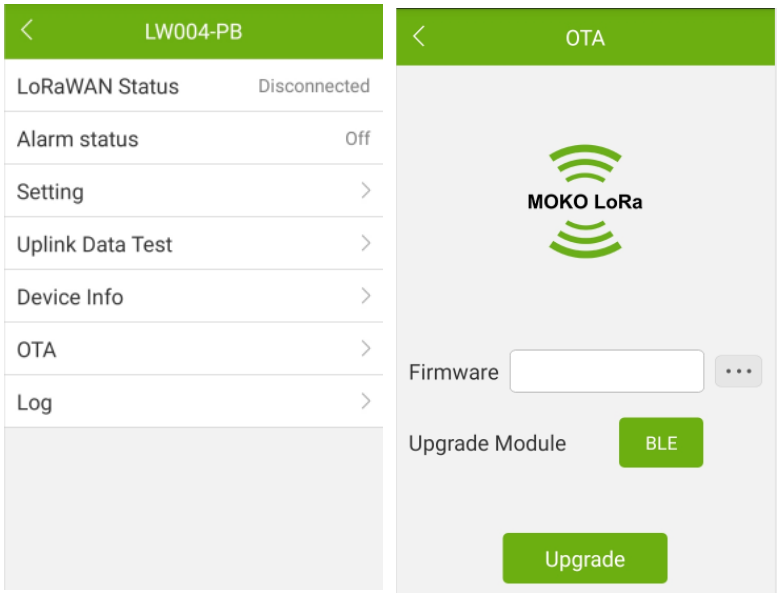
Uplink data test: When LoRaWAN Status on the main page shows connected, but no Data has been transmitted, a real-time message (the default is the current date and time) can be sent to the server through the Uplink Data Test interface of the APP. If the server fails to receive the message, it indicates that the network connection is abnormal.

9.10 Device Info



Device Info: get device information and firmware version

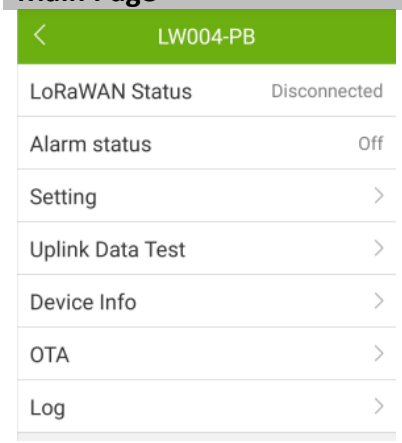
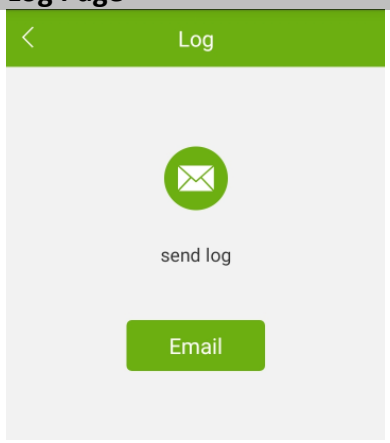
9.11 OTA



OTA: over the air to upgrade the firmware.
It only supports to upgrade the ZIP upgrade firmware file that provide by MOKO.

Upgrade module is BLE chip.

9.11 Log

Main Page	Log Page	Remark
		Through the log page, user can send the last time join request information of the device to our RD engineer by email in case user need help when there is join network issues.

10 Revision History

Version	Description	Editor	Date
1.0	Initial version create	iris	2020-07-08
1.1	Suitable for firmware version V1.0.11	iris	2020-08-24
1.2	Suitable for firmware version V2.2.3 &HW Version V1.0.4	Allen	2021-01-18

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