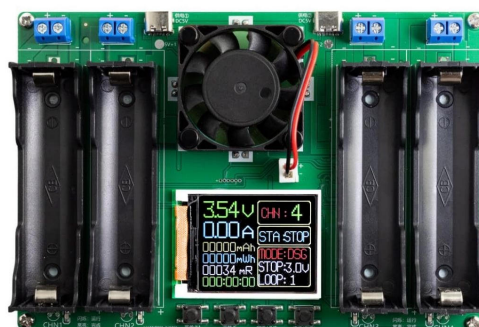


18650-4CHN



中文-Chinese

英文-English

Language switching

- ① Press and hold the "菜单/M" key to power on, release the key after the screen is lit, and power off after 10 seconds
- ② Power on and start again to complete the switch.



Technical parameter

Basic parameters

01

Power supply: DC5V (all self-contained)

Batteries for use: Batteries that meet the stop discharge voltage of 2.5~3.5V and 4.2V charging are suitable

Power Supply Interface: Dual Type-C

System language: Chinese, English

Test Quantity: 4-way charge and release measurement

Internal resistance measurement: support, use DC two-line method to test internal resistance

Charging function: Support, full of automatic cut-off charging, not suitable for lithium iron phosphate battery charging.

Discharge function: support, stop automatically when condition is reached

Automatic charging: Yes, Li-Ferrite Phosphate batteries are not suitable for charging when the battery is fully charged at the end of the automatic mode.

Loop filling: support, 1-9 cycles adjustable

Status Tip: Support

Stop discharge voltage: 2.5V, 2.6V, 2.7V, 2.8V, 2.9V, 3.0V, 3.1V, 3.2V,

11 adjustable 3.3V, 3.4V, 3.5V

Discharge current: max. 1A current, not adjustable, does not support self-improvement

Cooling mode: Active cooling

High temperature protection: support

Charging Voltage: Dedicated battery charging chip control, max. 1A charging, full voltage 4.2V

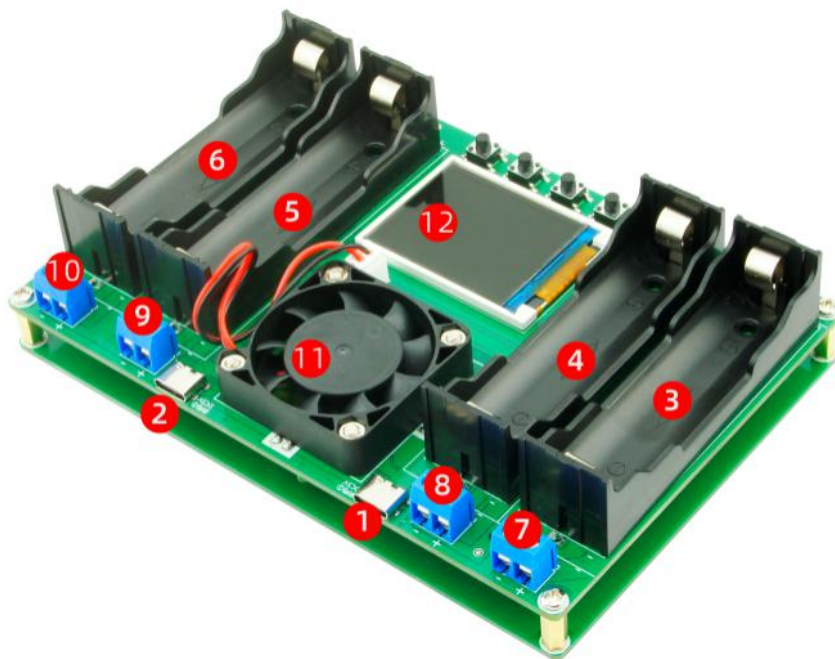
Power off save: save settings parameters only, do not save measurement data

Product weight: 200g (net weight) 260g (including packaging)

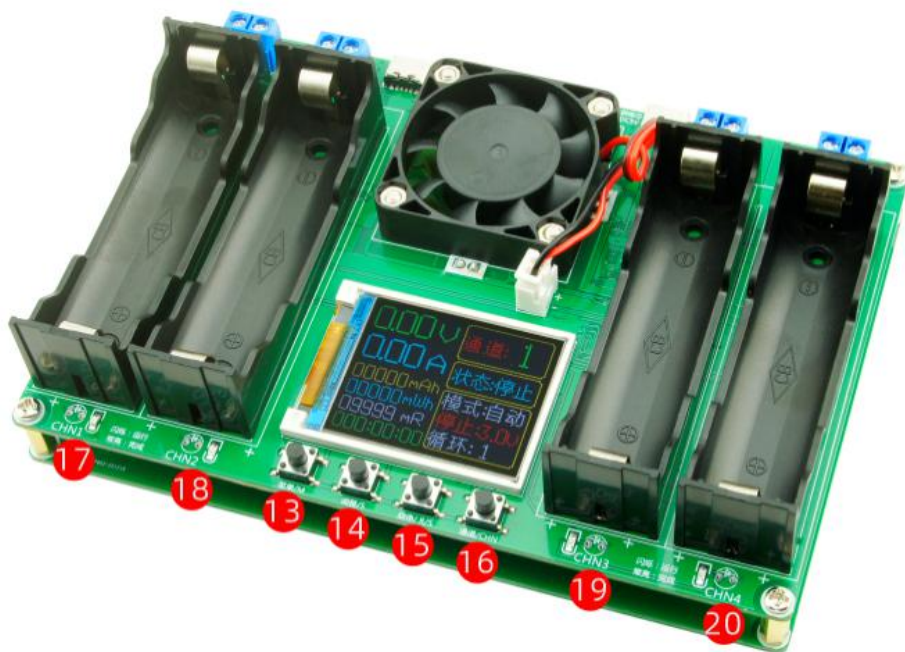
Product size: 150 × 103 × 36mm

Packaging size: 182 × 112 × 50mm

Hardware introduction



1. Type-C5V power supply interface
2. Type-C5V power supply interface
3. Channel 1 18650 battery holder
4. Channel 2 18650 battery holder
5. Channel 3 18650 battery holder
6. Channel 4 18650 battery holder
7. 1 Channel 1 Terminals
8. 2 Channel 2 Terminals
9. 1 Channel 3 Terminals
10. 2 Channel 4 Terminals
11. Cooling fan
12. Display



13. 菜单/M key 14. 调整/S key
 14. 启停/R/S key 16. 通道/CHN key
 17. CHN1 channel status indicator 18. CHN2 channel status indicator
 19. CHN3 Channel Status Indicator 20. CHN1 Channel Status Indicator

Interface introduction



1. Real-time voltage
 2. Real-time current

3. Cumulative capacity
4. Cumulative energy
5. Battery internal resistance
6. cumulative running time-hhh:mm:ss (hours:minutes:seconds)
7. Number of cycles
8. low voltage stop discharge
9. working mode menu
10. Status Indication
11. Channel Indication

Comparison of internal resistance test accuracy

The product uses the DC 2-wire method to test the internal resistance of the battery. When the battery is fully charged, the numerical accuracy is high. The test results are used for reference and comparison between the batteries tested in the same batch. For those with high internal resistance accuracy requirements, please use a professional internal resistance instrument using the 4-wire AC method to test.

Test principle

The DC impedance is that according to the physical formula $R=V/I$, the test equipment forces the battery to pass a large constant DC current (usually a large current of 10A-80A is used at present) in a short time (usually 2-3 seconds), measures the voltage at both ends of the battery at this time, and calculates the current internal resistance of the battery according to the formula.

Measure voltage(V)	This item (milliohm)	Other items (milliohm)
3.7	18	16
4.0	62	62
4.18	58	70
4.16	22	17
3.77	68	57
3.47	95	80
3.99	80	77
3.69	79	69
4.05	90	104
3.85	96	119

Capacity test accuracy reference

The test results of five LGABB4 18650 batteries (with a nominal capacity of 2600mAh) in AUTO mode are as follows

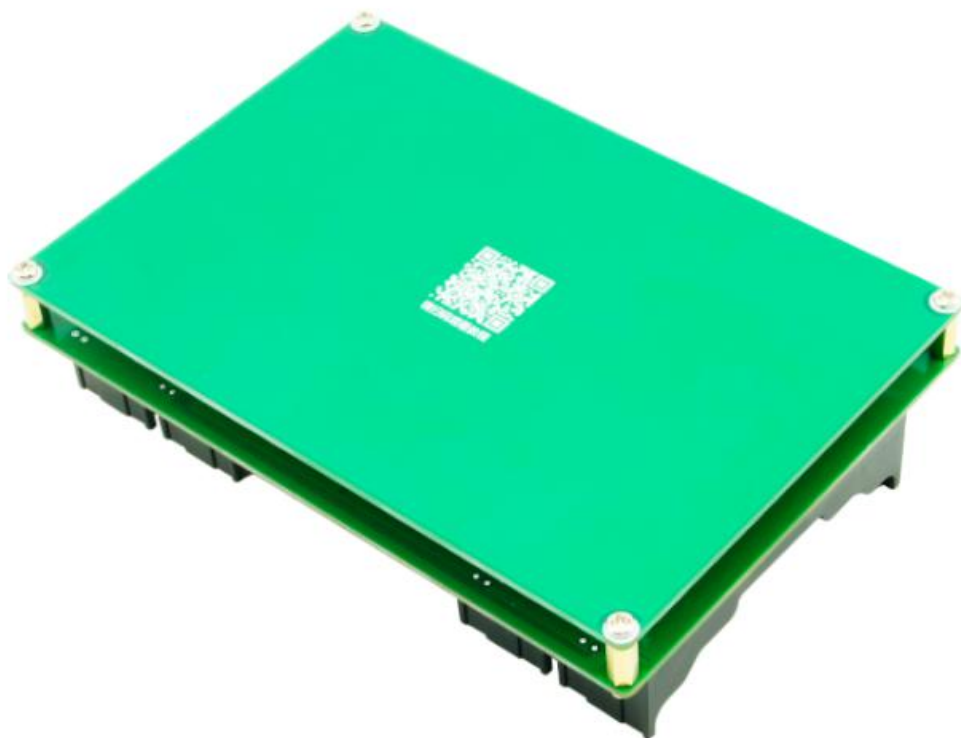
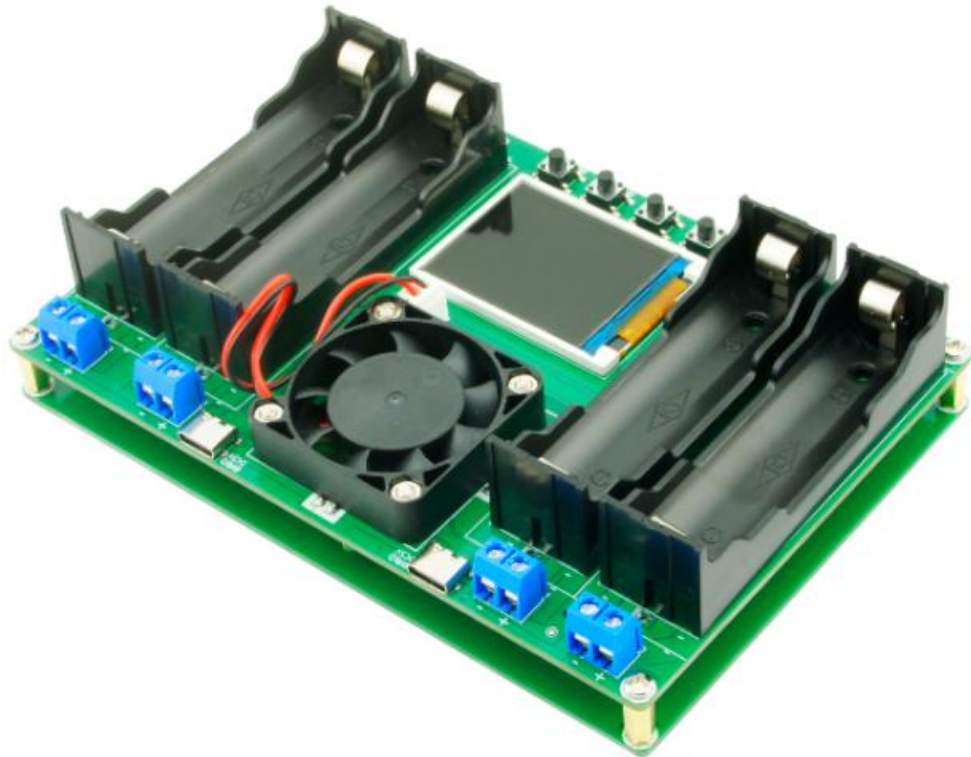
Battery serial number	Battery internal resistance (miohm)	Battery capacity (mAh)
1	61	2650



2	56	2602
3	50	2609
4	63	2616
5	53	2643

Product show





How to use

1. Measuring internal resistance

The product uses the DC 2-wire method to test the internal resistance of the battery. When the battery is fully charged, the numerical accuracy is high. The test results are used for

reference and comparison between the batteries tested in the same batch. For those with high internal resistance accuracy requirements, please use a professional internal resistance instrument using the 4-wire method to test.

Test method

Wait a few seconds after installing the battery, read the battery data, and the battery voltage and internal resistance parameters will be displayed. There will be a delay in data loading during battery loading and unloading, and the data will be checked after it is stable.



09999 mR

The circuit is disconnected when no battery is installed, and the resistance value is infinite

00031 mR

The circuit is formed after installing the battery, with an internal resistance of 31mOhm

Reminder

- *High accuracy of internal resistance measurement when the battery is fully charged
- *When the voltage is insufficient, the internal resistance display may have an excessive value.
Please reinstall the battery for measurement after the battery is fully charged
- *The internal resistance of single battery is different, and the actual measurement results shall prevail.
- *There is line resistance when using the extension wire to test the battery, and the error will increase.

2. Setup method

2.1. Click the "菜单/M" key to switch menu options



MODE: AUTO
STOP: 3.0V
LOOP: 1



MODE: AUTO
STOP: 3.0V
LOOP: 1



MODE: AUTO
STOP: 3.0V
LOOP: 1

2.2, Mode Menu: Click the "调整/S" button to switch Mode



MODE: CHG



MODE: AUTO



MODE: DSG

2.3. Stop discharge voltage: click "调整/S" to switch the stop discharge voltage, and the adjustment range is 2.5V~3.5V,
The stop voltage is invalid for "charging mode".



STOP: 3.0V



STOP: 3.1V



STOP: 3.2V



STOP: 3.3V



STOP: 3.4V



STOP: 3.5V



STOP: 2.5V



STOP: 2.6V



STOP: 2.7V



STOP: 2.8V



STOP: 2.9V

2.4. Number of cycles: click "调整/S" to set the number of cycles. The cycle is only valid in "Auto Mode"

Invalid number of cycles in "charge mode" and "discharge mode"



LOOP: 1



LOOP: 2



LOOP: 3



LOOP: 4



LOOP: 5



LOOP: 6



LOOP: 7



LOOP: 8



LOOP: 9

3. Run/Stop

Click the "启停/R/S" button to Run or Stop the program

The program is not running
"STA:STOP"

A digital display with a black background and yellow border, showing the text "STA:STOP" in blue, pixelated capital letters.

Run charging procedure
"STA:CHG"

A digital display with a black background and yellow border, showing the text "STA:CHG" in blue, pixelated capital letters.

Run discharge procedure
"STA:DSG"

A digital display with a black background and yellow border, showing the text "STA:DSG" in blue, pixelated capital letters.

End of program operation
"STA:END"

A digital display with a black background and yellow border, showing the text "STA:END" in blue, pixelated capital letters.

"STA:EDN"only means that the program has completed its operation. If the conditions of the current link cannot be met during the program operation, it will skip to the next link until it is completed, and the program will stop running!

High temperature protection
"STA:ERR"

A digital display with a black background and yellow border, showing the text "STA:ERR" in blue, pixelated capital letters.

"STA: ERR" means that the high temperature protection program is triggered and the charging and discharging program stops running. The protection may be triggered due to the abnormal operation of the cooling fan. It is necessary to check the cooling fan, remove the cooling fault, and then rerun the program.

4. Switch channels: click "通道/CHN" to switch channels, view and set channel parameters

CHN: 1

CHN: 2

CHN: 3

CHN: 4

5. Charging

5.1. Connect DC5V power supply. The charging mode must be connected with two 5V power supplies.



5.2 Adjustment mode: MODE:CHG filling battery

MODE: CHG

5.3. Click "启停/R/S" to run the program. The program starts, indicating the "STA:CHG". The charging process only records the time, capacity and energy. After charging, the program stops running, indicating the state: "STA:END".

Use 5V/4A power supply to charge four batteries at the same time. Refer to the measured charging time:
One way: 2084mAh charging, 3 hours, 16 minutes, 53 seconds



02084mAh
07931mWh
00031mR
003:16:53

6. Battery capacity measurement: the battery capacity can be measured only after the discharge is completed

6.2. Adjustment mode: "MODE: SDG", fill the battery to the battery holder



MODE: DSG

6.3. Set the required stop discharge voltage, taking 2.7V as an example



STOP: 2.7V

The battery has power voltage drop under load, and the voltage drop is the actual voltage that triggers the stop

6.4. Click "启停/R/S" to run the program. The program starts, indicating the state: discharge. Record the time, capacity and energy during discharge. After charging, the program stops running, indicating the state: STA: END.

The battery is measured with a stop voltage of 2.7V, and the measured discharge time is as follows:

One way: discharge 2231mAh, taking 2 hours, 24 minutes and 25 seconds



02231mAh
08010mWh
00031mR
002:24:25

7. Battery capacity separation and running cycle: "MODE: AUTO" mode operation procedure

7.1. Connected to 2-circuit DC5V power supply



7.2 Adjust the mode "MODE: AUTO" and fill the battery to the battery holder

MODE: AUTO

7.3 Set the stop discharge voltage

STOP: 3.0V

7.4 Set the number of cycles

LOOP: 1

7.5. Click "启停/R/S" to run the program: the program starts, indicating that the status "STA:CHG" represents the current running charging program, charging process records time, does not measure capacity and energy; Automatically switch to discharge after charging, indicating that the state "STA:DSG" represents the current running discharge program, recording time, capacity and energy during the discharge process; Switch to charging after discharging, indicating the state: charging, number of cycles = 1, the program ends running after charging, indicates that the state "STA:END" cycle number is greater than 1, enters the discharging mode again after charging, after entering the discharging mode, time accumulation calculation, capacity and energy re-measurement, charging and discharging cycle until the cycle is completed, the program ends,

the battery is full, indicating the state: STA:END.

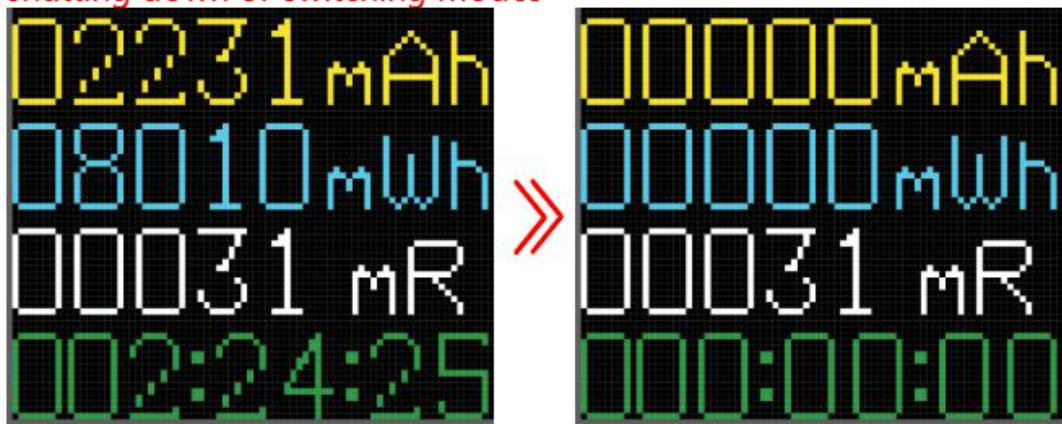
*Actual charging time reference:

Discharged battery, automatic
mode cycle 1 test: test capacity
2608mAh, time consuming: 9
hours, 59 minutes, 26 seconds

A digital display showing the time 009:56:26 in a white, segmented font on a black background.

*When the cycle is greater than 1, capacity metering only records
the last discharge capacity, non-average capacity

* Capacity, energy, and time data are cleared automatically when
shutting down or switching modes

A comparison of battery data before and after clearing. On the left, the data is: 02231mAh (yellow), 08010mWh (blue), 00031 mR (white), and 002:24:25 (green). On the right, after clearing, the data is: 00000mAh (yellow), 00000mWh (blue), 00031 mR (white), and 000:00:00 (green). A red double arrow points from the left to the right.