LW007-PIR

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CONTENT

1 About this Manual

The purpose of this manual is to outline how to use MKLoRa APP for LW007-PIR parameters configuration.

2 MKLoRa APP

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

2.1 Install MKLoRa APP

User can get the APP download link by search "MKLoRa" in your phone APP store: Please allow Bluetooth to be enabled during the installation process. This APP communicates with the device via Bluetooth, and it only supports above android 4.4 and IOS 9.0 system.

Note: After the successful installation of the APP, the APP will request some mobile phone permissions, such as Bluetooth access permissions. Please click "OK", otherwise the APP will not work well.

2.2 Connect to LW007-PIR

After the device is turned on, the device Bluetooth will start broadcasting. Open the MKLoRa APP and choose LW007-PIR on device option interface, then you can search the LW007-PIR device by click the refresh icon. The default broadcast name of the device: LW007-PIR-XXXX(XXXX is the last 4 bit of device MAC address).

The Edit Filter at the top can help user filter the keywords and RSSI. RSSI ranges from -127dBm to 0dBm;
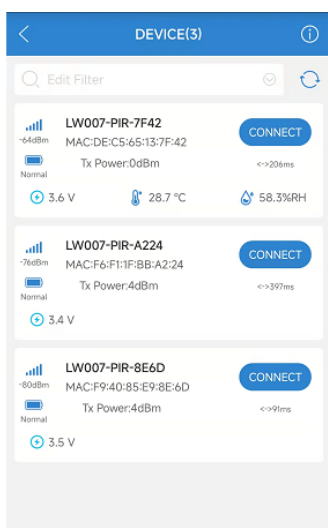
The distance between the phone and the device should be kept within 10m without wall obstruction. Otherwise, the device will not be searched. After searching for the device, click the "CONNECT" to connect the device that you want to configure.

Then you should enter the password, the default login password is "Moko4321".

Note: If a password is not entered within one minute, the login box will disappear, you should click "CONNECT" again.

Note: If there is no action within 3 minutes after login, the system will automatically login out.
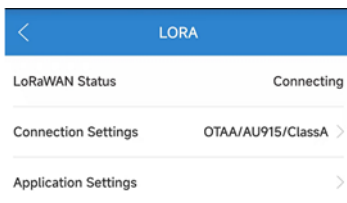
2.3 Configure LW007-PIR Parameters
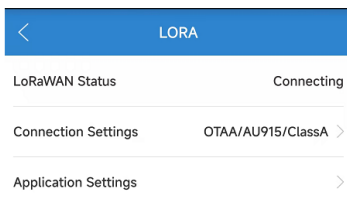
When you log into the device successfully, you will enter the main page. There are four parts of the parameter configuration: LORA, GENERAL, BLUETOOTH and DEVICE.

2.3.1 LORA Parameters

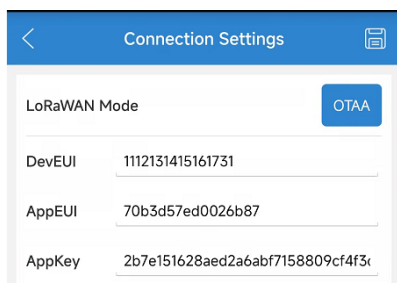In this page, user can configure parameter for LoRa Part:

LoRaWAN Status: Indicates the status of the LoRaWAN network connection.

Connection Settings: Configure LoRaWAN network parameters.

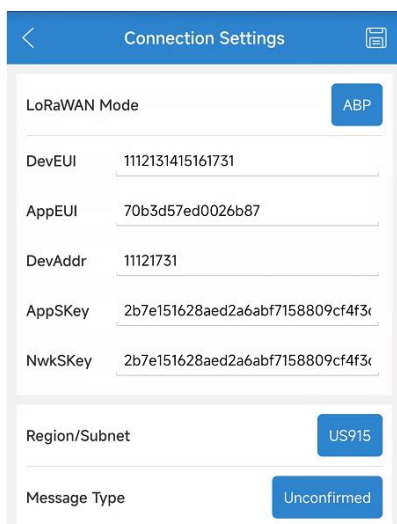**Application Settings:** Configure LoRaWAN application parameters.

2.3.1.1 Connection Settings
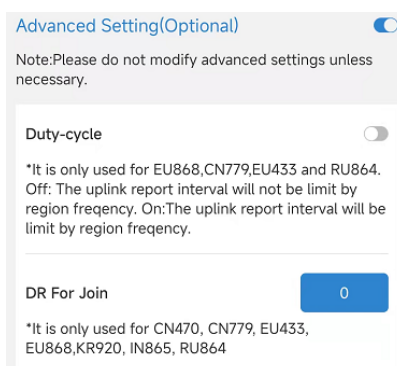
LoRaWAN Mode: LoRaWAN join-in mode selection

DevEUI/AppEUI/AppKey: Network parameters in OTAA mode.

DevEUI/AppEUI/DevAddr/AppKey/NwkSKey: Network parameters in ABP mode.

Region/Subnet: Device frequency band selection, AS923/ AU915 /CN470 /CN779 /EU433 /EU868 /KR920 /IN865 /US915 /RU864 can be set.

Message Type: Uplink payload type, it can be set unconfirmed or confirmed, the default is confirmed.

Advanced Setting: Some advanced parameter settings, if not necessary, it is not recommended to modify.

Duty-Cycle: It is only used for EU868, CN779, EU433 and RU864. The default is off.

DR for join: It is only used for CN470, CN779, EU433, EU868, KR920, IN865, RU864. DR selection for Join Request of OTAA mode. The default is DR0, it ranges from DR0 to DR5.

CH: Channel Setting, Generally, the default is fine.

Uplink Strategy:
Option1: ADR on, ADR mechanism following the standard protocol stack.
Option2: ADR off. The device will choose the DR to send the payload within the set DR range, and will try to ensure that the time taken to send the payload is the same every time.

Max retransmission times: Maximum number of retransmissions when selecting a confirmation frame to transmit an uplink Payload. The default is 3 times. The value ranges from 0 -7 times.

Note: If the data length of the current payload exceeds the transmission capacity of the selected DR, it will automatically make the DR plus one.

Note: Please do not modify advanced settings unless necessary.

2.3.1.2 Application Settings
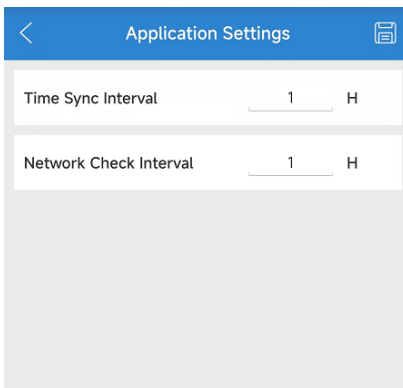
Time Sync Interval: It is used to sync the device time via MAC command. The default is 1, means that the device's time will be synchronized every 1 hour via LoRaWAN MAC commands.

The value ranges from 0 -255H. 0 means disable.

Network Check Interval: The device will periodically check the LoRaWAN network status via MAC command. The default is 1, means that the device will check the network status every 1 hour via LoRaWAN MAC commands.

The value ranges from 0 -255H. 0 means disable.
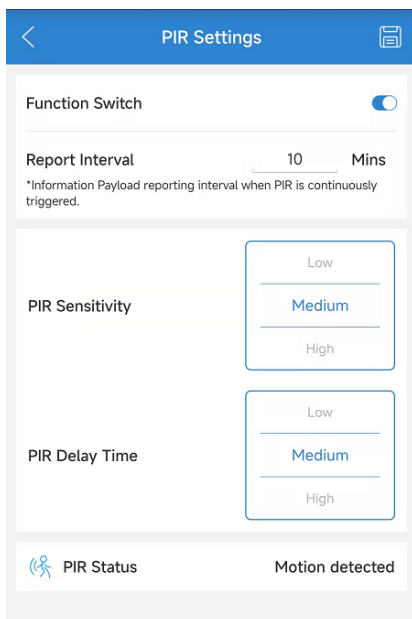
2.3.2 General Settings

In this page, user can configure general parameters:
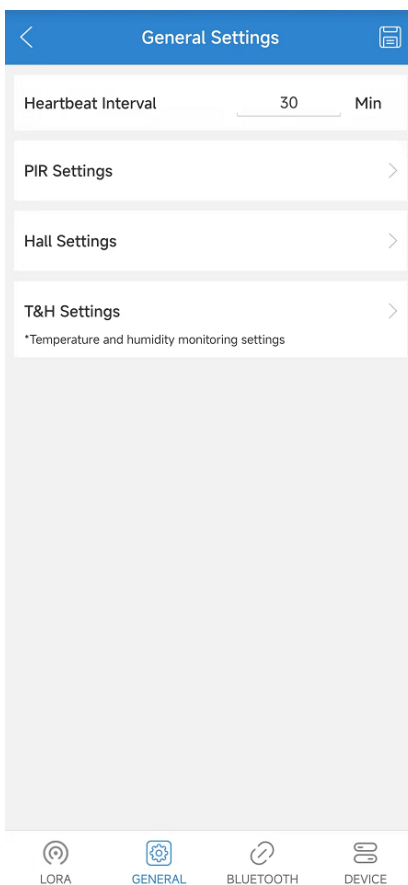
Heartbeat Interval: The report interval of heartbeat payload. The default is 60mins.

The value ranges from 1~14400 mins.

2.3.2.1 PIR Settings

Function Switch: The function switch of PIR detection. The default is ON.

Report Interval: Information Payload reporting interval when PIR is continuously triggered. The default is 10, the unit is minute.
The value ranges from 10 -60 mins.

PIR Sensitivity: Users can adjust the trigger sensitivity according to different scenarios, so as to adjust the monitoring range. The default is Medium.
It can be set as Low or medium or High.

PIR Delay Time: Users can adjust the PIR delay time according to different scenarios, so as to adjust the minimum sample frequency of PIR monitoring. The default is Medium.
It can be set as Low or medium or High.

PIR Status: The current motion/occupancy status of monitored area.
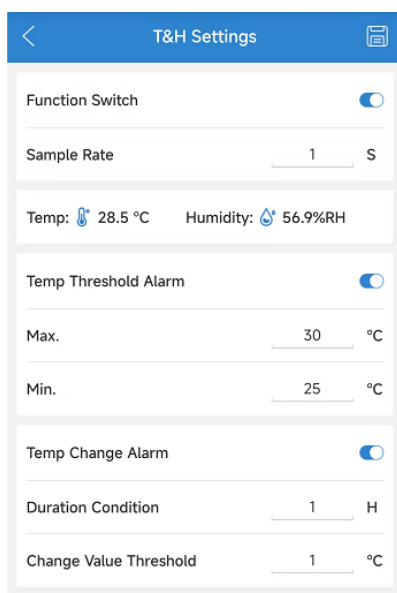
2.3.2.2 Hall Settings
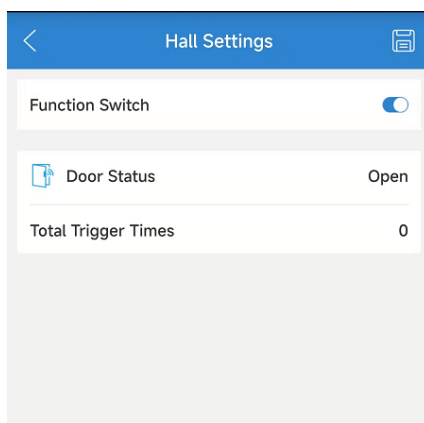
Function Switch: The function switch of door/window status detection. The default is ON.

Door Status: The current door/window status.

Total Trigger Times: Cumulative number of triggers for the door/window status detection function.

Reboot/Reset/Change battery will set the total trigger times to 0.

2.3.2.3 T&H Settings

Function Switch: The function switch of T&H monitoring. The default is ON.

Sample Rate: The sample rate of temperature and humidity data. The default is 1s. The value ranges from 1~60s.

Temp Threshold Alarm: The function switch of temperature threshold alarm function. The default is OFF.
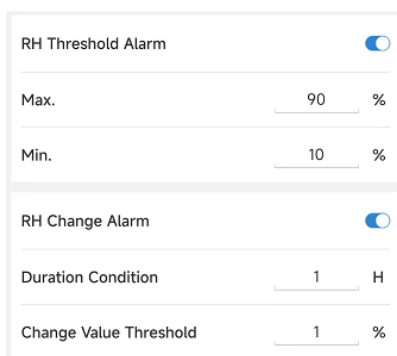   **MAX:** Upper limit value for temperature threshold alarm, the default is 30℃. The value ranges from -30~60℃.
    Min: Lower limit value for temperature threshold alarm, the default is 10℃. The value ranges from -30~60℃.

Temp Change Alarm: The function switch of temperature change alarm function. The default is OFF. If the change in temperature during this duration reaches the set change value threshold, the temperature change alarm is considered to be triggered.
    Duration Condition: The default is H. The value ranges from 1~24 H.
    Change Value Threshold: The default is 1℃, it ranges from 1~20℃.

RH Threshold Alarm: The function switch of humidity threshold alarm function. The default is OFF.
    MAX: Upper limit value for humidity threshold alarm, the default is 90%. The value ranges from 0%~100%.
    Min: Lower limit value for humidity threshold alarm, the default is 10%. The value ranges from 0%~100%.

RH Change Alarm: The function switch of humidity change alarm function. The default is OFF. If the change in humidity during this duration reaches the set change value threshold, the humidity change alarm is considered to be triggered.
    Duration Condition: The default is H. The value ranges from 1~24 H.
    Change Value Threshold: The default is 1%, it ranges from 1%~100%.

2.3.3 Bluetooth Settings
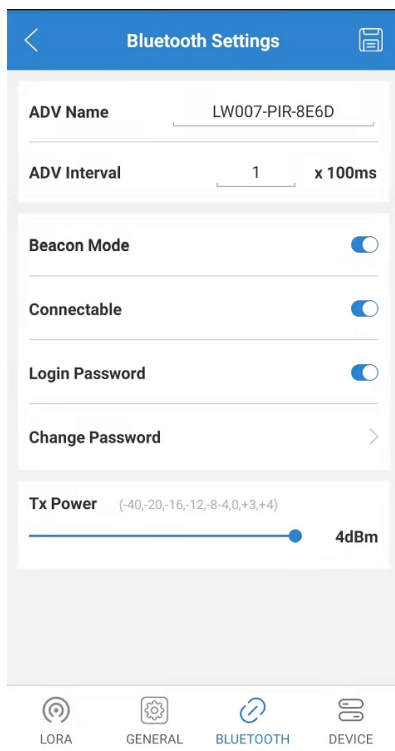
ADV Name: The advertising name of the device, up to 16 characters.

ADV Interval: Bluetooth advertising interval. The default is 1000ms. It ranges from 1-100, the unit is 100ms.

Beacon Mode: The device can be set to beacon mode or configuration mode. The default is ON.

**Connectable:** User can select the connectable state or the unconnectable state. The default is connectable state.
When the device is on unconnectable state, the device only can be connected via Bluetooth in the first three minutes of power on.

Broadcast Timeout: When the device isn't in beacon mode, the duration of each broadcast. The value ranges from 1min - 50 mins. The default is 3 mins.

Change Password: User can change the login password, up to 8 characters.

Tx Power: Bluetooth Tx power. The default value is 0 dBm and Tx Power can be configured as one of the following data：-40dBm, -20dBm, -16dBm, -12dBm, -8dBm, -4dBm, 0dBm, 3dBm, 4dBm.

2.3.4 Device Settings
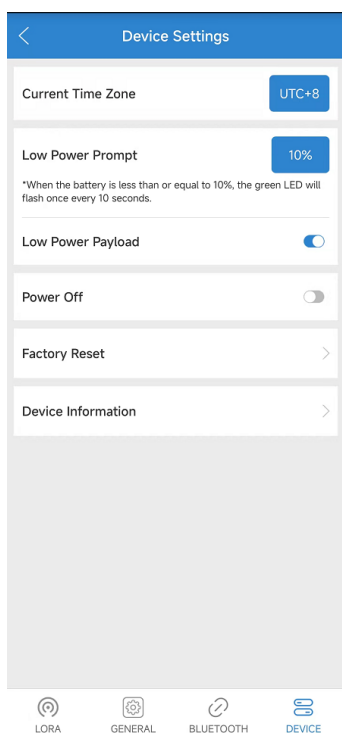
Current Time Zone: Selection of the time zone in which the current device is located.
The value ranges from UTC-12:00 to UTC+14:00, every half hour is a level. The default time zone is UTC+8.
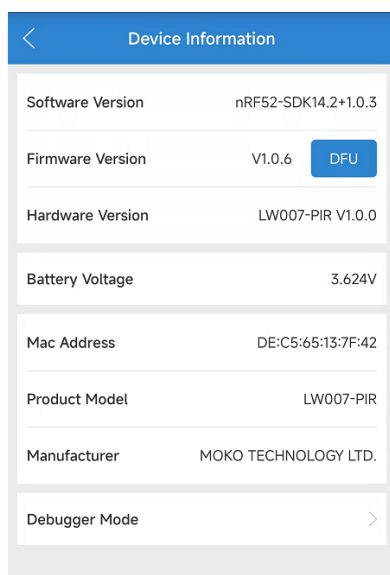
Low Power Prompt: The default is 10%. It can be set 5% or 10%.

Low-power Payload: Whether to report heartbeat payload when the device enters. The default is ON.

Power OFF: User can use the APP to shut down the device.

Factory Reset: User can use the APP to reset the device.

2.3.4.1 Device Information

DFU (Update Firmware): To update the firmware via the DFU should use the upgrade package that MOKO provides with ZIP format.

If you use an android phone, place the ZIP file of firmware upgrade package into the phone folder, select the upgrade package file from the OTA page of the APP, and click to upgrade.

If you use an iPhone, user need to share the upgrade package file with MKLoRa via computers and iTunes tools. Then select the upgrade package file from the OTA page of the APP, and click to upgrade.

2.4 Configuration Examples

This chapter provides some configuration examples depending on some common typical scenarios.

2.4.1 Meeting Room Occupancy Detection

User case: Need to check the current occupancy in the room.

Recommend configuration:

Categories	Parameter	Recommend Value	Description
PIR Settings	Function Switch	ON	
	Report Interval	10 mins	Timely notification of meeting room occupancy
	PIR Sensitivity	Medium	General scenarios, just maintain medium sensitivity
	PIR Delay Time	Medium	General scenarios, just maintain medium level
Hall Settings	Function Switch	ON	In conjunction with PIR detection function
T&H Settings	Function Switch	OFF	Recommended to be turned off to save power

2.4.2 Office Area Monitoring

User case: Monitoring the office area environment and whether the office area is unoccupied.

Recommend configuration:

Categories	Parameter	Recommend Value	Description
PIR Settings	Function Switch	ON	
	Report Interval	30 mins	There is a possibility that it may be occupied for a long time, so the reporting interval is set to 30min for power save
	PIR Sensitivity	Medium	General application scenarios, just maintain medium sensitivity
	PIR Delay Time	High	Avoid frequent reporting of PIR detection status due to frequent office access
Hall Settings	Function Switch	OFF	This function is not required for this scenario
T&H Settings	Function Switch	ON	Simultaneous environmental monitoring possible
	Sample Rate	1s	
	Temp Threshold Alarm	ON	Timely alarm notification of temperature abnormalities (Too high or low)
	RH Threshold Alarm	ON	Timely alarm notification of humidity abnormalities (Too high or low)

2.4.3 Archive/Server Room Monitoring

User case: Monitoring of current space access and ambient temperature and humidity.

Recommend configuration:

Categories	Parameter	Recommend Value	Description
PIR Settings	Function Switch	ON	
	Report Interval	10 mins	Timely notification of meeting room occupancy
	PIR Sensitivity	High	Critical scenario, with high sensitivity requirements
	PIR Delay Time	Low	Reducing the probability of missed PIR detection
Hall Settings	Function Switch	ON	In conjunction with PIR detection function
T&H Settings	Function Switch	ON	Simultaneous environmental monitoring possible
	Sample Rate	1s	
	Temp Threshold Alarm	ON	Timely alarm notification of temperature abnormalities (Too high or low)
	RH Threshold Alarm	ON	Timely alarm notification of humidity abnormalities (Too high or low)

| | Temp Change Alarm | ON | Timely alarm notification of temperature abnormalities (Rapid temperature change) |
| | RH Change Alarm | ON | Timely alarm notification of humidity abnormalities (Rapid humidity change) |

3 Revision History

Version	Description	Editor	Date
1.0	Initial version	Allen	2021-12-20

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