

# Bluetooth Operating Instructions

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## About Xiaoxiang App

Xiaoxiang app is an app specially developed for lithium battery . It is mainly used to read the voltage, charging and discharging current, protection status and parameter setting function of lithium battery protection board, so that users can clearly understand the health status of lithium battery and ensure the safety of lithium battery. By adding the functions of dashboard, GPS test and power display, users can better understand the driving status.

## Chapter 1 About Bluetooth Battery Management System

### 1.1 Android Installation

- Scan QR code to download the APP:



### 1.2 IOS Installation

- Apple Store Search: xiaoxiangdiandong (Download APP)



## Chapter 2 Operating of Xiaoxiang electric App

### 2.1 APP Operating environment

Xiaoxiang electric app can be installed on Android version 4.3 or above & Apple system, and can be used on Bluetooth 4.0 devices. It can only be run after obtaining the permission of Bluetooth and GPS.

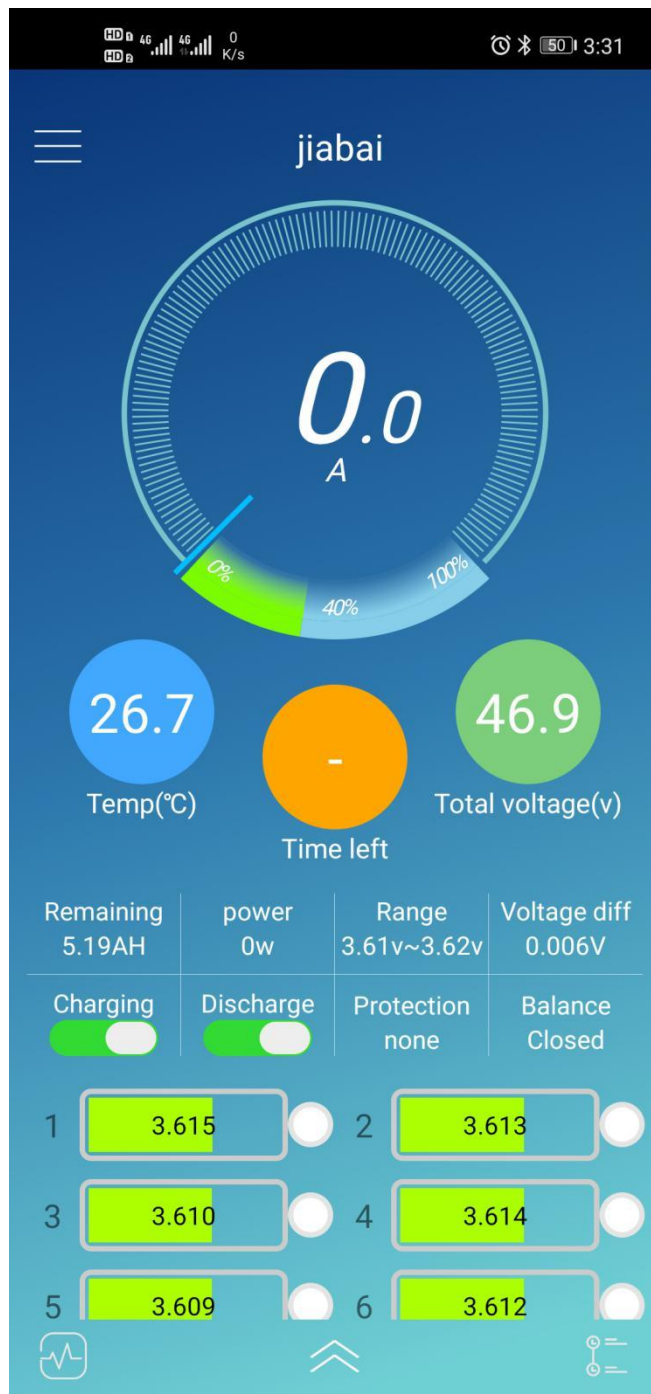
### 2.2 Bluetooth connectivity

In the connection interface, scan the surrounding Bluetooth 4.0 devices, click the connection device, and app will automatically identify whether the device supports the device. If it supports, it will enter the instrument board table interface. If it does, it will prompt the user that the device is not supported and disconnect.



### 2.3 Battery status meter

1. Display the percentage of battery power
2. Display the battery usable current
3. Displays the total battery voltage
4. Display battery voltage range of each series



## 2.4 Battery basic information reading

1. Read the basic information of the battery, display the current battery temperature, and the number of battery cycles.

The screenshot shows a mobile application interface with a blue header bar containing a menu icon and the text 'jiabai'. Below the header, there is a section titled 'Basic Information' with a sub-header 'battery vo'. The main content is a table listing various battery parameters and their values.

Basic Information		battery vo
Total voltage		53.28V
Current		0.00A
Serial number		13s
Average voltage		4.10V
Charging switch		on
Discharge switch		on
Temperature number		1
Temp-1		26.0
Date of manufacture		2019-11-29
Cycles		10times
Nominal capacity		13.00AH
Remaining capacity		12.08AH
Percentage capacity		93%

2. Read the battery protection information, so that users can better understand the current power failure reasons, so as to make timely response measures

Basic Information	battery vo
Cell undervoltage	no
Pack overvoltage	no
Pack undervoltage	no
Charging over-temperature	no
Charging low-temperature	no
Discharge over-temperature	no
Discharge low-temperature	no
Charging over-current	no
Discharge over-current	no
Short circuit	no
IC front-end error	no
Locking	no
Charge timeout Close	no

## 2.5 Cell voltage display

1. Display the voltage of each series of batteries in real time, so that users can quickly monitor the status of each string of batteries

## 2. Display equilibrium status

### 2.6 Battery pack protection information

Record the protection information of the battery pack, so that the maintenance personnel can locate the problem more quickly

### 2.7 Display of lithium battery protection parameters

Users can view all parameters on the protection board, so as to clearly understand the protection action of the battery and the opening conditions of the release action



The screenshot shows the 'jiabai' mobile application interface with the 'Protection of information' section selected. The title 'jiabai' is at the top. Below it, a table lists various protection parameters and their corresponding counts.

Protection of information	
Short circuit times	0
Charging over-current times	0
Discharge over-current times	0
Cell overvoltage times	0
Cell undervoltage times	0
Charging over-temperature times	0
Charging low-temperature times	0
Discharge over-temperature times	0
Discharge low-temperature times	0
Pack overvoltage times	0
Pack undervoltage times	0

The screenshot shows the 'jiabai' application interface on a mobile device. The status bar at the top indicates 4G connectivity, signal strength, Wi-Fi, Bluetooth, and a battery level of 87% at 10:36. The app header is blue with a hamburger menu icon and the text 'jiabai'. Below the header is a list of battery protection parameters, each with a horizontal line separator.

Overvoltage	4.25V
Overvoltage release	4.15V
Overvoltage release delay	2.0S
Undervoltage	2.8V
Undervoltage release	3.0V
Undervoltage release delay	2S
Pack overvoltage	55.25V
Pack overvoltage release	53.95V
Pack overvoltage release delay	2.0S
Pack Undervoltage	36.4V
Pack Undervoltage release	39.0V
Pack Undervoltage release delay	2S
Charging over temperature	75.0°C
Charging over	55.0°C

## 2.8 Parameter setting of lithium battery protection

According to the state of the cell and the characteristics of the electric equipment, the user can adjust the parameters to make the protection board, battery and electric equipment work more coordinately and reach the optimal working state



4G 87% 10:36

jiabai

POLYMER NORMAL    POLYMER LIGHT

LIFEPO4 NORMAL    LIFEPO4 LIGHT

Base Params >

Battery series    13 s

Nominal capacity    13.0 Ah (?)

Galvanometer resistance    0.2 mR (?)

protection params >

Overvoltage    4.25 V (?)

Overvoltage release    4.15 V (?)

Overvoltage release delay    2.0 s (?)

Undervoltage    2.8 V (?)

Undervoltage release    3.0 V (?)

Undervoltage release delay    2 s (?)

Pack overvoltage    55.25 V (?)

Pack overvoltage release    53.95 V (?)

Pack overvoltage release delay    2.0 s (?)