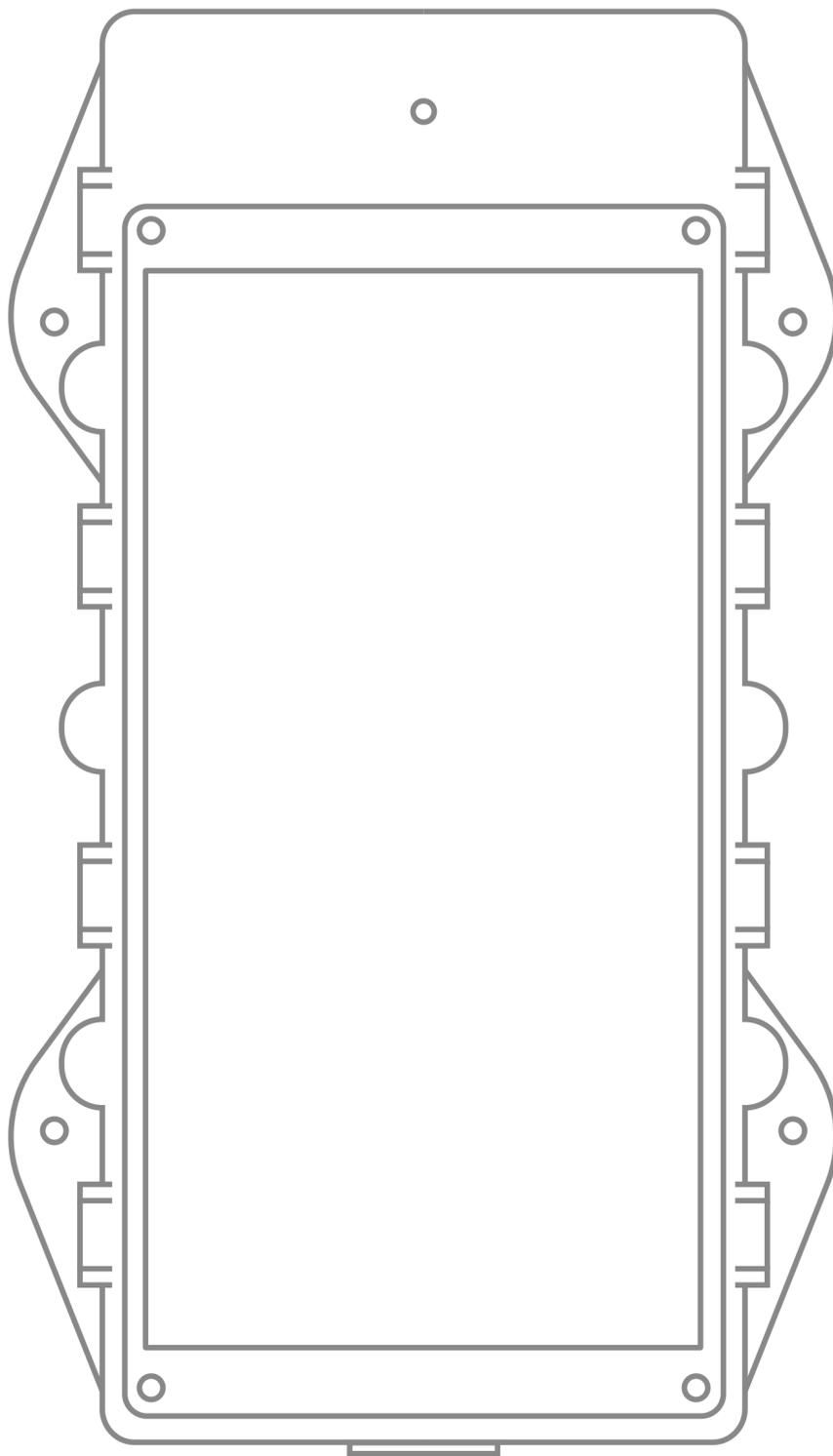


LL303PRO

Solar Powered Asset Tracker

User Manual V1.5



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01/Introduction

1.1. Features



GPS/BDS/WIFI/LBS



Tamper alert



Vibrating alert



Low battery alert



Solar charging

1.2. Specifications

GNSS accuracy	< 10m
Weight	423g (excluding base)
Dimensions (LxWxH)	200x115x25mm (excluding mounting holes)
Operating current	120mA
Battery	Rechargeable Li-Polymer 10000 mAh/ 3.7V
Charging & Data Communication	Magnetic USB cable
Solar Panel	For charging the tracker battery
Waterproof	IP67
Operating Temperature	-20°C ~ +70°C

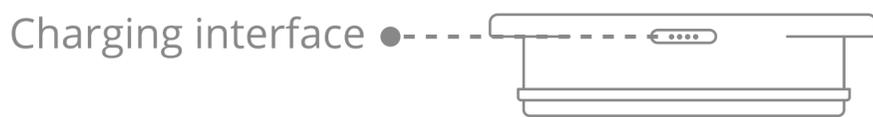
1.3. Packing List

Tracker	Base	Charging cable	Screwdriver	Eject Pin	Self-tapping screw	Flat head screw	Anti-theft screw
1	1	1	1	1	4	4	4

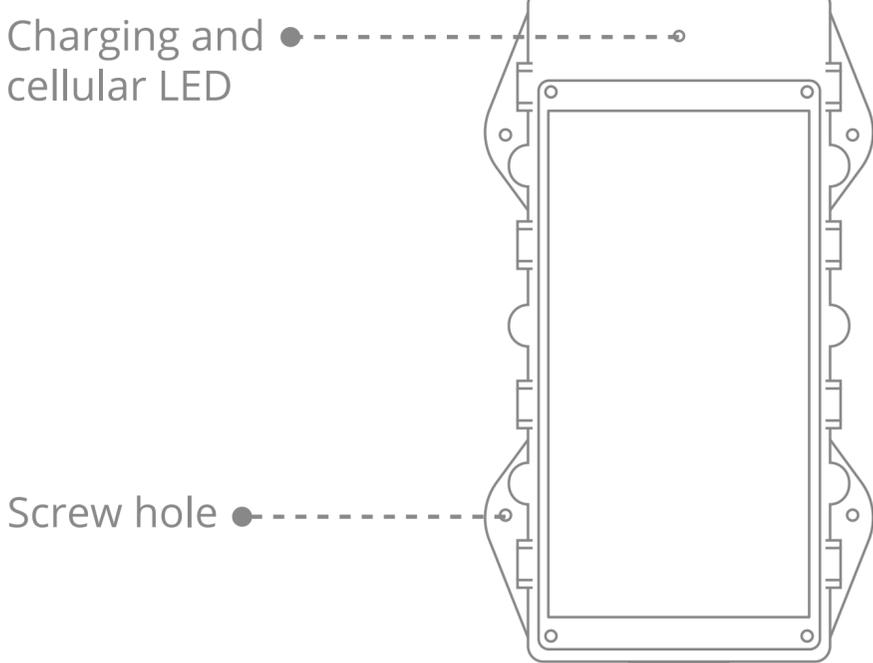
Tips:

Please check the received package to see if all accessories are included. The accessories are subject to actual items. As the product is in constant upgrade, no prior notification will be sent to you for any update in this User Manual.

02/Appearance

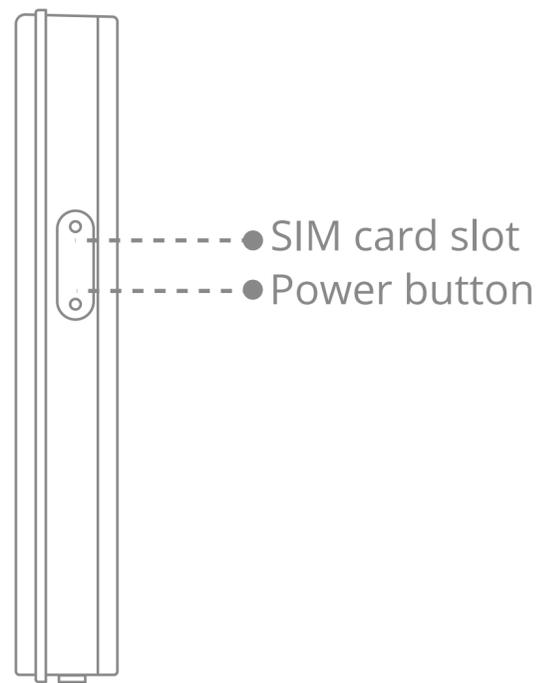


Charging interface ●

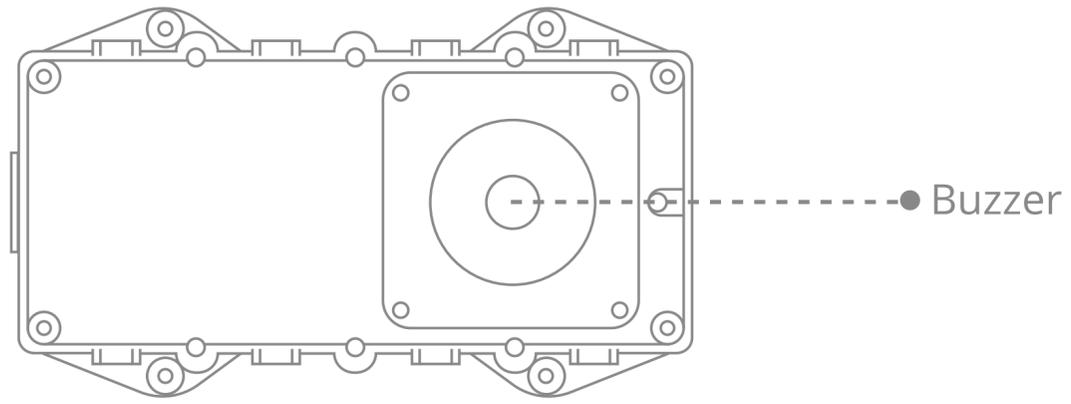


Charging and cellular LED ●

Screw hole ●



● SIM card slot
● Power button



03/LEDs

3.1. Green (Cellular)

Status	Meaning
Fast blink [0.3s-0.3s (on-off)]	Network initializing
Slow blink [0.1s-3s (on-off)]	The device is in a call/online
Solid on	No SIM card or SIM card error
Slow blink [1s-3s (on-off)]	Unable to connect to the platform

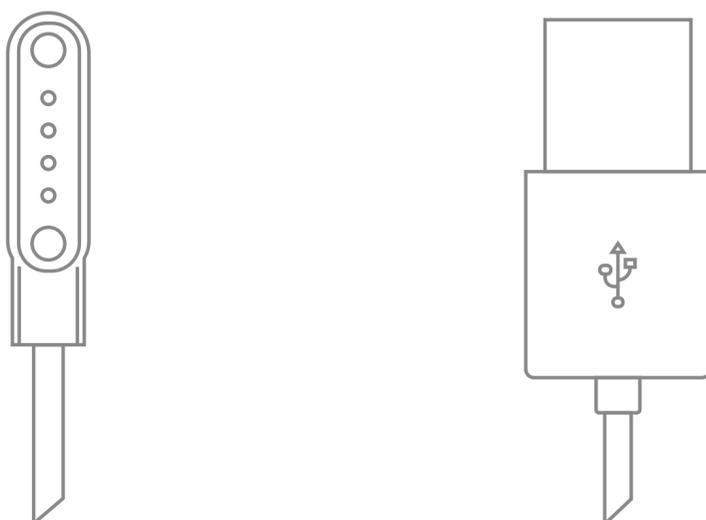
3.2. Red (Power/Work Status)

Status	Meaning
Fast blink [0.3s-0.3s (on-off)]	The battery is low
Slow blink [0.3s-3s (on-off)]	The device works properly/The charging is complete
Solid on	Device charging (via cable)
Slow blink [0.3s-5s (on-off)]	Device charging (via solar power)

04/Use Instruction

4.1. Charging

Connect the device with a 5V/2A charger (which should be purchased separately). The LED is solid on when the device is charging and turns to blink slowly when the charging is complete.

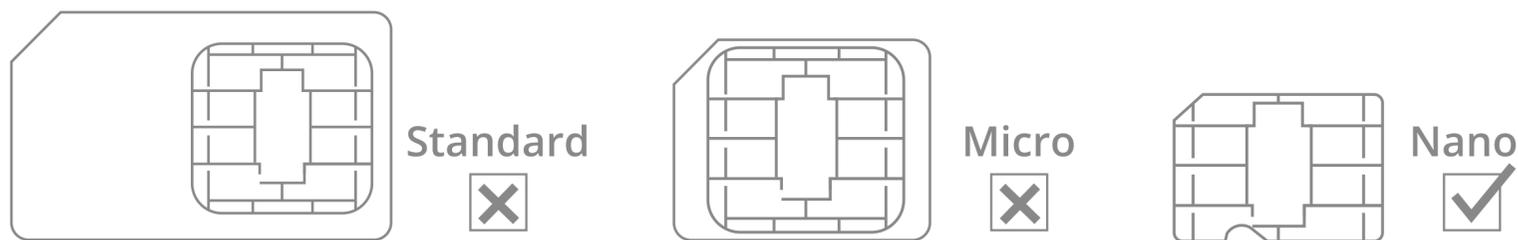


Note: If the battery is exhausted, the charging will take about 6 hours to full. It is normal that the device will heat up slightly during charging.

4.2. SIM Card Attachment

Step 1: Prepare a proper SIM card;

The size of the card is as follows:

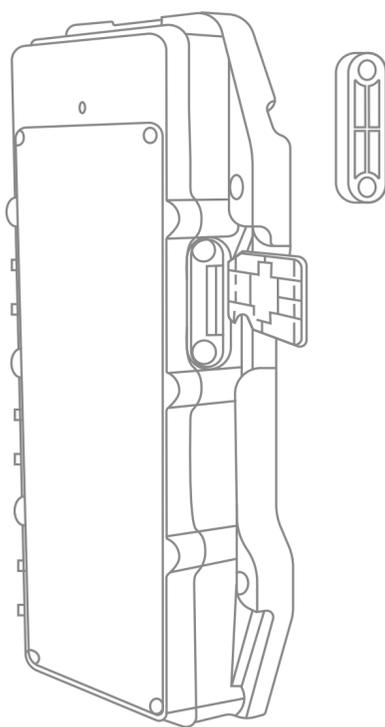


Step 2: Please use the screwdriver in the package or your own electric screwdriver to open the waterproof cover on the side of the device and insert the SIM card in place, as the following figure shows.

(Note: The device must be powered off before removing the SIM; otherwise, the SIM may be burned.)

Step 3: Please use the Eject Pin in the package to switch the power button of the device to the power on position.

Step 4: Please put the waterproof cover back on the device and make sure to tighten the anti-theft screws to prevent water ingress. It is recommended to use an electric screwdriver (electric torque: $1.6 \pm 0.1 \text{ kg f.cm}$, torque: 1.95 mm) for installation. We will not be responsible for any water ingress into the device due to untightened screws. In case the anti-theft screws are lost, there are four spare screws in the package.

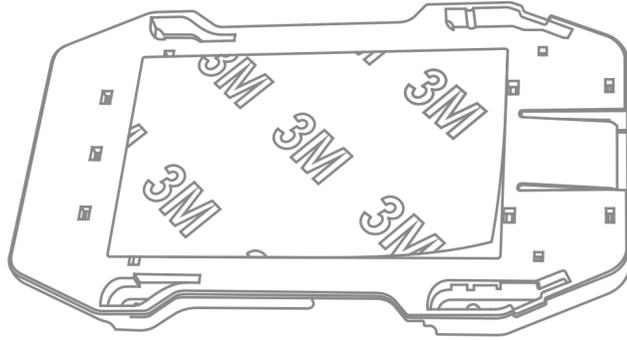


Note: The SIM card must be inserted correctly, has GPRS services activated, and is not in arrears. If the SIM is identified and requires a PIN, please disable the PIN request.

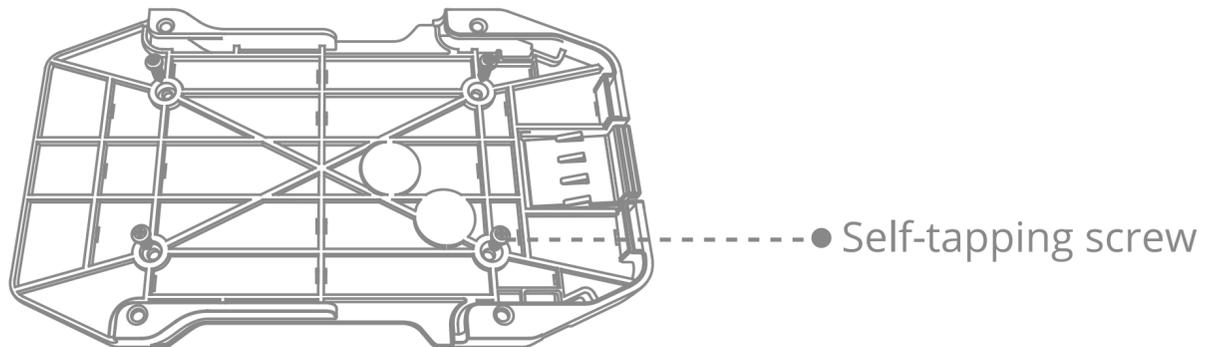
4.3. Installation

Note: Please use the charging cable in the package to fully charge the device before installing the device.

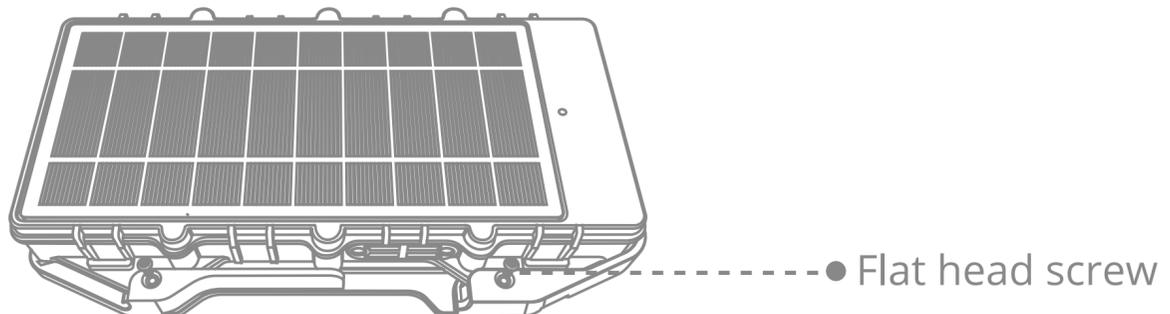
Step 1: Please choose a suitable installation location, which should be open and unobstructed. For solar charging only, it is recommended that the solar panels be mounted in a position with the front side facing upwards horizontally. Then tear off the adhesive tape on the base of the device and stick the base to the installation position.



Step 2: Use four self-tapping screws to further secure the base to the installation location.



Step 3: Slide the device onto the base to secure it, then secure it further with four flat head screws.



4.4. Work Modes

- **Mode 1: Timing mode**

In this mode, the device always has its network services enabled and will upload location data at a fixed interval, which can be configured via the location service platform or mobile app specified by your dealer.

- **Mode 2: Intelligent mode (default)**

In this mode, the device can automatically recognize current location conditions and activity status of the vehicle on which it is installed and intelligently choose a positioning system and an upload interval.

- **Mode 3: Power-saving mode**

The device will wake up at a certain configured interval to upload location data. After each upload is complete, the device will enter deep sleep and will not execute any remote query or set actions. Alarm was triggered! Device will automatically switch to Intelligent mode for a few minutes.

4.5. Alert Functions

- **Tamper alert**

The device will upload a tamper alert if it is forcibly removed.

- **Vibrating alert**

If the device detects vibration during mode 2 operation, it will upload a vibration alarm.

- **Low battery alert**

The device will upload a low battery alert if it detects its battery strength to be lower than 20% .

4.6. Bluetooth Sensor

LL303 can be used together with Bluetooth sensors, and the MAC of the Bluetooth sensor needs to be set in LL303. MAC of Bluetooth sensors can be bound to devices through commands or platforms. LL303 can support up to 10 Bluetooth sensors.

Method 1: Use the TSP platform to input the MAC of the Bluetooth sensor for quick device configuration.

Method 2: Configure devices using command. (Please refer to the commands list for specific commands.)

Step 1: Switch on the scan Bluetooth sensor function in working mode.

Eg: MODE,1,60,1,0,0,1#

Bluetooth switch on

Step 2: Add MAC for Bluetooth sensors that require data.

Eg: BTMAC,ADD,B4:A8:28:37:05:E5,,,,,,,,#

MAC of Bluetooth sensor

Step 3: Set the frequency of required data upload.

Eg: TEMPTIMER,5#

Temperature and humidity data upload frequency

4.7. RFID

LL303 supports RFID broadcasting function and must be used in conjunction with a dedicated scanner.

4.8 Device Configuration

Method 1:

Send commands to the device SIM card number by SMS, UART or online command, please refer details of the commands in commands list section.

Method 2:

1. Download and install the "IoT Lab" app by the QR code, Google Play Store or App Store.



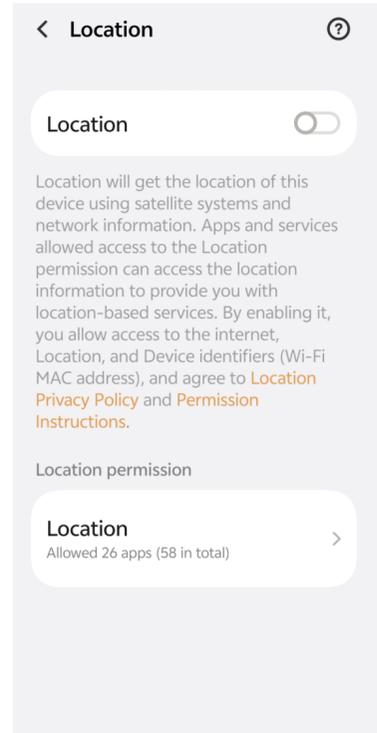
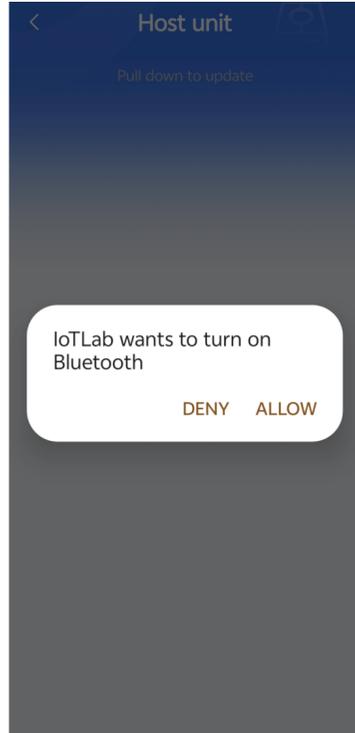
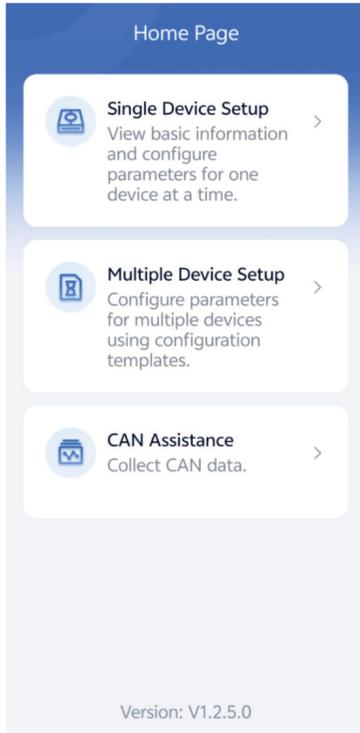
Android



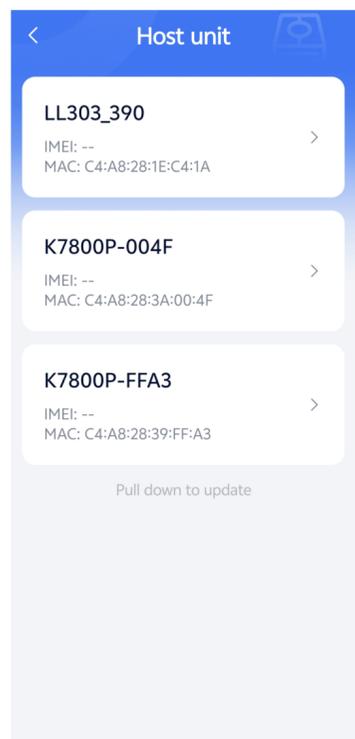
Apple



2. On the IoTLab home page, click the "Single Device Setup" option. Please ensure that your phone's Bluetooth and Location functions are turned on.

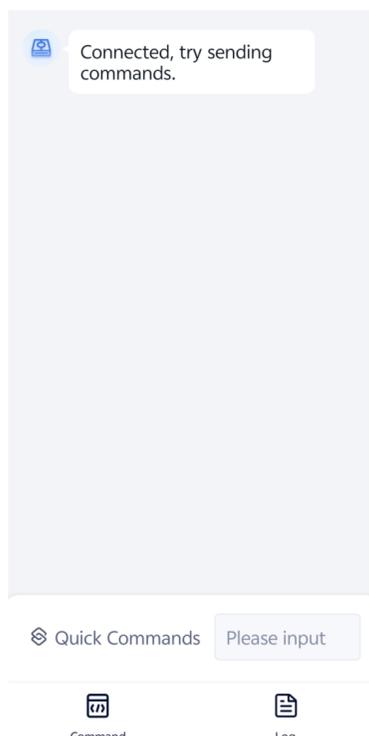


3. The application automatically starts Bluetooth scanning. Wait for a while, and the available device list will be displayed on the interface.



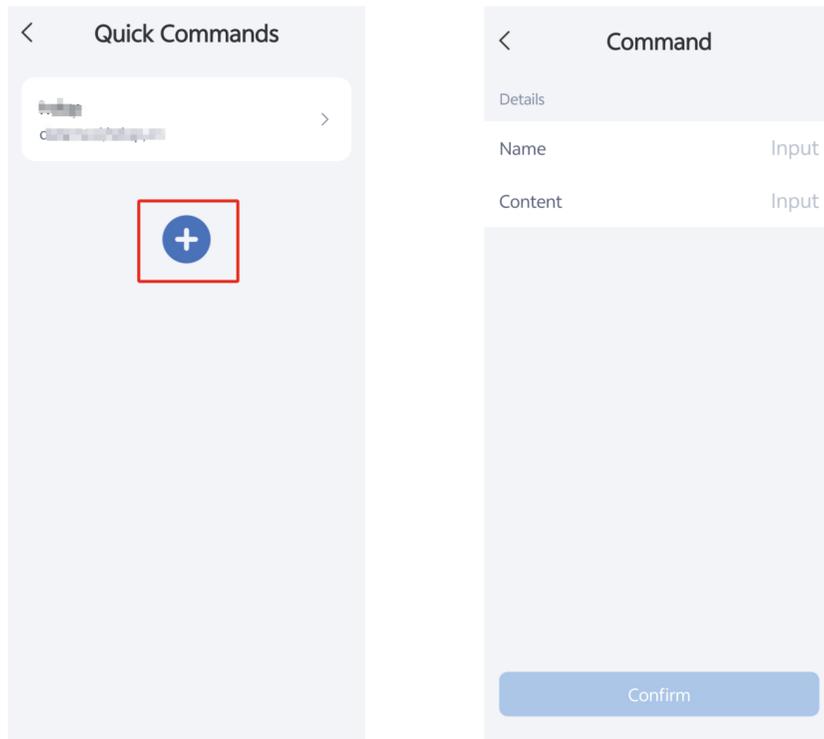
4. Power on the device and then short press the power button for 3 times the device name will automatically show on Connect page, tap on it to connect.

5. After the device is connected successfully, you can view the basic data of the device, click "Command" option at the bottom can enter the command setting page. Enter the command you want to send in the input box, and click Send to issue the command.

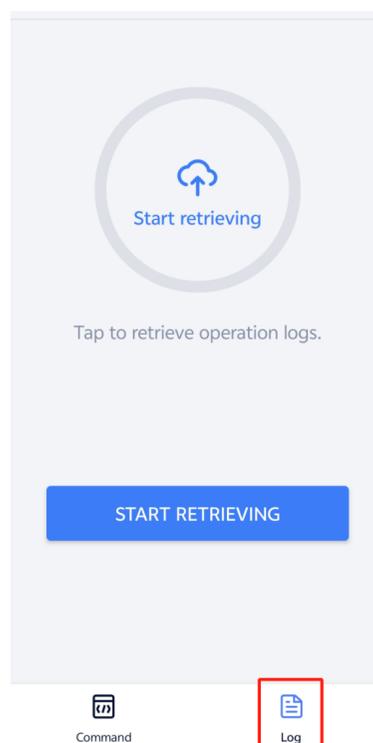


6. If you want to edit common commands for quick sending, click the "Quick Commands" option, the "Edit" button, and then click the plus sign in the pop-up window. Enter the command name and content, and then click "Confirm" to add the frequently used command as a quick command for convenient quick sending next time.

Tips: The set quick commands can be reused during batch configuration.



7. Click "Log" option to retrieve operation logs.



05/Precautions About Battery

Replacement of a battery with an incorrect type that can defeat a safeguard (for example, in the case of some lithium battery types); disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion; leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas; and a battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.

06/Troubleshooting

When a problem arises, you can troubleshoot it by the following solution. If the problem persists, please don't hesitate to contact your dealer or service provider.

Common Issues	Possible Causes	Solutions
Poor signal	The device is used in an area where radio waves cannot reach, such as near high-rise buildings or in a basement.	Try it in a place where satellite signals can be well received.
Power-on failure	The battery is exhausted.	Charge the device.
Failed to access the network	The SIM card may be attached improperly.	Check the SIM.
	The metal side of the SIM card is stained.	Clean it with an eraser.
	The SIM is invalid.	Please contact your network service provider.
	The device is out of GSM service areas.	Try it in a service area.
	The signal is extremely weak.	Try it in an area with strong signals.
Failed to query a location	The SIM is not activated with the GPRS service.	Please contact your network service provider and activate the GPRS service.
	The device keeps replying with "No data found, please try again".	Please contact your dealer.

07/FCC warning

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two

conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

The product specifications and information in this document are for reference only and no prior notice will be given if any change is made. Unless otherwise stated, the content of this document is not a guarantee in any form.

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